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 PLAYER

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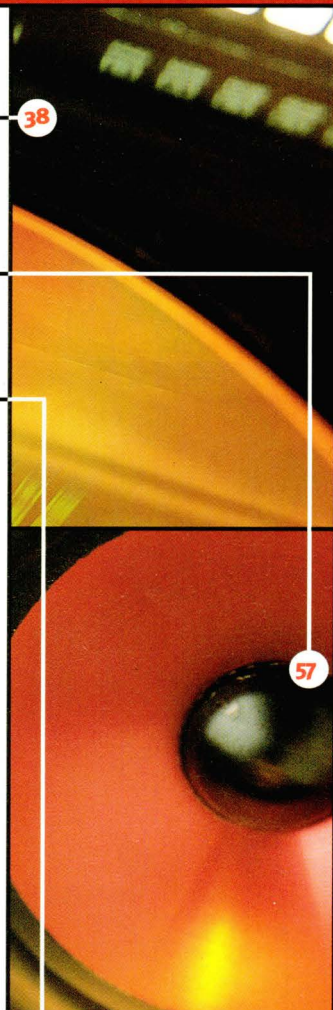
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HI-FI CHOICE

CHOICE WORDS

New wine in old bottles

This month you find me wrestling with deep philosophical questions of matters old and new. What's new? Micro-chip technology, I guess, and nowhere is there more proof of this than in the latest bunch of budget CD players that we've been testing this month.

What interests me is the proportion of players whose innards are squeezed onto fewer and fewer microchips, all in the name of lower prices. I feel this is yet more vindication for the old chestnut that CD's real impact was not as a new super-high-quality music carrier; instead, I believe its greatest contribution was to raise the basic standard of replay for inexpensive systems.

Why? Well, the process of LP reproduction was always a problem that responded to mechanical engineering solutions, ever greater degrees of tolerance and integrity, which, for the most part, improved as money was thrown at them. Hence the former cult of the high-end turntable, which premium manufacturers are trying to resurrect for CD.

But CD is a more complex beast to tame. And there is no guarantee that its feathers can be unruffled by large doses of cash, which poses a problem for exotic hi-fi's traditional reliance on added value. It seems increasingly true that less is more in CD: look deep among the many parameters of CD replay, find the ones which really matter, get them right – then worry about doing the fancy stuff later.

What's scary is that it's taken ten years to realise how little we know of the tortuous electronic pathways between digital music software and analogue squiggles of sound. Yet on the morning just before Christmas when I write this, the cards in my postbag are joined by the press release outlining Philips' and Sony's proposals for a new 'Multimedia CD' – one of whose implications is 'ultra-high-sound-quality audio.' A whole new ball-game is about to begin before we've learned all the rules of the first one. Even in this month's test, some players struggled to achieve the 16-bit performance you have a right to expect. They're budget designs, yes, but what does it say for the format?

While you'd be excused for thinking CD has a strangle-hold on new music, an old format is making a striking comeback right at the cutting edge of London's trendiest new music scene. This is the 'ambient musical science' or 'trip hop' movement centred around Mo' Wax, an independent record label run by 20-year-old, ex-club-DJ James Lavelle. This guy is young enough to have grown up with CD, but he's also matured alongside club culture, where the favoured medium is vinyl. And you'll have to believe me if I tell you his plastic is drastic.

Of the label's 20 releases in '94, one of the most seminal was a collection called *Headz*, a multi-faceted compilation of laid-back but utterly compelling sounds. On vinyl, what could have been a comfortable double album arrived as a lavish triple, allowing for a meaty groove-cut offering even the finest audiophile needle a spin for its money.

The best part, however, is that these discs have real-world price-tags. *Headz*, for example, comes in at just £10.99 – three chunks of lacquer for just 70 percent of what you'd pay for a single new CD. Mo' Wax doubles are an even better bet, at a paltry £8.99 each. It comes as no surprise that they're shifting like hot cakes – in the US as well as in chic UK record emporia.

So if a 20-year-old upstart can run a profitable business putting out good-quality vinyl at sensible prices, is it too much to ask that the Japanese-owned record conglomerates do the same?

Daft question, really; but since psychics are predicting that Maggie Thatcher will be re-elected leader of a Conservative party in opposition during '95, I'll keep my fingers crossed for a resurgence in vinyl. If only to laugh at the sad gits who flogged all their LPs only to buy them again on CD...

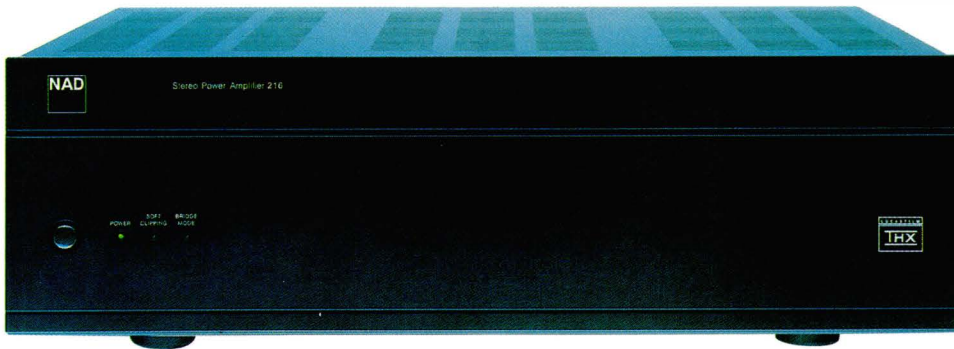
Stan Vincent,
Editor



UPDATE

As reported by our man on the hi-fi frontline, Malcolm Steward.

NAD, bad and dangerous



NAD's THX-approved 216: it's gotta lotta Watts

NAD is muscling in on the big power-amp market, with new models 214 and 216. The £350 214 delivers 80Wpc continuous power into eight Ohm loads, or a whopping dynamic power peak of 250Wpc into a two Ohm load. When it comes to the THX-certified, £450 model 216, a passable imitation of a generating hall results in 125Wpc continuous power into eight Ohms and

a dynamic power rating claimed to be a coil crunching 400Wpc into two Ohms. Both amps can be bridged for even greater pyrotechnics, should that be necessary.

Under the hood of both amps there's dual-mono construction with mirror-image PCBs, and protection against short circuits, DC and overheating.

☎ 0181-343 3240

Form an orderly Q

Three years ago Audiolab set out to design an amplifier that was totally free of coupling capacitors, a quest that led to the company's Z^Q technology, first seen last year in the 8000PPA phono preamplifier. Z^Q reappears in the new, line-level 8000Q preamplifier.

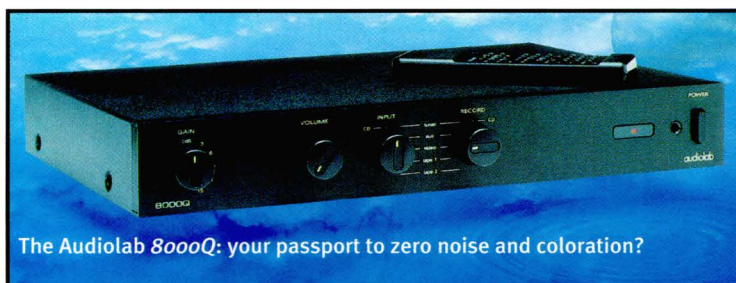
Though intended to be a more purist design than the existing 8000C preamplifier, the 8000Q (£1,000) still offers six inputs, three tape outputs, a direct-coupled headphone output and two sets of regular outputs. Input selection,

motorised-pot volume control and muting are handled by infra-red remote, while signals are relay-switched — all these are claimed to be sound-improving measures.

Z^Q is intended to obviate transient noise in DC-coupled amps caused by

input switching or changed volume settings. In the 8000Q, Audiolab claims input, feedback and servo signals are combined with no interaction, causing neither noise nor coloration.

☎ (01480) 52521



The Audiolab 8000Q: your passport to zero noise and coloration?

Grand stand

Kudos Audio's S50 and S100 speaker stands aim to combine stability and good looks. Three-point-spiked floor contact is achieved through substantial, triangular, steel (S50) or polymer-composite (S100) bases, and the rectangular-section top-plates are also adjustably spiked. The two sections fix to the central pillar using a pre-tensioned rod, obviating welding and its consequent sonic complications.

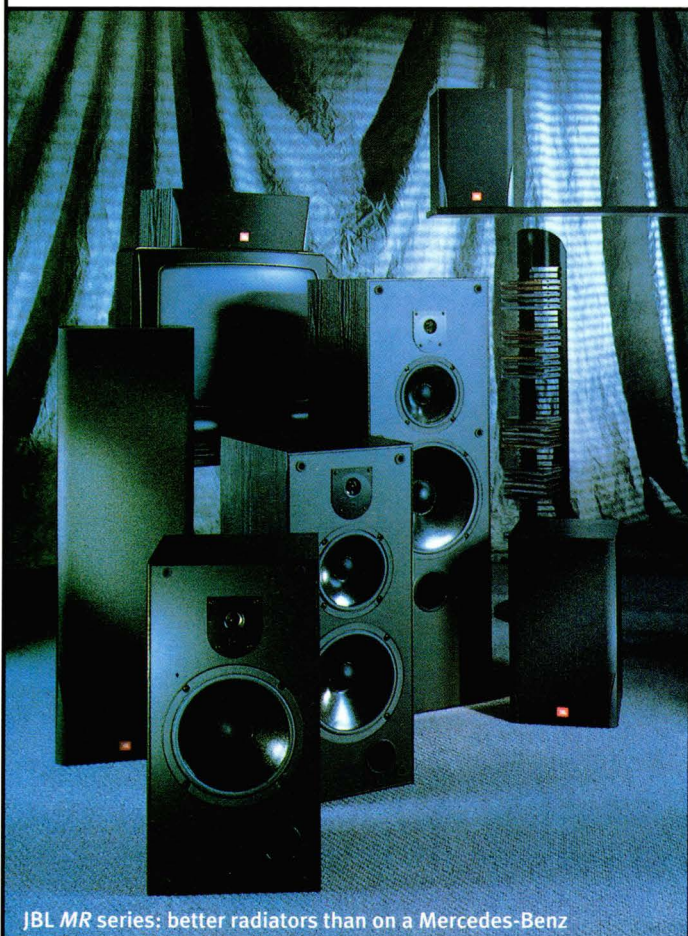
Standard heights for both models are 18 and 24 inches, but other sizes are available to order. Suggested retail prices are £100 for the S50 and £270 for the S100.

☎ (01732) 461648



Kudos S100: the secret's in the polymer-composite baseplate

JBL's big bottom



JBL MR series: better radiators than on a Mercedes-Benz

Earth-shaking vibes in the area as JBL unveils the new PS range of compact powered subwoofers, and MR series of budget speakers.

The three PS subs offer a combination of new technology and active equalisation. Prices range from £399 for the 50-Watt PS60, to £599 for PS120, which uses a 300mm driver to generate 120 flare-flapping Watts.

All models have adjustable crossover frequency and output levels, along with line- and speaker-level inputs, satellite speaker outputs and polarity inversion. Each is magnetically shielded for AV use, and has a signal-sensing circuit to provide automatic switch-on and off.

The MR monicker, meanwhile, stands for Maximum Radiating speakers. The line-up features two magnetically-

shielded, floor-standing three-ways: the £379 MRV308 and £479 MRV310. The rest of the range comprises five bookshelf models priced from £99 to £279 — all except the least expensive benefit from composite titanium tweeters.

JBL parent Harman Audio also has a wide selection of new components under the harman/kardon brand. The long list of new arrivals includes a tuner, three remote-controlled receivers, a five-disc CD changer, cassette deck, five integrated amplifiers, two AV receivers and an AV integrated amplifier. Look out for reviews in *Choice* soon!

☎ 0181-207 5050

harman/kardon's new hk 610



Going for Platinum

Ex-patriate British loudspeaker guru Phil Jones has designed a range of full-metal-diaphragm speakers under the aegis of a new company, Platinum Audio.

There are three new models that aim to put Platinum on the high-end map. All deploy proprietary five-inch alloy diaphragm woofers with oversized motors and substantial castings, plus domed tweeters with damped magnet systems. The heavyweight satin-rosewood and piano-black finished enclosures gain added strength from Jones's trademark method of clamping the bass driver from the rear.

The \$2499 Solo, \$3795 Duo and \$5995 Quattro had only dollar prices at the time of going to press, since a UK distributor was still being sought — more news after the Vegas show.

Historical footnote: Phil Jones designed the miniature, cult-classic Acoustic Energy AE1, then left the UK to create the equally innovative Boston Acoustics Lynnfield models. ☎ 00 1 603 647-7586

More speakers from space

The new Wharfedale Modus One-Three might look like a UFO bathroom accessory, but is in fact a 59-litre, floor-standing, three-way loudspeaker which uses 'staggered tuning' of reflex ports in the name of 'fast, powerful bass'. Styled to match Wharfedale's Modus range, the One-Three features the characteristic top-mounted tweeter globe, plus bi-wire facilities, spikes, and a black ash/anthracite finish. A pair will cost 440 of your Earth Pounds.

Second new Wharfedale speaker is the Diamond 6R. Outwardly unchanged, the latest iteration of the long-standing miniature uses a new, refined-fibre bass-driver cone for better midrange performance. Price is unchanged at £110.

Finally, Wharfedale's parent, the Verity Group, has acquired another musical business: along with Wharfedale and Mission it now owns Premierdrums. Clearly the company is on a roll. Boom boom. ☎ (0113) 260 1222

IN BRIEF

Amplifier manufacturer **Densen** has appointed Ipswich-based loudspeaker specialists Morel as the sole UK distributor. First product on sale is the £1299 DM-10, a 70-Watt, six-input, line-level integrated sans feedback, which is claimed to be capable of driving loads as low as one Ohm. Add-on phono modules cost £149 (mm) and £299 (mc). ☎ 01473 719212

The **Bush R701** Wireless combines '30s charm with modern IC-based AM/FM reception. The cabinet is solid, varnished wood, complete with a traditional, circular, match-needed, illuminated dial; plus separate band selector, tuning and volume controls. The internal speaker is larger than average, and the whole nostalgic package costs a mere £50. ☎ (01923) 859777

Denon's Alpha processing-conversion technology, first seen in the £6500 DA-51 DAC, has arrived in the UK at the more realistic price of £350. You can check out Alpha's real 20-bit DACs in the new Denon DCD-1015 CD player. ☎ (01753) 880109

Orelle has announced its new DA-188 'Open Window' DAC. On sale now for £379, the DA-188 uses an 18-bit, 8x oversampling chipset, and is intended as a budget CD player upgrade. Optical and coaxial inputs are both available. ☎ (0181) 810 9388

Moth's modular Thirty Series amplifier range has grown with the addition of a new active line stage and a line-level integrated amp. The active line stage is available with (£299) or without (£199) an external 100VA high-current power supply; both pieces are housed in timber-fronted aluminium cases. The new 30W integrated has eight line-level inputs and costs £320. Eight different timber fronts are available. ☎ (01234) 741152

Sequence has added a sub-woofer to its range of distinctive, panel-style speakers. In keeping with the its siblings, the new £300 SW12 is a wall-mountable design, being just four inches deep, but it can also be placed on the floor, or leant against the wall, using an optional accessory kit. Within there are two 18cm long-throw woofers, plus switchable high-pass filters and variable bass-reflex tuning. ☎ (01943) 864930

QUDOS is a new 'Balanced Design Concept' speaker cable from QED. Priced at £2 per metre, it uses 79 strands of oxygen-free, high-conductivity copper sheathed within a polyethylene dielectric. Accompanying the cable there's a new 4mm speaker connector, *Airlac* (£2 each), which features 'hexagonal crimp termination' — said by the company to be better than either screw or soldered joints, providing lower resistance and better long-term performance. ☎ (01276) 451166

THE AMPLIFIER FOR PURISTS



In order that you may fully enjoy the pleasures of digital sound, we re-evaluated every aspect of amplifier design.

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What's more, instead of the usual electronic and rotary switches, high grade relays are used to switch inputs and speakers, allowing the music signal to run over the shortest possible distance, making it less prone to degradation and interference.

All interference, especially crosstalk is further minimised because the left and right channels have separate circuits and heat sinks.

The JVC AX-A662XBK. A radical departure from conventional designs - the welcome arrival of the purest sound around.

JVC

Technically Perfect. Perfectly Simple.

IN BRIEF

Bravura has launched the *Accelerando*, a new £5500 horn loudspeaker based on the £4750 *Brio*. Suited to corner placement, the *Accelerando* uses a single Lowther *PM2a* driver in each cabinet. With a sensitivity figure of 102dB, the speaker promises an amplifier-friendly load, and claims to produce more extended treble, more forward bass and a faster response than the *Brio*. ☎ (01732) 851408

B&W's new *P Series* speakers — all floorstanders — all feature Kevlar bass/midrange drivers, and styling by the design company Pentagram. Top-of-the-range *P6* (£999) is a three-way with free-field, metal-dome HF unit mounted externally on top of the cabinet. *P5* (£799) is another three-way, but with a conventionally-placed tweeter, while the £599 *P4* is the smallest of the bunch, being an 81cm-tall two-way. Available in rosenut, black ash and cherry veneers, all speakers are reflex-loaded, high sensitivity designs. ☎ (01903) 750750

Mission has scooped two awards with a difference. First it was named Manufacturer of The Year at the Manufacturing Industry Achievement Awards, sponsored by Omron and Morgan Grampian; then it won Commerce Business Magazine's Company of The Year award for the East Anglian Region. Good show, chaps. ☎ (01480) 451777

Increasing demand for **JVC's** televisions and *Adagio* mini hi-fi systems has prompted the company to spend £9.2 million expanding its Scottish factory. A further 155 jobs will be created as a result. ☎ 0181-450 3282

Sound & Vision '95 will take place at the Bristol Marriot Hotel, starting 11am on Friday 24 February. The show runs until 5pm on Sunday 26 February, and there are ticket deals for couples, plus free admission for children under 16 years of age. Special deals are promised on hardware sold at the show (ten per cent discount on most purchases) plus a record-token promotion for buyers.

On sale in the New Year: a whole host of new speakers using **Bandor's** miniature, aluminium-anodised drive units. The transmission-loaded *Bandoline 30* (approx. £1600 per pair) and *20* (approx. £1800 per pair) have been designed to exploit the Bandor 150mm bass driver. The *Bandora* (approx. £900) is a full-range compact speaker system with 2-inch and 4-inch cones, which can be augmented by the *Mora* bass unit (£1800). Last but not least are the *Bandor Pictures* (approx. £300): a 2-inch Bandor driver, mounted in a ceramic/wooden frame, which mounts on the wall for high-quality but discreet sound. ☎ 0494 714058

Delta force

Fancy a cost-effective upgrade for your Arcam *Delta 290* integrated? You could do worse than try the *Delta 290P* power amp. This new 75-Watter retails for £400 and uses the same high-current power amp stages used in the *290*, making it ideal for moving from a bi-wired to a bi-amped system with the *290* driving the tweeters and the *290P* driving the bass/midrange units.

The *Delta 290P* is equally suitable for use with other manufacturers' preamps — two independently-switched pairs of speaker outlets mean it can be used for multi-room or multiple-speaker applications.

If you buy a *290P* before the end of March it'll come with a free set of 0.6m AudioQuest *Emerald* interconnects, worth over £100. ☎ (01223) 861550

Arcam's *Delta 290P*



Tubes 'n' vinyl alert

Audio Innovations has introduced a £299 phono amplifier. The valve-based *P1* is compatible with moving magnet and high-output moving coil cartridges, but owners of low-output moving coils will need an additional step-up device such as Audio Innovations' *T1* transformer.

The *P1*, which uses double triodes in a simple anode follower configuration, eschews negative feedback and features a passive RIAA equalisation circuit. ☎ (01305) 761017

Audio Innovations' *P1* phono amplifier has valves, you know



Stax *SR-Omega* earspeakers — play 'the lowest conceivable' notes

Stax attacks

Got £1695 in your back pocket? You can now dispose of that troublesome bulge by investing in "the most acoustically-transparent transducer available today".

That modest-sounding device is the Stax *SR-Omega* headphone, a circumaural electrostatic device which has been five years in the making. It uses circular diaphragms 50 per cent larger than those in Stax's *SR-Lambda* and *SR-Sigma* models, enabling the *Omega* to easily reproduce the "lowest conceivable" musical notes.

The diaphragm assembly also includes a gold-plated, high-purity, copper-mesh electrode to drive the 1.4 micron diaphragm. All fitted into a housing milled from anodised, aircraft-grade aluminium.

The *Omega's* PC-OCC cable is heavier than on previous models — each lead is individually cast to maintain its crystal structure. The 'phones, or 'earspeakers' as Stax prefers to call them, come in a Paulownia wood case that doubles as a handy cigar humidior. ☎ (01494) 441736

Sumo back

The Californian Sumo brand is back in the UK, courtesy of Audusa & Co. They'll be importing Sumo's power amps, preamps and a transport/DAC combination.

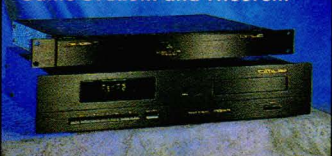
Power amps include two class A models: *The Ten* (100W, £2834) and *The Five* (60W, £1784); plus the class A/B *Andromeda III* (£1784),

Polaris III (£891) and *Ulysses II* (£629). Preamps include the two-box *Diana* (£1469) and the remote controlled *Artemis* (£1574). There's a DAC module for the *Diana* at £524.

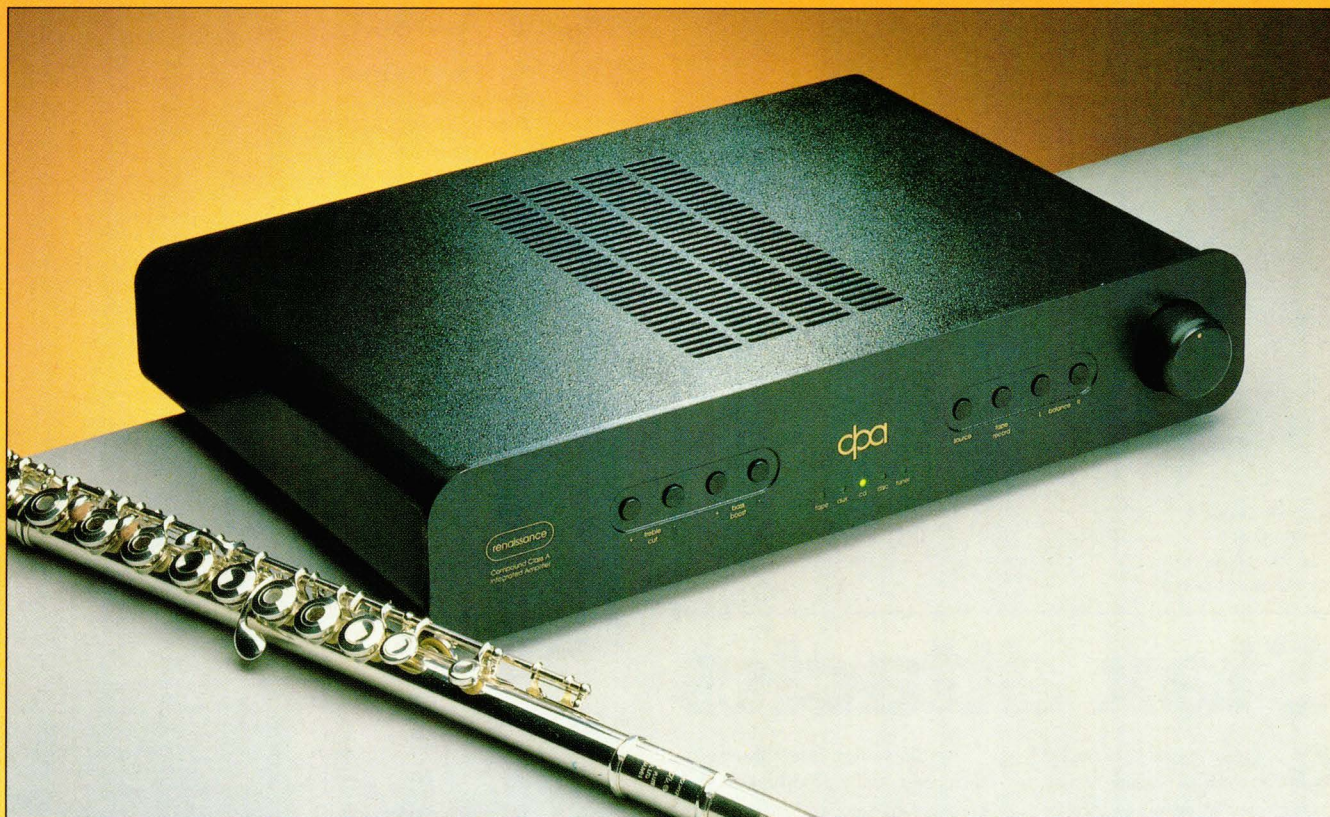
On the CD front Sumo offers the *Axiom* transport (£781) and the *Theorem* DAC (£875). Both units have AES/EBU connections and the *Theorem* DAC has class A analogue stages.

Strangely, Audusa hasn't mentioned Sumo's dedicated subwoofer-crossover, the *Delilah*. All we can ask is: why, why, why...?! ☎ 0181-395 0793

Sumo's *Axiom* and *Theorem*



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Renaissance - affordable High-End reborn

The logo for dpa, consisting of the lowercase letters 'd', 'p', and 'a' in a stylized, bold, sans-serif font. The 'd' and 'p' are connected at the top, and the 'a' is separate.

dpa Digital Ltd., 7&8 Willowbrook Lab Units, Crickhowell Rd., St Mellons, Cardiff, Wales CF3 0EF
Tel: (01222) 795621 Fax: (01222) 794267

NEXT MONTH

HI-FI CHOICE

TABLETS OF STONE FOR THE CHOICE-EN PEOPLE

AND IT CAME TO PASS...

...that March shall be the month of Amplifiers. Eight shall be the number that are tested, and the number that are tested shall be eight. And they shall come from all corners of the world, and Brighton in the case of Onix. Will DPA smite the mighty Audiolab; and will the Mission lie down with the Musical Fidelity?

LO!

The *TapeTapeTape* supplement begat cassette recorders. And they were many and numerous. If thine tape machine turns flutter to whine, cast it aside. Read of our testing, or feel the wrath of our head azimuth. The Recording Meters of Might will speak forth, casting their judgement upon Aiwa, Denon, harman/kardon and others.

VERILY...

...will thee witness the miracle of three-channel stereo. Stare agog at the ultimate in home entertainment. Doubt not the might of Huntingdon as a multitude of reviewers are seen feeding the Meridian Digital Theatre: a system so loud and realistic, it will tear down the Walls of Jericho.

FORSOOTH

In Sessions, no plagues of frogs or locusts, but the pages shall rain down with the newest, finest hi-fi. Its end shall be single and its glass shall be triode — Gamma's new *Gemini* integrated amplifier is cheap enough to keep the money-changers at bay.

PLUS: A FREE GIFT!

Which shall be called Pocket Power! Your guide to all the best personal CD players, and the accessories you'll need to become a qualified Mobile Audiophile.

**March 1995 issue on-sale
Friday March 10**



Not an advanced plant stand, but part of Meridian's amazing *Digital Theatre* system — exclusive in-depth review next month!



Mission's *Cyrus III* amp — in next month's group test

Choice SESSIONS

It might be the coldest month of the year, but these new goodies will keep your ears warm.

CD PLAYER

Arcam Alpha 5 plus

PRICE: £470

- ▲ Improves upon the *Alpha 5* performance; greater imagery and clarity.
- ▼ Those seeking the relaxed performance of the earliest *Alphas* may not approve.

Ever since Trichord released its *Clock 2* modification for CD players, it seems that every other company has been looking to cash in by incorporating their own circuits to improve timing. Take Arcam: it's just upgraded the evergreen *Alpha* once more, labelling it the *Alpha 5 plus*. The 'plus' modifications push many things forward, including the price (up by £20 to £470), but the main differences are on the new audio board. This features an improved clock circuit with a

discrete oscillator. Arcam also reclocks the data between chips, which is claimed to reduce data jitter.

Arcam has performed minor tweaks to the power supply and circuit layout. However, you can only go so far with the existing chipset on the *Alpha 5*, which is now getting decidedly long in the tooth, so it's likely that the next improvements to the *Alpha 5* will be more substantial.

I compared the *Alpha 5* to the *Alpha 5 plus* at Central London's KJ West One. Sonically, the *plus* is a subtle, yet significant improvement over the *Alpha 5*. The new model has improved low-level detail retrieval, which readily manifests itself on the intros of tracks on the Cowboy Junkies' *Trinity Sessions* CD.

Separation of instruments gives the *Alpha 5 plus* a cleaner, slightly cooler balance than the *Alpha 5*, but as the original was almost too warm, this is no bad thing. On *Break And Enter*, by The

Prodigy, the *Alpha 5 plus* sounds more informative and coherent, while also less muddy and less indistinct. The soundstaging is better; there is still the characteristic lack of image depth that only the finest CD players can overcome, but at least there is some image depth.

I've always liked the giant-killing Arcam *Alpha* — in many ways it offers the best balance of sound and value around. Of late, though, its crown started to slip thanks to heavy competition from companies like Micromega. The *Alpha 5 plus* pitches Arcam right back up there as the leader of the pack.

A retrofit upgrade will be available to *Alpha 5* owners for a shade under £100.

Alan Sircom

A&R Cambridge Ltd,
Pembroke Avenue, Denny
Industrial Centre, Waterbeach,
Cambridge CB5 9PB.

☎ (01223) 440964

AMPLIFIER

Copland CSA 14

PRICE: £999

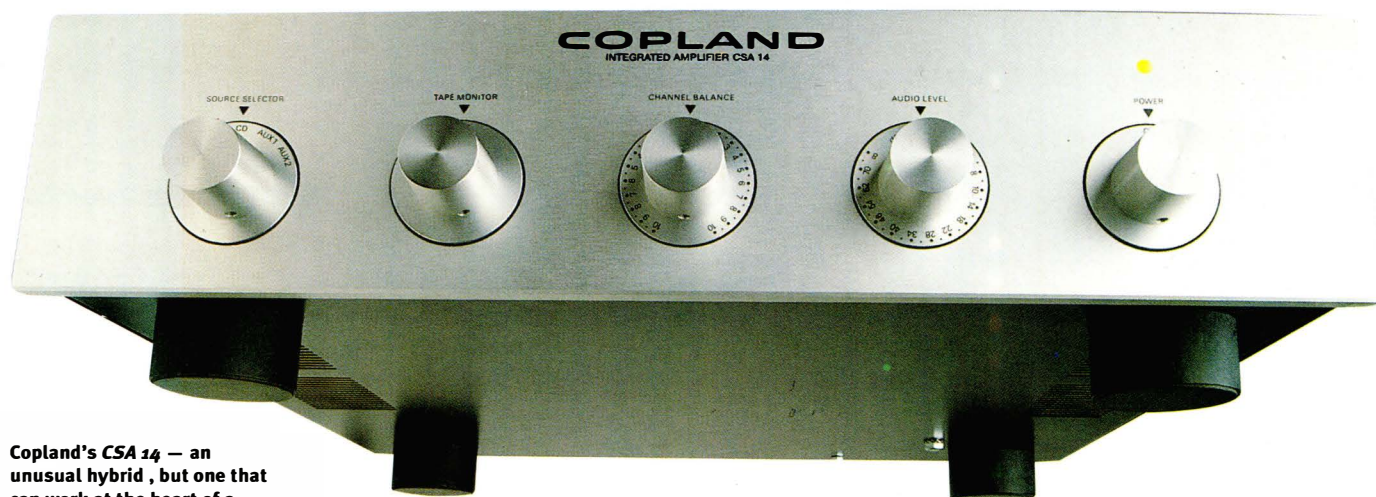
- ▲ Lively first rung on the high-end audio ladder; impressively light, yet refined and detailed musical performance; solid build.
- ▼ Some purists will balk at hybrid technology (more fool them!).

The trouble with valve amplifiers is that they are large, heavy and expensive. Meet the Copland *CSA 14*: it's small, light and relatively cheap. But it's not a valve amplifier — well, almost.

The £999 *CSA 14* is the first integrated amplifier from Copland that doesn't exclusively sport 'hollow state' technology, and it's a real honey. Using triodes at the point where the



The Arcam *Alpha 5 plus* — offers a subtle but significant improvement over the *Alpha 5*.



Copland's CSA 14 — an unusual hybrid, but one that can work at the heart of a budget high-end system.

preamp and power amp stages meet — and nowhere else — sets the Copland amp apart from every other valve/solid state hybrid on the market (most use tube gain stages in either the preamp or power amp sections alone, to add a bit of warmth to the amp sound).

Despite the move towards solid-state and the low price, neither the sound nor the superb build quality associated with this Swedish company have been compromised. The CSA 14 still sports the classic Cello-like front panel dials and is built like it could be used for battlefield hi-fi reproduction. Indeed, the latest versions of the amp are being fitted with the military-spec Sovtek valves from Russia.

It has a light, delicate tonal balance that is perfectly suited to drive smaller speakers. In addition to my usual ProAc Response One 'S' speakers, I used the CSA 14 with a pair of Sonus Faber *Minima Amators* with great success. Refinement is the word that keeps reoccurring when it comes to the CSA 14, whether on MM phono or line input: refinement of image, presenting a soundstage that is never out of kilter; refinement of detail, revealing much about a recording without the feeling of music being laid bare; and refinement of coherence, playing admirably loud when required, but still hanging together with consummate style and grace.

The Copland CSA 14 is an exercise in sophistication. Reviewers often recommend products in isolation, while end users, naturally enough,

tend to look at products like the CSA 14 as part of a system. However, in this case, I can happily suggest that simply combining the amp with a decent £1,000+ CD player or turntable, a pair of Sonus Faber *Minima Amators* and some pukka cables will give a comparatively inexpensive system with its feet firmly placed in the high-end. It's packed with refinement and detail, yet still has a sense of fun and is capable of letting rip with heavy rock when required.

Alan Sircom

Absolute Sounds Ltd, 58 Durham Road, London SW20 0DE.

☎ 0181-947 5047

TURNTABLE MAT

QR Developments Ringmat MkII

PRICE: £40

▲ Improves clarity, detail, and dynamics.

▼ Fine adjustment of arm height may be needed for optimum results.

One of the most interesting and unusual accessories available for those still playing LPs is QR Developments' *Ringmat*. Made from a thin piece of card with strategically placed cork rings to support the record, it's intended to replace your existing turntable mat. But it can also be used successfully with decks that don't have a mat — like Voyd, Pink Triangle, Michell, etc.

QR Developments' original *Ringmat* was introduced about two years ago and received a good response from press and public alike. I found it most effective, and felt that it gave improvements in clarity and fine detail that ordinarily you'd have to spend much more money to obtain.

Essentially, it helps give LPs the kind of firmness and stability normally only available from master tapes. It improves clarity and dynamic range, resulting in a sharper, more tactile presentation. Some listeners found that the original mat could sound over-bright, but any problems here can usually be eliminated by lowering the arm height.

QR's John Rogers has now come up with a MkII version of the *Ringmat*. This looks fairly similar, but the 'mat' is made from more flexible card and there's an extra cork ring on the underside. Given the excellence of the original *Ringmat*, I was a bit sceptical about whether or not the MkII would provide a worthwhile improvement — it did!

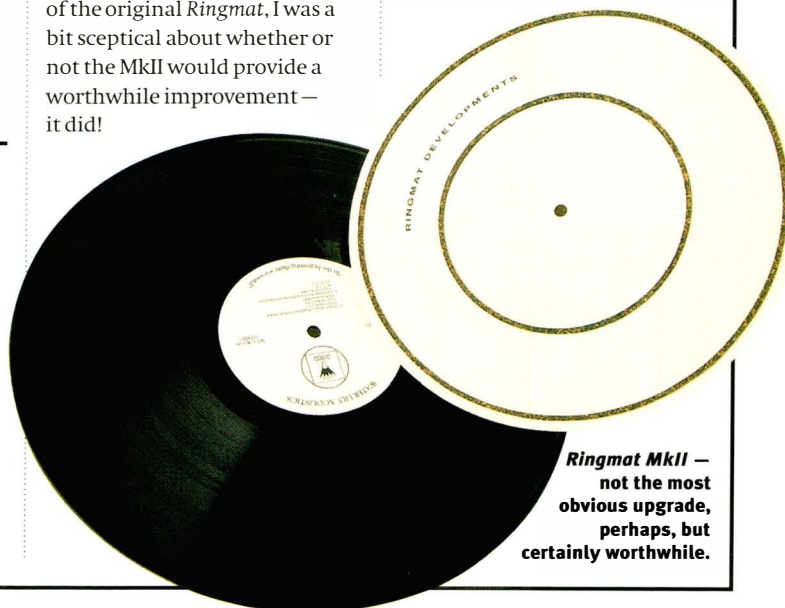
The new mat is essentially similar to the original, but clarity and fine detail are further enhanced, and the bass is slightly firmer. Put on an LP of complex synthesiser music, and the sound is even cleaner and better-sorted. It sounds as if the stylus is tracking the grooves more comfortably, leading to a firmer stereo image.

Because of this, I believe that extended use of the *Ringmat* should help increase cartridge life by lowering stylus wear. This MkII version of the *Ringmat* costs £40, an increase of £5 over its predecessor (still available at £35 while stocks last). I know that I could be happy with either, but feel that the MkII is worth the extra cost in terms of its improved performance.

Jimmy Hughes

Virtual Reality, PO Box 383, Brentwood, Essex CM14 4GB.

☎ (01277) 227355



Ringmat MkII — not the most obvious upgrade, perhaps, but certainly worthwhile.



Take a listen to the Thorens *Consequence* pre and power amps — keying is believing

PRE/POWER AMPLIFIERS

Thorens *Consequence*

PRICE: £1,050

- ▲ Superbly built pre/power combo; solid, weighty and highly controlled sound.
- ▼ Preamp needs better PSU to get the best from the power amp.

So the start-up key is a bit too kitsch for most tastes — it's hard to resist the temptation to make 'Vroom, Vroom' noises when you turn it on — but there's no denying that the Thorens *Consequence* pre/power amps really look the business. Finished in black with gold relief, sporting front-panel displays that light the central Thorens logo on each section, these half-sized amplifiers look far more elegant than the price tags would suggest.

The five-input £500 TTP 2000 preamp and 35W £550 TTA 2000 power amp are every bit as well-made internally. Both amps look set to give years of work-horse use with little reason for complaint, but plenty of heat. The power amp is biased to run in Class A for its first 11 watts, and is therefore seriously hot to

the touch. Once the ignition is fired the same box also feeds mains to the preamp, which itself takes hours to warm up — buyers are in for a torrid time. (The preamp has its own power supply, though with a rather small transformer, and is only supplied with a link to the power amp rather than to a standard mains socket.)

These are entirely minimalist amps, even eschewing channel balance and tape monitoring in the pursuit of better sound. That said, it is likely that by the time you read this the preamp will have been upgraded to include remote control. Another highly commendable attribute is the mains phase lamp just below the power inlet of both the pre and power amplifiers. This can determine whether both products have the correct mains polarity.

First impressions are of an amplifier blessed with plenty of control, especially for such an inexpensive, yet well-made, pre/power combination. Stereo imagery is pleasantly wide, but gives the impression of a rather narrow soundstage just to the rear of the speakers. There is a slight lack of coherence and finery to the overall musical performance, but this must be set against the palpable sense

of solidity and realistic scale to the instruments played.

Maybe I couldn't get the Naim-sized boxes or the glowing logos out of my mind, but I felt very positive toward the rhythmic qualities of this Teutonic Twosome, although a Naim combo would certainly out-perform the Thorens in this important aspect. However, the Thorens has a warmer, more comfortable balance than many solid-state amps.

Unsurprisingly for a company with a vast history in turntables, the MM disc stage is very precise, detailed, clear and every bit as competent as the line stages. Switching over to moving coil cartridge was less rewarding, however. My advice would be to use a cheap and light-sounding MC, or invest in a decent step-up transformer.

On the whole, this is a fine duo. The preamp is in desperate need of a decent power supply, though, and my feeling is that it shouldn't be used fed from the power amp. But this shouldn't detract from the excellent build and sense of control it offers. Just don't lose those keys!

Alan Sircom

Portfolio Marketing, PO Box 442,
Great Missenden, Buckinghamshire
HP16 0JB. ☎ (01494) 890277

LOUDSPEAKER

Royd Sorcerer

PRICE: £595

- ▲ Extremely musical and communicative speaker that's fun to listen to.
- ▼ Front grille not the last word in aesthetics.

An almost total absence of press activity surrounded the £595 *Sorcerer* launch, and it seems that many reviewers — and potential customers too, presumably — are still unaware of the speaker's existence. The *Sorcerer* is a seven-litre bookshelf speaker. Traditionally, such small Royd enclosures were all infinite baffle (sealed box) designs; the *Sorcerer* breaks this mould with the addition of a front port.

The port goes some way toward extending the bass down to a claimed 35Hz, while still maintaining an easy eight-Ohm impedance and a suggested sensitivity of 86dB. The *Sorcerers* need a lengthy run-in and, according to Royd, will only perform at their best above 15°C. Once they settle in, the bass fills out and they sound more musical and alive. They are designed to work close to a rear wall, so holographic sound-staging and image depth are not priorities. Instead, you're blessed with a vivid, up-tempo performance that never sounds small. Though best suited to average-sized rooms, the *Sorcerers* have enough energy to fill out larger rooms at a pinch.

They have a slightly rich, warm tonal balance, coupled with a slight zing to the upper frequencies. The *Sorcerers* don't have the sort of 'high-end' smooth detail of a ProAc *Response One 'S'*, but they are consummately musical, underpinning any hi-fi niceties with a wicked sense of rhythm. It's also possible to use the *Sorcerers* in the near field, placing the speakers along the base of an imaginary isosceles triangle. This dramatically

**Royd Sorcerer —
magic is
as magic does**

improves the imagery, but to get balanced bass weight, the speakers need to be about three feet from your ears, which is hardly practical in most listening-rooms.

In fact, my only criticism regards the *Sorcerer's* inability to play music at very high volume levels. Yes, they will play loud, but if you want those moments of head-banging, you may have to look elsewhere.

Then again, if you want quality, compatibility and the ability to mount your speakers close to a wall, I can't think of a better design than the Royd *Sorcerer*. Although I believe that the speaker is so-called because of its pointy hat-like phase plug in the bass driver, perhaps it's because they sound magical.

Alan Sircom

Royd Loudspeaker Company Ltd,
Unit B2, Stafford Park 15, Telford,
Shropshire TF3 3BB.

☎ (01952) 290700

A few words of apology are due to the folk at Royd. Though we had two opportunities to redress the balance, we still failed to mention that the *Minstrel*, tested in issue 135, was actually awarded a Best Buy rather than just a Recommendation.

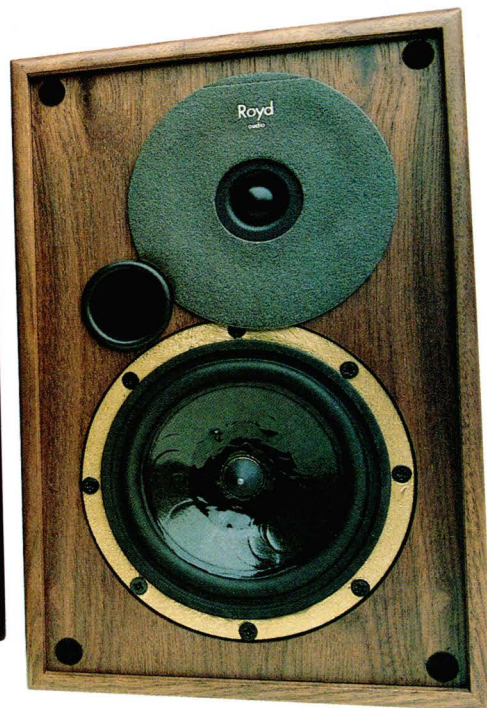
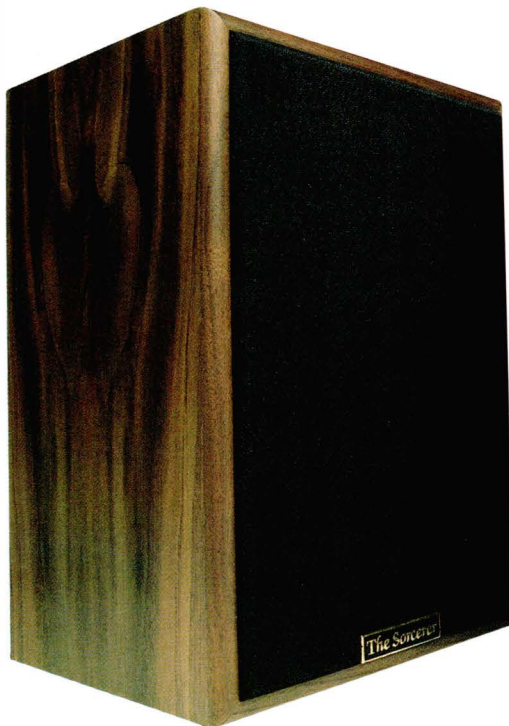
CD PLAYER

**Marantz
CD-63SE**

PRICE: £350

- ▲ **Clean, civilised balance, good sense of timing.**
- ▼ **Soundstage only in two dimensions.**

Marantz has made a habit of bringing out special edition versions of its CD players, and amplifiers too for that matter. Looking at past models you can see why. The *CD-52IIE* had an unwieldy name but was a tremendously successful model. What SE means, in this instance, is an OFC (oxygen free copper) mains transformer, a stronger



base plate and chassis bracing to improve structural solidity, ventilation slots (said to improve temperature stability) and copper plated shielding on the HDAM op-amps in the output devices. The latter are discrete amplifier modules that are claimed to offer a significantly better slew-rate and signal to noise ratio; good technical stuff that should, in theory, mean less distortion.

What you get for your £350 is a neat slimline player with a comprehensive selection of facilities, a good variety of output sockets (including an electrical digital output — good news if you ever want to upgrade with a separate DAC), remotely-controllable output

level (effectively remote volume control) and a dimmable display to cut down the glare.

Sonically, the SE effect tames the slightly aggressive tendencies of the regular 63 and improves its dynamic abilities to the extent that low-level listening is a whole lot more engaging. Tonally it has a slightly detailed balance that enhances treble a tad, but without adding glare. Bass is deep, solid and as fast as ever with Marantz CD players. The whole thing times very nicely, forcing your foot to tap of its own accord. It also does a good job of differentiating between production styles, by which I mean it brought out the variety in recording and mastering

techniques between albums effectively — an area that a lot of players fail in, and by doing so reveal their limited resolution.

Where the *CD-63SE* and the majority of CD players fall down is in the resolution of depth; something that the Sony *CDP-715E* and most players fitted with the Trichord *Clock 2* mod have revealed is available from the medium. Last year the *63SE* would have been a first class player, but the goal posts have moved. CD players with flat soundstages no longer cut it.

Jason Kennedy

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

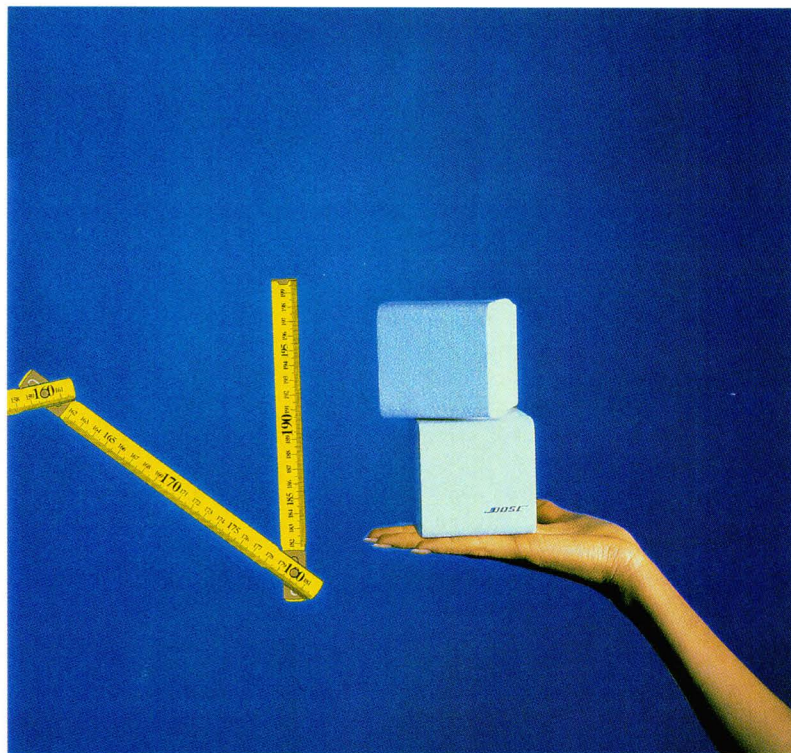


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Julian Hirsch, Stereo Review

"...only Bose® really managed to achieve a satisfactory in-room balance. Most of the others merely supplied an excess of midbass alongside no more actual extension than a pair of conventional budget speakers."

Paul Messenger, Hi Fi Choice

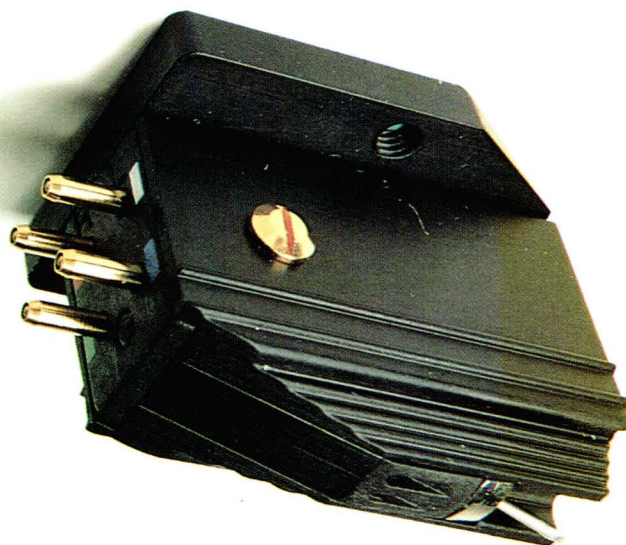
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The MC25E (left) and MC25FL (right) — two more excellent cartridges from Ortofon.

MC CARTRIDGES

Ortofon MC25E & MC25FL

PRICE: £160/£210

- ▲ Very safe upgrade option for that difficult 'second MC' decision; highly neutral balance; FL is a great budget high-end.
- ▼ FL may overwhelm some mid-price turntables; not the warmest of cartridges; could do with letting their hair down sometimes!

I'll be honest. Fitting either of these cartridges after using an Ortofon MC7500 for several months was a bit of a shock. The temptation was to slaughter the pair of them for not being up to the standard I'm used to. But scarcely a moment's reflection convinced me that to do so would be pretty dumb, not least because the MC7500 costs about ten times as much.

In fact, having overcome the initial shock, both cartridges proved less of a downgrade than I'd expected. Granted, you lose the absolute fidelity of the 7500, but retain that overall neutrality and tonal accuracy. You gain in as much as that both cartridges can easily drive most moving coil input stages. Try the same input with a MC7500 and you lose about half the volume level.

The two MC25s are identical save for their stylus profiles. The

MC25FL uses a fine-line diamond; the cheaper MC25E uses an elliptical stylus. The FL is said to offer better tracking, separation and channel balance.

Both cartridges are similar in performance, though £50 for the fine-line stylus is money well spent. Ortofon's typical lack of coloration is common to both and the ability to track a difficult LP and give a realistic soundstage is hard to fault. The FL adds zing to treble detail and more transparency to an already open performance window. But it may offer too much zing for cheaper arms, so be wary.

Those weaned on a Goldring Erotica or Linn K9 may find the MC25 — particularly the MC25FL — a bit too stark and honest. Though faithful to what's on the LP, both MC25s stress the detail, sometimes to the detriment of the music. The MC25FL should be seen as a low-cost partner for decks like the PT Anniversary or SME Model 20; the MC25E is better thought of as an upgrade for a mid-price turntable.

Fitted to anything above a Rega Planar 3 and played into any decent MC phono stage, either cartridge will add clarity. Even so, my advice is that if your turntable is good enough, go the extra £50 for the fine-line stylus... it's more than worth it.

Alan Sircom

Ortofon (UK) Ltd, Chiltern Hill, Chalfont St Peter, Buckinghamshire SL9 9UG.
☎ (01753) 889949

Record review

Sir Malcolm Arnold
Symphony No 2; A Grand, Grand, Overture; Concerto for two pianos
Royal Philharmonic/Vernon Handley
Conifer CDCF 240

Overtures don't come much grander than Arnold's splendidly noisy *A Grand, Grand, Overture*, scored for large orchestra and organ — plus 3 vacuum cleaners, a floor polisher, and four rifles! Written for the first of Hoffnung's annual musical extravaganzas at London's Royal Festival Hall, it's a riotously funny piece — once heard, never forgotten. Yet beyond the sound effects, the work contains some good music, and it is surprising that performances (and recordings) aren't more common — can it really be that hard to find accomplished players of the vacuum cleaner?

Arnold's *Concerto For Two Pianos* was written for Cyril Smith and Phyllis Sellick, and it is the usual bitter-sweet mixture of light and serious characteristic of this composer. The slow movement is very touching, with a beautiful

melody that effortlessly combines classical and pop music. But it is the finale that really catches the ear with its jaunty tune and cheeky syncopations. *Carnival Of Animals*, here receiving its first recording, is Arnold's riposte to Saint-Saen's piece and features species the French composer left out! These include a flock of sheep (wittily going round in circles to Handel's *For We Like Sheep*) and a silent finale — for bats!

The second symphony is the most substantial work on the disc, and it's a piece of wide contrasts — from the gentle almost whimsical opening, to a profound slow movement lasting over twelve minutes. A

rousing finale brings the work to its conclusion. Orchestral playing is spirited and enthusiastic, and the RPO give assured performances under Vernon Handley. Conifer's 20-bit recording is special too, with a very wide dynamic range and some very deep powerful bass. The organ in the *Overture* is suitably thunderous, but the bass-drum cuts cleanly through the densest texture. Played loud, this is a real corker!



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AMPLIFIER

Quad 77

PRICE: £595

- ▲ Future-proofed integrated amplifier that maintains all the old Quad virtues.
- ▼ Rather limited in its basic guise.

Thirty years ago, the leading edge of home entertainment comprised turntable, radio and open-reel tape for the well-heeled. TV was expensive, monophonic and of limited picture quality, computers were the domain of Auric Goldfinger and NASA, home cinema was for those who lived next door to the Gaumont and the nearest thing to a Game Boy was the Penny Falls at the Kursaal. Quad was at the pinnacle of the home entertainment market, with its legendary range of amps, tuners and electrostatics. But with the rise of cassette, CD, Nicam stereo, Dolby Pro-Logic and with a plethora of new formats just around the corner, Quad hi-fi is now rather less important in the grand scheme of things.

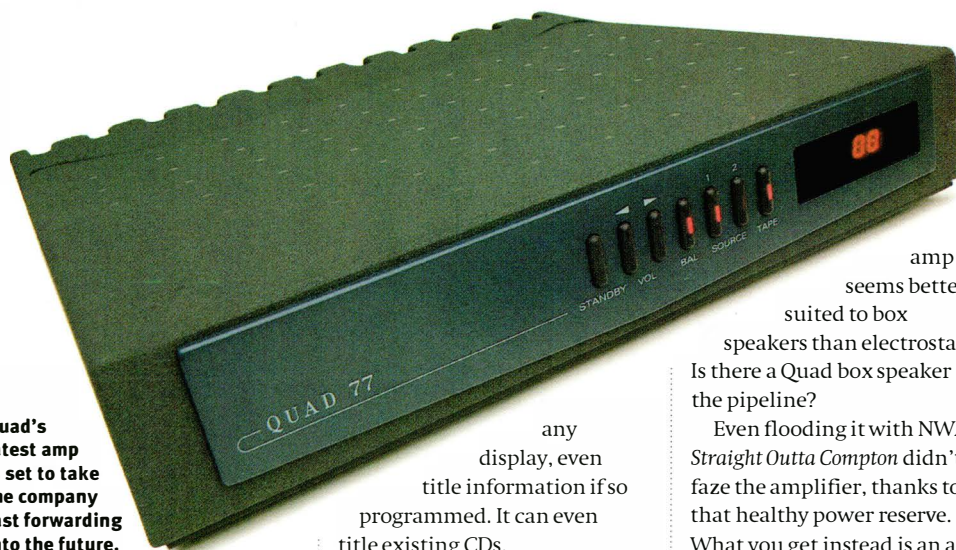
But with the new £595 Quad 77 amplifier and matching £250 remote, the first of a wholly new Quad range, the company looks set to move back to the forefront of home entertainment. This has nothing much to do with the sound quality of the amp, rather that the 77 is easily the best option for someone who wants to link computer, home cinema and hi-fi together, with the prospect of further expansion as new technology appears.

Opening up the 77, one is reminded more of a computer than an amplifier. The amplifier is a 70watt Class B design, capable of swinging a healthy 11 amps peak current. The 77 does without Quad's feed-forward Current Dumping output stage, in favour of a more orthodox complementary feedback design. This is because feedback designs are inherently more stable than Current Dumping in smaller implementations.

Quad's latest amp is set to take the company fast forwarding into the future.

There are two ways of connecting up the 77. One, for non-Quad sources, is as a conventional amp, via two line inputs and a tape loop, using standard phono plugs. The next generation of Quad products — of which there are many, with 15 already on the drawing board — use the new Quadlink bus. This comprises of a differential analogue audio path together with digital communications pathways and a differential digital audio path. There is even a 30V ac linkage to power other products, so only one mains lead is needed per block of Quad products. All these Quadlink signals run along the same bus lines, connected via a multi-pin D-Sub port, as used in the computer industry. Via the Quadbus, the 77 amplifier will automatically determine which of the connected products is the master and which are the slaves, but this can be re-configured by the user if necessary. Ultimately, Quad hopes that the Quadlink bus will be adopted as a standard by other companies in a manner similar to the RS232 port in the computer industry.

All this is sophisticated enough, but soon pales into insignificance when the £250 Quadremote is brought into play. This transforms the 77 into the nexus of a sophisticated and admirably future-proofed home entertainment complex. Connect up any of the forthcoming Quad products to the amp and the two-way infra-red Quadremote will control every parameter of that unit, showing all controls and



any display, even title information if so programmed. It can even

The potential is there for the Quadremote to act as a gateway, intelligently operating any remote controllable product, in the manner of the best learning remotes. In theory, up to 256 sources can be controlled from a single remote and can be given preferred user settings, so that the system will automatically default to a particular source, preset or volume level, when that setting is actioned.

Like many of the British hi-fi establishment, Quad's amps have come in for some flak of late. Reviewer after reviewer seem convinced that the Quad range is somehow dull. Yet the 77's performance is smooth and satisfying, whatever the music. It will not disgrace itself, even when placed with some seriously expensive equipment.

Most alluring of all is a silken sense of coherence, especially in the all-important mid-band. This makes recordings like Crowded House's *Woodface* sound sumptuous. But midband coherence is partnered with generous helpings of detail, and these really shine at everything above the lowest volume levels. The extreme bottom and top of the frequency range are less detailed than the mid-band, but only marginally and loses no power in the bass, which is rare.

As might be expected of a company who sponsor classical recordings, its performance on hard rock or dance music is not as hard, rocky or dancey as is possible, but it is still capable of sounding more lively than many amplifiers that are often confined to the 'Classical Only' bin. Strangely, however, the

amp seems better suited to box speakers than electrostatics. Is there a Quad box speaker in the pipeline?

Even flooding it with NWA's *Straight Outta Compton* didn't faze the amplifier, thanks to that healthy power reserve. What you get instead is an amp that presents a fine soundstage, decent dynamics and plays rap with as much aplomb as an Gilbert and Sullivan overture.

There is plenty of musical integrity and honesty from the Quad 77. It's not the sort of amplifier to fake a false sense of timing, push the sound forward, or bathe the listener in some false warmth. As most amps at this price will pull the listener in one of these directions, the performance of the 77 is more adult, more sophisticated and ultimately more rewarding in the long term.

If you are convinced that your needs will progress no further than a CD player, tuner and tape deck, the Quad 77 will be more than capable. But a few years from now, when those extra inputs prove vitally important, the Quad 77 can still form the core of the system. Unlike many of today's products, the Quad 77 will be hard to outgrow.

The sound quality is, in many respects, the least important aspect of the Quad 77. The ideas behind the design owe as much to William Gibson and Phillip K Dick as Blumlein and Edison. This is the amp to let early adopters link their technologies together, smoothly expanding as we add more lanes to the infobahn. When someone finally invents a Gibson-esque Cyberspace deck, I bet it'll have a Quadlink port on the rear. Future-jockeys everywhere will see the sense of the Quad 77.

Alan Sircom

Quad Electroacoustics Ltd,
30 St Peter's Road, Huntingdon,
Cambs PE18 7DB. ☎ (01480) 52561

Extrema



Sonus Faber's inert Poly Stratum cabinet system — a patented sandwich construction with solid walnut wood and black satin lacquer finish

dynamics. Stereo performance and detail rendition are exceptional. Sonus Faber has now blended the speed and delicacy of the Minima with the power of the Electa Amator in a new loudspeaker called the **Minima Amator**. Exclusive low distortion, high power handling drivers are used in a 1.5-inch thick hardwood cabinet comprising 20 pieces. The gently sloped crossover uses the highest grade components and offer parallel or bi-wiring through gold-plated binding posts. The result is a loudspeaker capable of lifelike stereo imaging and a sense of unsurpassed grandness delivered without effort. The £898 **Minuetto** is a most exciting and affordable addition to the Sonus Faber range—rightly described as a mini-Electa. Its handmade 16 layer cabinet with solid walnut gives astonishingly neutral sound quality and outstanding beauty. The leather covered baffle minimises diffraction effects for superb stereo imagery. Contact **Absolute Sounds** to find out where you can hear these exceptional loudspeakers on demonstration.

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Extrema is the most sophisticated miniature dynamic loudspeaker made. Described as 'one of a handful of loudspeakers which qualify as legends'. **Hi-Fi News & Record Review** warned: 'this'll take your breath away' (Ken Kessler, October 1991).

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Minuetto

Electrofluidics Sonolith 2.2xi

Never mind political correctness — Jason Kennedy corrects his phase with the Sonolith.

Some time ago, erstwhile editor Andy Benham wrote about a heavyweight metal-coned loudspeaker called the *Sonolith 1*. He liked it very much, not least for its prodigious low frequency capabilities. At the time, I thought it a bit like a Townshend *Glastonbury*, and wondered if I'd ever get around to hearing it. About three years later, Electrofluidics brought round the next model in the range: the £3,250 *Sonolith 2.2xi*.

The *Sonolith* loudspeakers are unusual beasts. They're made out of a mineral polymer composite and built up from pre-fabricated blocks, each one butted up to the next with a toughened neoprene gasket. It's possible, therefore, to create very tall multi driver designs, but make sure your floors are up to it before you order a pair. The infinite baffle 2.2xi weighs 66kg, a committed two man lift and something of an obelisk for your living room. They are also quite big, measuring 95cm high by 42.5cm deep and 38cm wide, and have an even wider footprint by virtue of the built in plinth. The latter conceals bi-wire terminals, so hooking them up is tricky, but it makes for a very clean, ahem, rear end.

The driver complement is made up of Jordan metal cones, two 53mm tweeters and two 125mm bass units, which the designer, Patrick Hanscombe, thinks very highly of. It would seem that with the advent of CD, Ted Jordan's designs are finally beginning to prove their mettle. A linear phase loudspeaker is not a lot of use without a linear phase source.

A lot of research and thought has gone into the *Sonolith 2.2xi*. The cabinet is very heavy and inert at audio frequencies, and walls are tapered to create an irregularly-shaped internal space which blunts standing waves. Externally, it benefits from a complete dearth of sharp edges to minimise diffraction, and the high frequency cones are bedded in neoprene, which reduces HF reflections. The cones are covered by perforated metal that offers minimal sonic obstruction and maximum protection, and the top plate even has a lip so your CDs don't fall off.

Electrofluidics has produced a very

low resistance cable (*Monolith 20/20*, £25/m) to maximise the potential of the design. However, it takes more than just the right cable to get the best out of the 2.2xi. You need at least 100 watts of quality power, and preferably as much as 250W according to the literature. This is not a particularly efficient design — its sensitivity is quoted at 86dB/W, and impedance is given as four Ohms nominal and just over three and a half Ohms minimum.

The pair of Michell *Alectos I* use push out 200 plus watts into four ohms. However, I suspect another pair of *Alectos* wouldn't have gone amiss. It would be interesting to know whether the addition of two more *Alectos* would have produced the sort of dynamics that more efficient speakers reveal.

I listened to the *Sonoliths* with the aforementioned poweramps and their partnering *Argo/Iso HR* preamp. Vinyl replay was courtesy of a Voyd/Wilson-Benesch *Act One/vdH Grasshopper* combo, and CDs with the aid of a *Clock 2'd JVC* transport and *Trichord Pulsar* DAC. Cabling started off as the usual Audio Note silver, but was replaced by *Monolith 20/20* and the new *Kronos Konnekt* interconnect.

It's hard to pinpoint the most striking thing about the sound produced by the *Sonoliths*: is it the solidity and dynamics of the bass, the three dimensionality and precision of the image, or the plain lack of distortion? Probably the latter, because it's such a rarity to

Metal magic from the *Sonolith 2.2xi*. Was Jason impressed? Is the Pope a Catholic?



find a loudspeaker that has so little overt character.

With the majority of loudspeakers, you can hear how the cabinet colours the sound. Sometimes nicely, sometimes discreetly, but virtually all cabinets add coloration, and it's only when you hear one that doesn't that you fully realise its significance. This is most evident at low frequencies, where wooden boxes get difficult to control, muddying and diluting bass dynamics.

Only big, efficient loudspeakers give you real bass dynamics, but a 50 litre cabinet like the 2.2xis can take you half way there, as the box doesn't intrude.

Instead, you get genuine solidity, real weight and power at low frequencies, with the sort of control most speakers only manage in the upper registers. This confers bass lines with power, sofas that shake and a foundation on which to build precise three dimensional imagery.

I've enjoyed music all my life, but rarely have I heard it reproduced so tangibly as with these speakers. Other speakers have approached this performance from the midrange up but the *Sonoliths* added the real third dimension: stereo bass. This fills the room with ambience and places the instruments precisely in the soundstage.

Inevitably, all this resolution has a dramatic effect on software. Suddenly, badly worn records become hard work, and the quality of recording, mastering and pressing all reveal themselves. Usually for the better I'm glad to say, but the compression and bandwidth limiting on a recording can become all too obvious.

The only area where the *Sonoliths* were found lacking was in dynamics; stop-start explosiveness was not to be found. What you get instead is high SPLs without accompanying distortion. You don't get the loudness effect popular in some circles, but you will find that you can hear more and play at higher levels without discomfort.

The Electrofluidics *Sonolith 2.2xi* is an exemplary loudspeaker. It has a wide and controlled bandwidth, extraordinary imaging abilities and is probably the cleanest-sounding loudspeaker I've lived with. But it doesn't suffer less than first class ancillaries; high resolution has its price. If you've got what it needs, you'd be crazy not to hear this excellent design.

Electrofluidics, 27 Fournier Street, London, E1 6QE. ☎ 0171-247 0813

conrad-johnson PV10A

Eric Braithwaite falls for the silken charms of a classic Yank preamp with a lower-case name.

The fact that conrad-johnson's PV10A pre-amplifier has tubes behind the old-gold fascia is almost irrelevant. It's a bonus that gives a *frisson* to this otherwise simple affair, with nothing more striking than a tape monitor button and three milled knobs for volume, balance and selecting the five sources. There is nothing to show this is one of the unsung heroes of hi-fi. Perhaps c-j should engrave the milled knobs with the hi-fi equivalent of *nemo me impune lacessit* — "no-one can slag me off with impunity".

If a *frisson* is lacking anywhere, then it's only for fans of over-produced and

over-blown rock music. This is too revealing and lucid a pre-amplifier to shove a compressed mid-range up front, or turn bass boom into something like the real thing without the aid of Cerwin-Vegas or a nasty bout of EQ fiddling. Bass EQ'ing does not suit the PV10A at all, the wet-plaster sogginess becoming all too evident.

What sets the hairs in the ears tingling are sheer, quick-step rock rhythms and the PV10A's pinpoint prismatic presentation. Whether it is the two separate and distinct voices of The Proclaimers, or a panoply of synthesised strings, drum machines and a shop-full of guitars, a rock mix pops out of the speakers with such panache that listeners often hanker after the mixing desk to the tune down the worst excesses of studio signal processing.

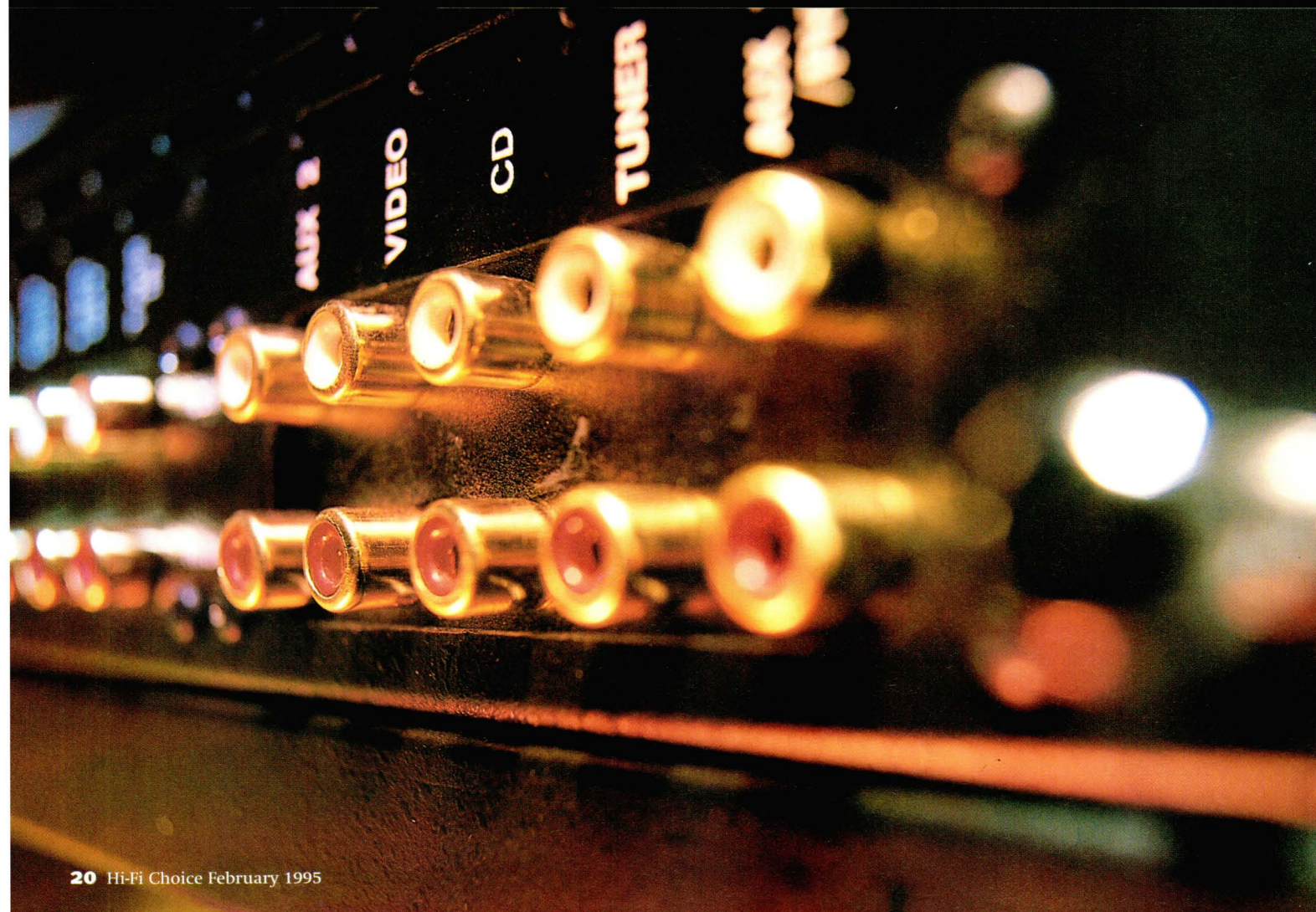
The PV10A has the ability to stop, start and turn around on a dime instantaneously. It reproduces the fullest

swell of the dynamic range of either a single instrument or a full orchestra. Brass entries in Ravel's *Mère L'Oye* were near-perfect, with trumpets, trombones, even tuba blazoning forth, distinct and separate.

Even in complex scores, where a bassoon or contra-bassoon line normally disappears into the general *mêlée* of orchestral colour, the tonality and dynamics were exact. The speed of response was startling in its immediacy, not just in the all-important suddenness and impact required for any orchestral recording, but in other seismic events like the thunderclaps in the McKerras/SNO Telarc recording of *Die Zauberflöte*. These signal the entry of the Queen of the Night, and were as shocking as the real thing.

While the concert-like burgeoning of brass — or a flute, floating from the back rows of the orchestra — were effectively visible, individual images were

Plug in and play — the c-j build quality is even apparent from the rear panel.



VIDEO

BALANCE

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rock-solid. The soloists in the Mozart opera moved ultra-smoothly around the sound-picture in distinguishably measurable paces behind, left and right of their microphones. This is the sort of real hi-fi reproduction that presents a holographic three-dimensional whole. It is the perspective from the producer's chair in the studio, or the plushiest seats in the stalls, a few yards behind the conductor's podium, which only the best-behaved guest ever has.

One of my better-behaved guests noticed that the PV10A is a pure sprite. His dawning realisation of conrad-johnson's musicianship was provoked by IMusic's recording of a Vivaldi concerto for two mandolins. Dynamically this is extremely tricky: each mandolin is subtly different in tone.

Not only that, but this is one of those rare recordings where a harpsichord continuo tinkles along within the band, un-emphasised by close-miking. Through the PV10A, the continuo was exactly what it should be: a link between all other parts of the score. In addition to its realistic balance within the band, the ultra-finely honed resolution makes it clear that harpsichord strings are plucked with quills, not struck with hammers. In American terminology, this is the 'microdynamics'

of electronic reproduction and one of Lew Johnson's goals.

All this was very successfully achieved, by-the-by, through the on-board phono stage, though the judgement holds equally well for the line stages. Its rounder bass quality is marginally less effective than on CD, but the sense of bass strings being bowed or plucked suffers no diminution, no more than a mildly sweeter string tone is any less effective. Such is the lucidity and detail no-one would have any qualms about spending £300 on this if it were an outboard device. (With phono stage, the PV10A costs £1,250; line-level only, it is an absolute bargain at £999.) Only a very slightly brighter, sharper-edged woodwind tone betrayed the switch to a Michell Iso.

The phono stage is pitched somewhere between moving-magnet and moving-coil cartridge sensitivity. It's unsuited to low-output moving coil cartridges, preferring the output of a Koetsu or one of the latest Ortofon Supreme MCs. For more marginal moving-coils like my Mørch *da Capo*, hiss is just on the better edge of intrusive, though gain is sufficient to avoid winding the volume control too far. The review sample also suffered some microphony, requiring the PV10A to be

Quality drips from those milled front-panel knobs.

High-end does not come much better than the PV10A, a true bargain.

isolated from other hunks of metal.

Those tubes, maybe, are not so irrelevant after all. The configuration is not unusual, with an ECC83 double triode for each channel of the phono stage, and ECC82s for the line stage. However, the implementation is less regular, with an ECC81 cathode follower resulting in a local-feedback design, but effectively zero global feedback. By its results, which rebut all the 'cosy, warm and cuddly' reviews associated with many valve designs, the conrad-johnson PV10A preamp must be near ideal.

Audiofreaks, 15 Link Way, Ham,
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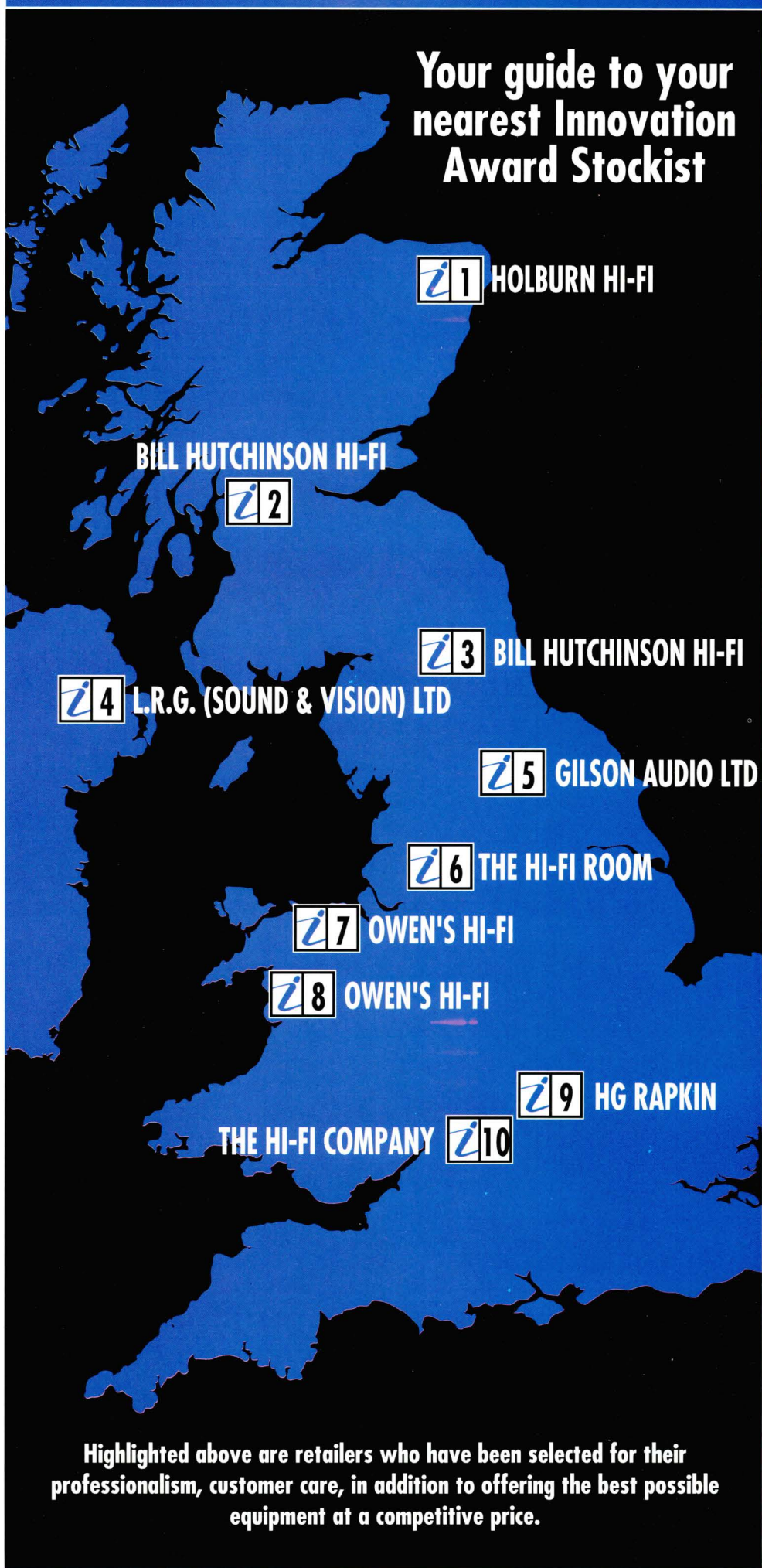
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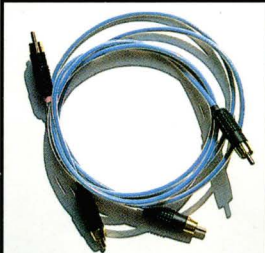
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Too cold to cook

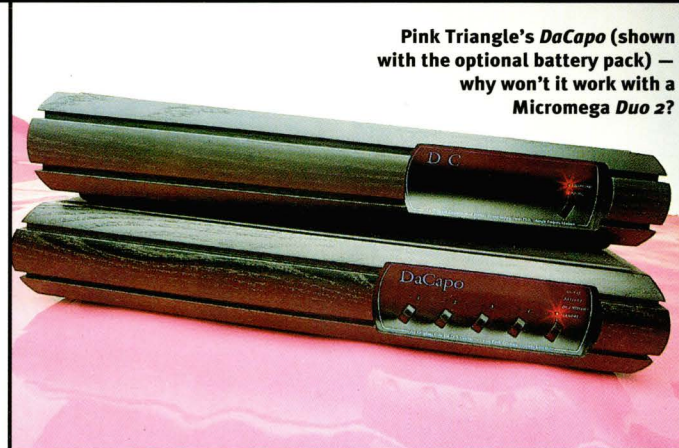
Q My system sounds tonally cold, especially with CD. I was thinking of upgrading my Marantz CD-52IISE with an outboard DAC, but I wonder whether I should buy a new CD player instead. I'm also thinking of getting some DNM speaker cable to go with my DNM interconnects, though as I need 8m runs perhaps this isn't a good idea! The rest of my system consists of a Linn LP-12 turntable, Pioneer A-400 amplifier, and Tannoy 609 speakers. Would it be worthwhile getting the Marantz modified with Trichord's clock 2?

Mr A Buist, Fife

A CD tends to sound leaner and tonally cooler than LP, and the LP-12 is definitely on the rich/warm

side. Since you complain of tonal coldness on both LP and CD, it might be wise to look at replacing either the amp or speakers (perhaps both) rather than trying to find a CD player which can produce the sound required. The CD-52IISE is not especially 'cold' sounding, and going for Trichord's Clock 2 would not alter its fundamental tonal characteristics — though it would improve clarity and definition. The Pioneer A-400 can be a bit hard and forward-sounding; investigate the A-400X, and listen to the Aura VA-100/2 Evolution which is warm and refined. DNM solid core interconnects and speaker cables are excellent, but tend towards tonal leanness — sample Chord's superb Flatline speaker cable. Arcam Delta 2 speakers give a very rich warm balance that may be just what you're after.

Pioneer's A-400X should prove warmer-sounding than the A-400.



Pink Triangle's DaCapo (shown with the optional battery pack) — why won't it work with a Micromega Duo 2?

Nothing but blame

Q Please come to my rescue! I have a Micromega Duo 2 CD transport and Pink Triangle DaCapo DAC, connected via RCA phono coaxial cable and BNC adaptor. I've had this combination for about three months now, and there's been a problem that causes the signal-lock LED on the DAC to extinguish with a temporary loss of sound. This fault is very intermittent; it may happen again a few minutes later, or not for an hour. It also occurs even when no disc is playing. Having contacted both manufacturers, each seems to blame the other's product — what can I do?

Mr R Ayling, London.

A Your problem might be caused by a faulty cable or connection between DAC and transport; it certainly sounds as if electrical contact between the two is being interrupted. Try another phono-to-phono cable (for test purposes almost anything will do) and, if possible, have your BNC/Phono adaptor checked for intermittent contact. The other possibility is a 'dry' solder joint at the point where the connecting socket contacts the main circuit board. It's hard to say whether transport or DAC is at fault, so try to borrow a CD player with coaxial digital output

for a few days and see what happens. If the fault persists it's the DAC or cable, if it goes away it's the transport.

Solid to the core

Q I have a Marantz CD-72 CD player, NAD 3100 amplifier, and Mission 751 speakers on sand-filled stands connected using Linn K-400 speaker cable. I've had my CD player Trichord modified with Clock 2 after reading your enthusiastic recommendations, and noticed a big improvement in bass and midrange clarity. But the treble seems to lack the attack it had before. I know that Mission recommends solid core speaker cables, but I'm happier with multi-strand. I'm willing to spend up to £150 on speaker cables, but will a solid core give me what I want?

Mr G Farrell, Dublin.

A Sometimes, when you clean-up the treble and make it sound more precisely focused, it can be disappointing. Instead of a welter of sounds, you can hear, perhaps for the first time, that only a few instruments are playing at a given time — whereas before it sounded like twenty of thirty. Solid core cables tend to sound more focused than stranded types, but less lively. Chord's Flatline is a very good

Mr Tumpa should find that the Trichord Clock 2 mod gives a cleaner and firmer sound

speaker cable that offers the clarity and precision of a good solid-core with the weight and liveliness of stranded types. If it doesn't sound impressive enough, investigate the Audioquest range — F-14 would be a good starting point.

Take it to the bridge

C About a year ago I updated my system to a Rotel 965BX CD player, Musical Fidelity Rainbow preamp and Typhoon power amp, plus a pair of Infinity Reference 20 speakers. The system is just what I wanted, but I'm finding the Reference 20 very coloured. I want to add a second Typhoon (to be used in bridged mode) soon, and wonder what speakers I should consider given a budget of about £600?

Mr D Kitching, Ross-shire

A Bridging your power amps should give a worthwhile improvement in detail, clarity and presence — as well as more power. The Castle Chester would be an obvious starting point, alongside the Epos ES-14 and Heybrook Quartet. However, it might be worth sticking with a single Typhoon and spending more on speakers. If you decide to do this, try listening to Mission 753s and Impulse H-7s.

The Castle Chester should prove a good match for the MF Rainbow and Typhoon

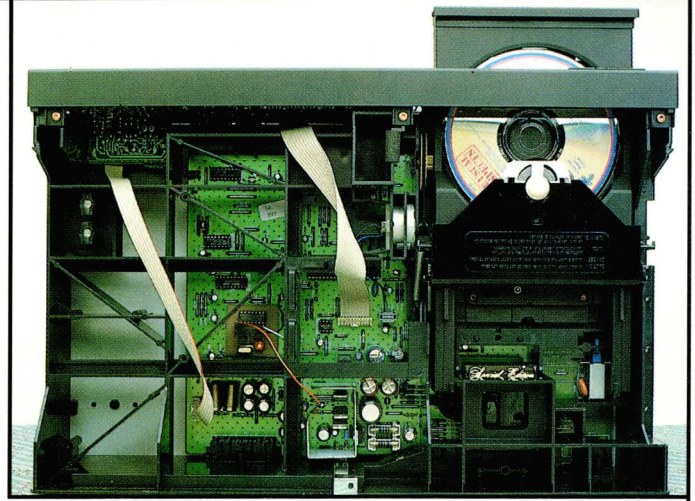
Taking a stand

C Why the infrequency of queries regarding equipment-support stands? In issue 110 Andy Benham described the Townshend Seismic Sink as 'a resounding success', although in the supplement with issue 123 the drawbacks are given as 'effects unpredictable with better players'. The Mana table has been much praised, especially with Linn/Naim set-ups. As I have a Linn Axis turntable and Index 2 speakers, plus Naim 72/140 amp and CDI CD player, do you think I'd be better off buying a Mana table or adding some Seismic Sinks?

Mr R Helps, Somerset

A Tables and support platforms are always unpredictable; sometimes very dramatic differences can be heard, yet in other circumstances improvements are marginal. The Mana table is very different in concept to the Seismic Sink; the former gives exceptionally rigid coupling to the floor, the latter provides some decoupling.

Rigid coupling via spikes and the use of hard materials (steel frames, glass shelves) tends to give a sharper and more forward sound, with increased dynamic impact and tight firm bass.



Decoupling platforms (especially when used unspiked like the Townshend Seismic Sink) will usually sound tonally smooth but clearer, with increased clarity and ease especially during loud complex passages. Which works best is down to personal taste, the equipment being used, and external factors like floor hardness.

Clock it up

C My system consists of a Pioneer A-400 amp, Denon TU-260 tuner, Akai GX-75/2 cassette deck, Arcam Alpha CD player, and Canadian Mirage 750 loudspeakers with Cable Talk 3 cables. I'm satisfied with the sound, but would like to improve my CD player. Having read about the Trichord Clock 2 mod in issue 135 and Audio Alchemy's Dac-in-the-box, I want to go for one or the other. Which would be better in my system?

Mr M Tumpa, Zagreb.

A Since the Clock 2 is such a fundamental change, it's likely that this upgrade would make more difference than adding a Dac-in-the-box. Your Arcam should sound cleaner and firmer, with improved dynamics and coherence. You'll also get better results from an outboard if you decide to buy one in the future.

V for vinyl

C Thanks for issue 136; it's nice to know there are still some vinyl junkies out there! Reading the above issue was enlightening, but also distressing — if I were to indulge myself to such levels my bank manager would have a coronary. I'm looking to buy a turntable, amplifier, and

speakers for around £1,000 (flexible, but not too flexible...)

Mr S Newman, Gwent

A The Rega Planar 3 offers good value and excellent performance, and is still hard to beat at the price. Cartridge choice is wide, but Roksan's Corus Black sounds clean and tracks well. Not all amplifiers offer a phono stage these days, but NAD's 306 does and special attention has been paid to low noise and good sound quality. This amp can also accept low-output moving coil pickups should you wish to upgrade at some future date. If you chose these items, you'd have a little under £200 left for the speakers. Listen to Celestion 3JIs, Infinity Reference 10s, JPW P1 Vinyl, Mordaunt-Short MS-20s, and Mission 760SEs.

Steaming ahead

C My system consists of a Kenwood KA-1030 amp, Philips bitstream CD player, and Wharfedale CRS-3 speakers. I need to upgrade my amp and have a budget of £300 maximum. I'm happy with my speakers, but want a better amp to reduce the edgy treble on CD without running out of steam at high levels. I had thought of Pioneer's A-400 but would consider anything you might suggest.

Mr C Maguire, Dublin

A The A-400 will give you a more assertive sound than the Kenwood and probably help clean up the treble too. But listen also to the A-400X, which is less forward and exciting but smoother and more refined. Arcam's Alpha 6 is nice and lively, offering remote volume control and tone controls, and NAD's 304 is excellent value.

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Ten years after

Ⓒ My Musical Fidelity A-100 is now nearly ten years old and cost £400 when I bought it. I want to upgrade it with a new amp that offers comparable sound but a faster more powerful bass. I've heard the Technics SU-A900/2, which sounds similar to me but with improved bass. However, my wife is suspicious of the Technics on price, reasoning that because we paid £400 originally we should be looking at £600 to £800 for something truly better. What do you think?

Mr D Reynolds, Glasgow

Ⓐ The Technics SU-A900/2 is a very good amplifier, and remarkable value when you consider it offers comprehensive facilities and full remote-control. You should find it tighter and leaner than your old A-100, perhaps less sweet, but definitely sharper and more focused with stronger more powerful bass. Its low cost reflects the way in which hi-fi has dropped in price over the past decade or so, as companies fight to maintain their share of a dwindling market. If you can spend more, check the Magnum Class A, and Musical Fidelity's Preamp/Typhoon pre/power combination.



Getting lively

Ⓒ After reading the October issue of *Choice*, I replaced my ageing Trio cassette deck with a Aiwa AD-F450 and am very pleased with the improvement. I have a system based around a Trio (Kenwood) KR-2010L receiver and JVC SK-33 speakers, and I notice that other systems seem to sound sharper and livelier, with deeper, punchier bass. I tried some AR-8 speakers, but these didn't improve matters, and my receiver was unable to drive a set of JPW AP2s. How can I liven up my sound?

C J Hubbard, Devon

Ⓐ A new pair of speakers (and perhaps a better receiver) should give you what you want, though it should be said that some rooms create a smooth, mellow sound almost irrespective of the equipment used. NAD's 705 receiver would be a good choice, having sufficient power for most speakers.

Listen to speakers like the Allison AL100, Legend 2, and Rega Kyte, all of which should sound livelier and more detailed than your JVCs.

Up on stage

Ⓒ My system consists of an Arcam Alpha 5 CD player, Musical Fidelity A-100 amplifier, and Spondor SP-100 speakers with Audioquest Diamond interconnects and Linn K-600 speaker cable. I want to upgrade, and have about £3,000 to spend. I intend to keep the speakers, but would like to replace the amplifier and CD player. A smooth and spacious 3D soundstage is my aim.

Mr C Schuller, Luxembourg

Ⓐ Audiolab's 8000C/8000P pre/power combination would be a smooth, refined yet articulate partner for the Spondors, and you could match it with the same company's 8000CDM/8000DAC CD transport and

DAC — though the latter is perhaps a shade unexciting for some tastes. Arcam's Delta 250/BB50 is a good and less-expensive alternative.

New CD player needed

Ⓒ I have a Marantz CD-52/II SE CD player, CAL Sigma/2 DAC, Exposure XX amplifier, and Ruark Templar speakers with Audioquest cables. Having just sold the Marantz, I'm looking for an integrated CD player with a better transport and superior digital output. My budget will only stretch to about £450; what do you suggest?

Name and address supplied

Ⓐ Arcam's Alpha 5 plus, recently upgraded by improving the accuracy of the digital sampling by reducing jitter, is well worth considering. The Philips CDM-9 transport used in the Alpha 5 plus is the same as Arcam use in their more expensive Delta series machines, incidentally.



**Musical Fidelity Preamp and Typhoon
— worthwhile replacements
for an ageing A100**

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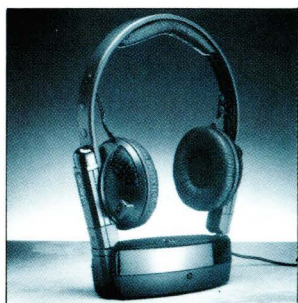


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WRITE ON!

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A Snide aside

Allow me to complement Paul Messenger on his considered, unemotional and even restrained response to the unnecessary and indeed snide criticism levelled by *What Hi-Fi?* (issue 135).

I have subscribed to *Hi-Fi Choice* and *What Hi-Fi?* for the past four years, and enjoy them both immensely. However, I have been disappointed in recent months by the undisguised discourtesy shown by the latter towards *Choice* — it's so unnecessary.

Each magazine caters for specific needs within the hi-fi market, and each plays a very important rôle. There is no room for unbecoming tabloid-esque innuendo. Thank you for a thoroughly reasoned and helpful riposte. Let's hope that *What Hi-Fi?* extends you the courtesy of a responsible and mature reply.

JA Creeke

Pietermaritzburg, South Africa.

Praise indeed!

I would like to express my thanks to the happy band of members who form the West of Scotland Hi-Fi Club, for their time and patience. The club approached us recently to book a night to come into the store to use our demo room. Once we agreed upon a mutually acceptable date and time, all that remained was for them to come in and listen.

With demonstration facilities being relatively new to our stores, this was very much a pilot scheme for us. On the night, we had two different systems set up, representing two different categories — the 'budget' and the 'reference' — and both systems proved successful.

The club members provided us with some interesting thoughts and opinions and I

hope they enjoyed their visit.

At the same time I would like to extend a repeat invitation to the West of Scotland Hi-Fi Club (or any similar clubs that may be lurking unknown out there) sometime in the near future.

Stephen Scott, on behalf of all the staff at Richer Sounds Glasgow

Catch 63

I was intrigued to read the blurb (HFC 135) trumpeting the qualifications of the EISA Panel to make awards for European Hi-Fi Products of the year. I moved quickly to read the eulogy given the European CD Player of the Year — the Marantz CD-63.

Your April sessions test does say "...it 'boogies'", but also summed up: "Not as listenable as some rivals". Jason Kennedy only bestowed 3/5 for sound quality and 3/5 value.

Returning to the awards, the same CD player boasts "...Superb specifications aside, it's great sound quality and excellent value for money which make the Marantz CD-63 an obvious award-winner." Since there are no second places awarded, and no (published) debate, was the award as obvious as you say, or does it say a lot more about the competition than the CD-63?

What happened to the CD-63 between April and October to prompt its elevation to the peerage? As a candidate for an integrated CD player upgrade myself, I would be most interested to read your comments on this matter.

Chris Vian, Wedmore, Somerset.

It's true I wasn't overawed by the CD-63, but as in all Sessions pieces I expressed a personal opinion, shared by neither the EISA awards panel nor Paul Miller's blind-listening panel, which Recommended the CD-63 in HFC 137. In retrospect my comments may have been too harsh — compared to its peers, the '63 is a good machine for the price. Dep Ed

Letter of the month

Each month, we're giving away a trend-setting Hi-Fi Choice sweatshirt to the writer of the most interesting letter we receive.

Direct your letters to: The Editor, Hi-Fi Choice, 19 Bolsover Street, London W1P 7HJ, send a fax on 0171-323 3547, or e-mail to 'Hi-Fi Choice' at 100433.1130@compuserve.com



A CD player conundrum

I thought of upgrading my CD player, so I bought your November issue, which reviews eight of them. Off I went to my local hi-fi dealer, armed with my own CD player (an eight-year-old Toshiba portable) and two CDs: Prokofiev's *Alexander Nevsky* and chamber music by Buxtehude and Pachelbel. I listened to four of the players reviewed — Arcam *Alpha One*, Denon *DCD-825*, Marantz *CD-63* and Rotel *RCD-940BX*, plus the Rotel *RCD-965BX*.

I must say I think your listening panel must be deaf as well as blind. Do they ever look up from their oscilloscopes and listen to the music? I found the Marantz bright and untidy; the Denon, though basically OK, was too laid back; but the Rotel and the Arcam — both of which you panned — were totally involving. Indeed, Buxtehude's *G major Sonata*, as heard through the Arcam, brought tears to my eyes.

I don't care if harmonics zig-zag across your graphs, because

I'm a musician not an electronics buff. The shop didn't have the Sony *CDP-715E* that you raved about, but on this form I'm not sure I'll even bother to listen to it!

Colette Tanns
Leamington Spa

As a regular member of Paul Miller's listening panel, I confess that I don't know one end of an oscilloscope from the other! The blind panel doesn't even know what machines they're listening to, let alone specifications or measurements, until the end of the test. We even match listening levels precisely, to eliminate any prejudice.

However, in order to standardise our findings, we conduct all reviews in the context of a reference system, which might produce very different results from a system better suited to the characteristics of the Arcam and Rotel. This simply serves to underline the importance of demonstrations. In absolute terms, the Sony CDP-715E stands above the others, but it won't necessarily be the best bet in your system.

Reviews Ed



Sony CDP-715E: a Solid Gold Best Buy, but ensure it suits your system...

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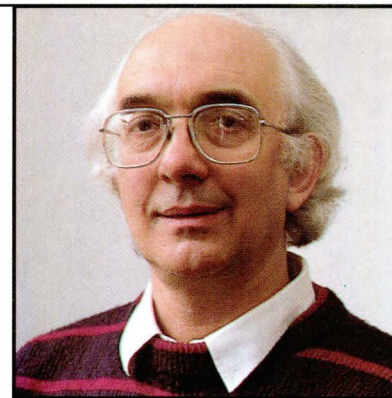
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21st Century Fox

Imagine being able to preview a hi-fi system, exactly as it would sound in your room, using just a black box with some bits sticking out. Barry thinks Bose may have the answer...



If you're a football fan, spare an ear for the sound system installed at White Hart Lane next time you're there. No, don't worry, it wasn't installed by Amstrad. It uses Bose speakers and was designed by a new computer-modelling system from the same American company.

If you strip out the marketing hype, the *Auditioner* package combines Bose's existing *Modeler* computer software with hundred-year-old binaural (dummy-head) technology. It lets a PA-system designer hear how loudspeakers will sound in a room or hall before they're installed, or even before the site is built. The software runs on an Apple Mac and works only for Bose speakers. It's not for sale, being offered instead as a 'free' consultancy within an installation service. There will be 36 trained operators round the world.

This suggests that there is now a marketing opportunity for third-party computer software, running on Mac or PC with stereo headphones, which lets hi-fi dealers or installers give customers an idea of how different speakers will sound in their own homes. It would also let architects design sound reinforcement systems without necessarily using Bose speakers.

An architect uses *Auditioner* to build a 'virtual room' by entering its bare dimensions, then adding details of the

wall, floor and ceiling material, along with the seating and furnishings. The computer screen displays a three-dimensional picture of the room, rather like a video game image. *Auditioner* then uses a mix of acoustic theory, past measurements and accumulated experience of speech intelligibility to model the sound field which will be produced by loudspeakers at architect-specified points in the room.

This effect is then demonstrated by feeding speech or music from a CD through a digital signal processor (DSP) card in the PC. The DSP acts as a filter and delay line which creates the acoustic effect defined by the software.

The processed signal is fed to a pair of small speakers, fixed either side of a chin rest that guides the listener's head into a carefully-defined position. The audio effect is like listening to binaural, dummy-head stereo on headphones. As the notional position of the loudspeakers in the virtual room is changed, so the binaural system changes the music or speech to match.

Without doubt, *Auditioner* drastically alters the binaural sound field, depending on the room size that has been modelled into the Mac, and the position of the imaginary speakers. However, the accuracy of *Auditioner*'s multi-speaker-sound-field predictions will only become evident when the sys-

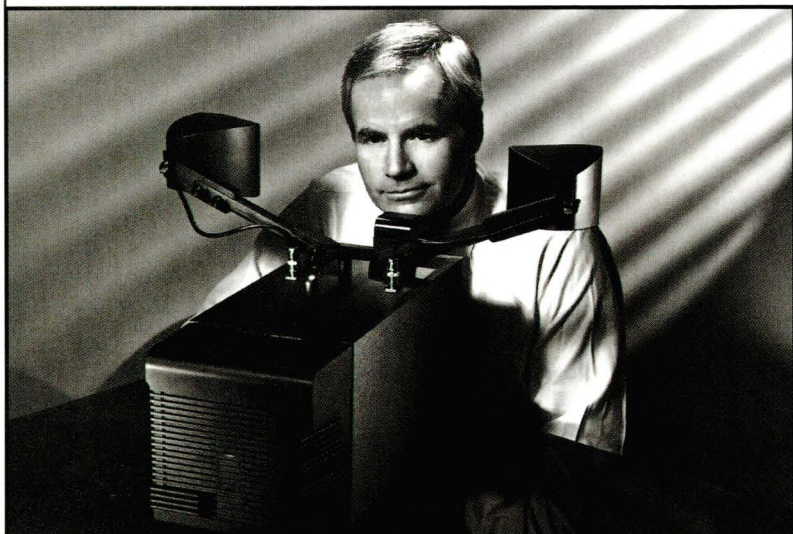
tem has been used, halls have been built and owners have received either pleasant or unpleasant surprises.

The White Hart Lane system was installed while *Auditioner* was still being developed and tested for a year. So it's not really a true pointer to how the system will work in a situation where the architect has designed a sound-reinforcement system from ground zero, relying on the computer.

Bose sound reinforcement systems are, in general, streets ahead of the antique rubbish they replace. So how much any improvement is the result of spending serious money on a new system with heavy power-handling capacity, and how much is thanks to *Auditioner*, will take time to establish.

It must also be said that Bose people are past masters at the art of demonstration, much like Ivor Tiefenbrun of Linn and Julian Vereker of Naim in their early barnstorming days. At a recent demonstration of Bose's *Wave* radio, members of the press were encouraged to note how "the orchestra sounds right here in the room" and how "you can pick out every instrument of the orchestra". The unit packs a lot of punch for a very small box, but has an FM aerial socket of the wrong gender for the UK and, most important of all, omits Long Wave — despite the pleadings of the UK press while visiting the company's US HQ a year or so ago. Do similar anomalies lurk inside the *Auditioner* software?

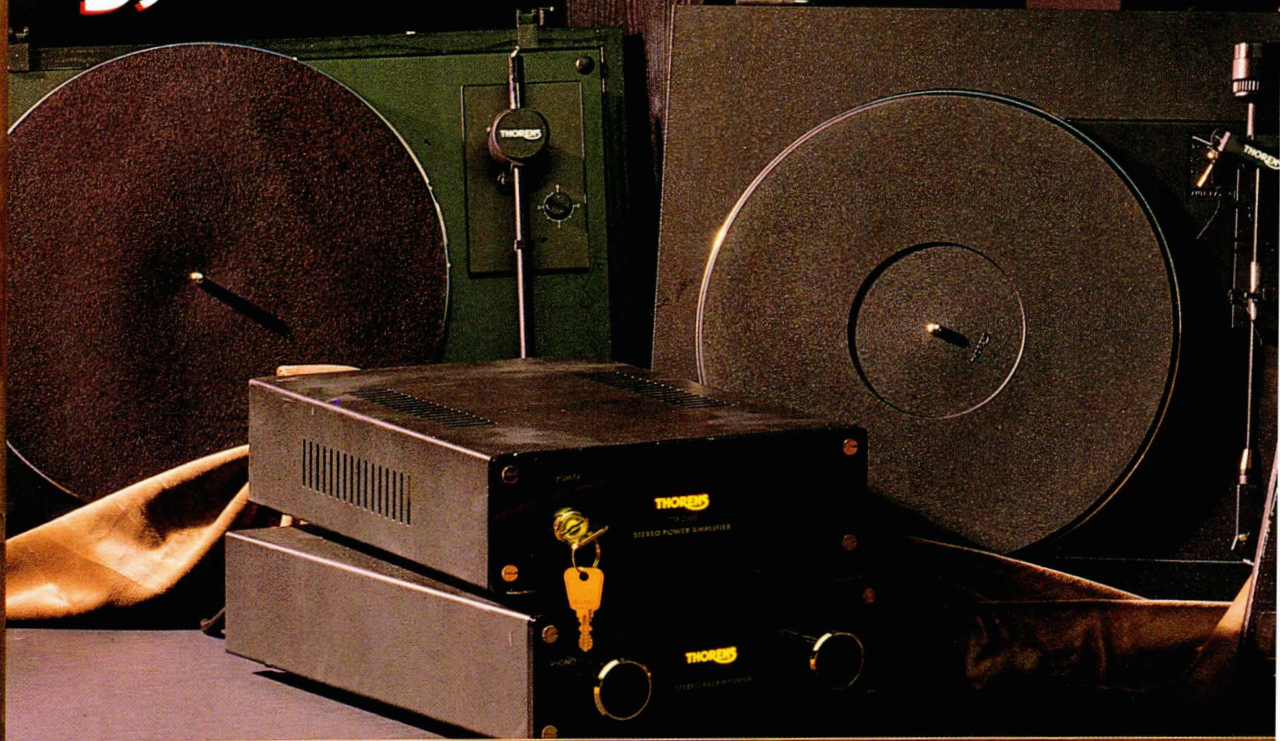
Paul Messenger (who, in turn, devotes his column on page 160 to a deeper investigation of the *Wave* radio) has devised a glorious acid test. He has asked Bose to use *Auditioner* to build a computer model of his own listening room, put a stereo pair of imaginary loudspeakers in the virtual room and predict the overall sound. Then Bose would put two real loudspeakers in the real room, play the same music and speech, and see how they sound in real life. To avoid any prejudice a panel of listeners would compare the virtual and real sounds. Will Bose rise to this very reasonable challenge?



No, not the latest in designer home tanning equipment — just Bose's new 'virtual sound' *Auditioner* system...



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This is joined by the £500 TTP 2000 preamplifier and TTA 2000 power amplifier, worth £550, both from the new Thorens Consequence range (as reviewed in Sessions, p.10). This elegant and superbly-built amplifier combo has features previously unseen at this price level, including mains phase indicators and a key-operated power amplifier. Vroom!

An extremely minimalist design, the preamp features only a volume control and five-input source selector, while the power amp runs 11 Watts of its 35 Watt output in Class A. Due soon are a similarly-styled CD transport, D/A converter and RDS tuner. A pair of £350 Boston Acoustics VR20 speakers complete the package.

Second prize is a Thorens TD-166 VI/UK turntable, fitted with an audio-technica AT95E cartridge. This £270 deck once again features a three-point suspension system and 'audiophile' felt mat, plus the Rega RB 250 arm in place of the Thorens model.

Third and fourth prizes are £200 Thorens TD-280 IV/UK turntables, fitted with a Thorens TP35 arm and AT95E cartridge.

Fifth and sixth-prize winners, meanwhile, will each receive the Thorens TD-180 turntable, fitted with a TP20 tonearm and Stanton 500 cartridge. This superb starter deck features electronic belt-drive and auto return — it'll even play 78rpm discs! Like the TD-280, it works almost straight out of the box.

THE QUESTIONS

1. How many decades has Thorens been in business?

- a) Less than three
- b) Four to six
- c) Seven to nine
- d) Ten or more

2. What is the total power output of the TTA 2000 power amplifier?

- a) 35 Watts
- b) 75 Joules
- c) 11 Watts
- d) 99 milliHenrys

3. Which well-known, rather rich dessert shares its name with Thorens' home region?

- a) Baked Alaska
- b) Mississippi Mud Pie
- c) Black Forest Gateau
- d) Strawberry Cheesecake

4. What's the name of the new Thorens electronics featured in Sessions this month?

- a) Obsession
- b) Consequence
- c) Eternity
- d) Samsara

HOW TO ENTER

To enter the competition, simply answer the four questions on the back of a postcard or sealed-down envelope, and send with your name, address and telephone number to: Thorens/Boston Competition (HFC502A), Hi-Fi Choice, Tower Publishing Services Ltd, Tower House, Sovereign Park, Market Harborough, Leics LE87 4AU. Entries must be received no later than first post on Monday 27 March, 1995.

COMPETITION RULES

The Editor's decision is final, and no correspondence will be entered into. All winners will be notified by post. The competition is not open to employees of Dennis Publishing Ltd, Portfolio Marketing, their suppliers, agents or associates. We regret that the competition is open to UK residents only. No cash alternative will be offered. Submission of entry will be taken as acceptance of the rules. Proof of posting cannot be accepted as proof of receipt. Please notify us if you do not wish to be informed of any special offers or promotions.

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ON TEST

CD Players

The cast list

DENON DCD-615	£180
DUAL CD1001RC	£180
JVC XL-V274	£160
KENWOOD DP-3060	£200
MARANTZ CD-53	£200
NAD 501	£180
PHILIPS CD740	£170
PIONEER PD-S503	£200
SONY CDP-312	£150
TECHNICS SL-PG460A	£160

Ten years ago, the main obstacle in the way of eager consumers who wanted to 'go digital' was the high price of CD hardware. Nowadays it's the exorbitant cost of the software that puts people off.

This is why the cost of decent budget players fell through the floor some five years ago but has remained steady, with only a few exceptions, in the £150-£200 range ever since. Putting this into context, these are fully-equipped players, complete with remote control, direct track access, programming and repeat facilities, yet they cost no more than about 12 full-priced CDs.

So, until hell freezes over and the cost of CD software drops to a fiver a disc – tempting the millions who haven't already got a CD player to splash out on one – it's simply not viable for manufacturers to produce ultra-cheap but deadly serious CD players.

As if to reinforce the point, very few sub-£200 players are, er, 'subsidised' like the loss-making £250 market leaders reviewed back in issue 137. Make no

mistake, the £150-£200 arena is no less competitive but compared with the likes of the Sony *CDP-715E* and Marantz *CD-63*, its combatants are armed with very much more basic weaponry.

That's not to say these players are either inadequate or indistinguishable. Indeed, month after month, our blind listening panel continues to reveal significant and repeatable differences in the performance of CD players from every walk of life. And this is just as true of the ten sub-£200 wonders marshalled into the corral for this month's test.

Sure enough, these players look pretty similar and most offer a comparable range of user-friendly widgets. Yet many sub-£200 players are no less flexible than their £300 cousins, icing the digital cake with intro scan, index and peak search, tape edit, auto cue, A-B repeat and random play modes.

Few budget players have a fader option but many still carry some sort of up/down volume control, enabling them to be connected directly to a power amplifier instead of an intermediate preamp or

all-in-one integrated amp. This cuts down on superfluous boxes and unnecessary circuitry which, in many instances, just gets in the way of the music.

If you use one of these digital volume controls, however, do remember to check that it hasn't defaulted to maximum output before firing-up your second CD!

Equally importantly, the diverse internal technologies of these budget players ensure that they perform with the same rich variations as their more costly counterparts. Some players still use the original style of multi-bit converter's to translate the CD's digital data into recognisable music. This technique relies on converting entire 16-bit 'words' of information at a time, yielding a wide dynamic range at the expense of slightly increased distortion.

Other players rely on one of a new generation of bitstream converters which reduce these unwieldy 16-bit digital words into smaller packets of four or fewer bits. Smaller chunks of data are processed at an appropriately higher speed, avoiding the uneven steps and distortions of multi-bit converters at the expense of extra noise, both in and out of the audio band.

In an effort to gain the best of both technologies, some CD players use part multi-bit and part bitstream (so-called hybrid converters) though these have their own, unique, distortions.

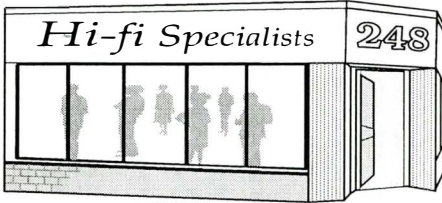
But you need not fret over the relative compatibility of different CD players because, regardless of the technology, they must all still conform to certain agreed standards. Every CD player will handle both the standard 12cm and 5cm silver discs, will offer the same basic track skip, pause and stop facilities, and will require the services of a line input on your amplifier.

Never connect a CD player to an input marked 'phono' or 'disc' on your amp – the result will be dreadful – but use a line-level connection such as aux, tuner, tape or one marked specifically for CD instead. CD compatibility is assured. But good sound quality? Now that's another matter altogether...

Billy Vee

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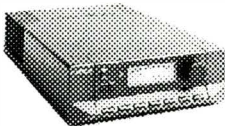
REGA



Rega Products (Full Range Available)

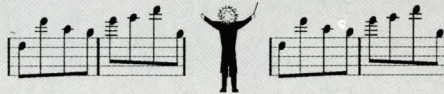
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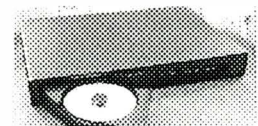
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DENON DCD-615



I was rather looking forward to grappling with Denon's fanciful propaganda yet, sadly, its description of the new *DCD-615* appears to be based on fact rather than fantasy. Could this be the beginning of a trend? I am bound to point out that the '20Bit, 8 times oversampling' flashed across the new rounded fascia alludes to the resolution of NPC's oversampling filter and not the DAC. Other than this, however, the *DCD-615* is sufficiently impressive to stand on its own four hype-free feet.

The guts of the player are culled from Denon's earlier *DCD-595* (issue 128) with both models sharing the same 18-bit digital backbone, the same remote control (with its 12-step volume facility) and the same range of useful on-board widgets.

These include direct track access, 20-track programming, auto-edit, auto-space, repeat and display dimmer facilities. On the debit side, the compact fluorescent display is cramped. Denon has responded to an earlier whinge, however, using a decent crystal-based clock rather than a ceramic resonator in the *DCD-695*.

Not only will this ensure the accuracy of track time information but it has also



permitted the addition of a reliable digital output to service future upgrades.

Sound Quality

No one could fault the composition of this player's music, at least in the technical sense. It certainly differentiated the two hands playing the piano through Lyle Lovett's *Black And Blue* as slickly as the dry pitter-patter of percussion. Nevertheless the musical thread quickly became frayed. "Rather than play from the heart", our

panel suggested "it intellectualises its music, draining a little spontaneity for a more arid and analytical approach".

Prokofiev's *Romeo And Juliet* sounded as if it were being led by several different conductors, leaving the percussion and strings, for example, playing in concert but not necessarily in harmony. Plenty of precise and articulate detail then, but conveyed in a way that just fails to gel.

This is a pity, for Cassandra Wilson's *In My Kitchen* sounded extremely positive, the thunderous bass line underpinning her confident-sounding vocals to great effect. Regular readers will recognise this as a hallmark of past Denon players but in this instance the artistic impression of the player is clearly suffering for its eagerness to please in the technical department.

Conclusion

The subjective parallels between this quiet-sounding and articulate *DCD-615* and the dark subtlety of its forebear, the *DCD-595*, are plain enough for anyone who cares to peruse issue 128. So, once again we have a budget Denon player that eschews the charisma of its bigger brothers, in this case the fab *DCD-825* (issue 137), and opts to feed the brain rather than the soul.

But even if Denon's *DCD-615* tickles the grey matter more effectively than your emotions, it remains a precise and remarkably sophisticated package. And all at a terribly unsophisticated price. Highly Recommended.

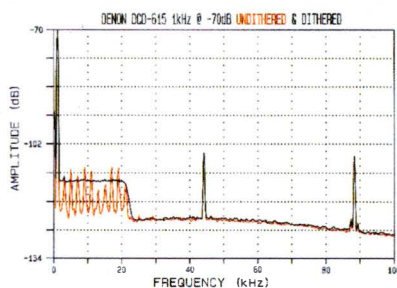
LAB REPORT

Maybe responding to our misgivings in issue 128, Denon has revised its Master Clock circuit with a crystal oscillator, reducing clock error from a lax +1807ppm (*DCD-595*) to a negligible -3ppm. Otherwise the basic complement of NPC's SM5841 8x oversampling filter and 18-bit Burr-Brown PCM61P DACs is unchanged.

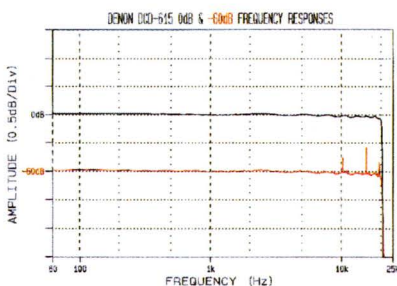
This choice determines the 54dB stopband rejection, the low 0.001-0.02 per cent distortion and very wide 109dB S/N ratio.

The wide S/N ratio and dynamic range is a benefit of conventional multibit DAC technology, advantages that must be ranged against the huge +10dB noise modulation and higher THD (typically 0.03-0.06 per cent @ -30dB) experienced at medium signal levels.

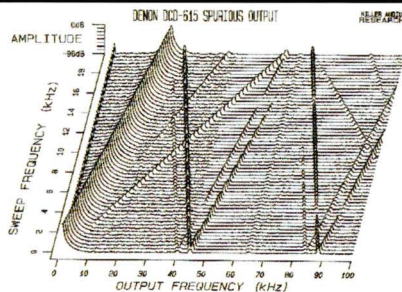
Low-level linearity is a little off that achieved by the *DCD-595*, but otherwise all is very well indeed.



A great result demonstrating a wide dynamic range but more leakage of F_s and $2F_s$ sample tones than *DCD-595*.



A very flat response with the mildest rippling caused by NPC's 8x oversampling filter.



Like the *DCD-595* (issue 128), V-patterns of stopband noise escape the 8x filter while 2nd/3rd harmonics escape the DAC.

VERDICT

- ▲ Exceptionally detailed, great depth and transparency. Digital output.
- ▼ Not flamboyant enough — the accountants choice.

SOUND ★★★★★

VALUE ★★★★★

PRICE £180

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DUAL CD1001RC

This is only the second time we have reviewed a CD player from Dual, a West German company whose reputation is founded, in the UK at least, on the death-defying longevity of its CS505 turntable. Still going strong after some 16 years, this £200 LP player is now joined by no fewer than four sub-£200 CD players.

The CD1001RC is the biggest and boldest of Dual's quartet, its broad shoulders supporting a wide variety of user-convenient widgets. These large and clearly-labelled keys will prove a blessing for fat-thumbed enthusiasts who are irritated by the tiddly buttons which punctuate the average CD player.

Groups of widgets, catering for direct track access, 32-track programming, a 10-second intro search, three repeat modes and random play, will keep feature-fans blissfully happy. Dual has also provided tape edit, index search and display dimmer facilities by way of a bonus on its remote control.

Under the bonnet, however, the Dual is dominated by a highly complex LSI (large-scale integrated circuit) from Yamaha which combines the servo controls required by the



CD transport together with error correction, 8x oversampling, 3rd-order noise-shaping and a bitstream DAC to convert the numbers into music. All this on a single slab of silicon!

Sound Quality

"Shame about the bass player having died like that" remarked one listener in response to the fast, furious but oddly bass-free rampage of Stevie Ray Vaughan who, it was suggested, had now swapped his plectrum

for a wet halibut. Our next selection had the traditionally droll and gravelly tones of Lyle Lovett transformed into the silky-smooth soul of Georgie Fame, his voice sounding larger but lighter than usual while the accompanying piano and percussion were squeezed into the far corners of the room.

Lighter aspects of percussion from Prokofiev's *Romeo And Juliet* sounded very free and refreshing but this still tended to create a somewhat detached acoustic. Sadly, our listeners were drawn once more to criticise the lack of bass weight, now sorely undermining the strength and substance of the performance as a whole.

Naturally, Dual's player is not entirely lacking in warmth, even though the sploidy, one-note bass of Cassandra Wilson's *Come On In My Kitchen* proved LF was often mis-directed. "Rather like queuing for a bus", our panel concluded "it all turns up at once".

Conclusion

This is an unusual machine, not only for deploying little-used digital electronics and analogue op-amps but also because its PCBs are marked-up for the CD-3700. Another player in another country, perhaps?

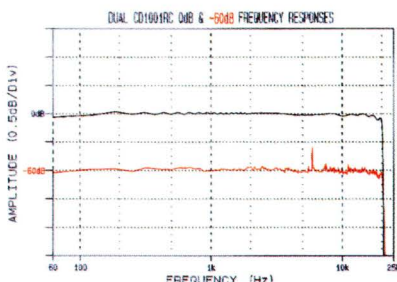
There's no disputing the generous array of features and smart-looking remote, though. These help fire the Dual from the starting blocks even if it snags its bass on the first hurdle and sounds a touch neutered.

LAB REPORT

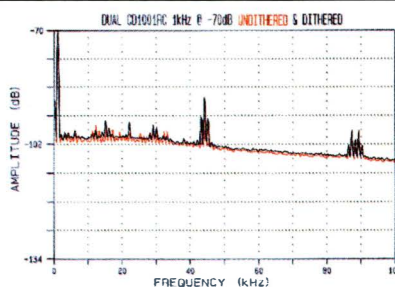
I expressed misgivings over Yamaha's YDC103 'player-on-a-chip' LSI while reviewing its CDX-670 unit back in issue 124. More than a year later, the chip's tell-tale bugs have resurfaced in this Dual player. The +12dB bumps on the 3D plot are particularly characteristic.

It has to be said that Yamaha's implementation produced significantly better results than those from the CD1001RC. For starters, the latter's claimed S/N of 121dB is inflated by digital trickery; in reality the 87dB S/N equates to a sub-standard 14/15-bit performance.

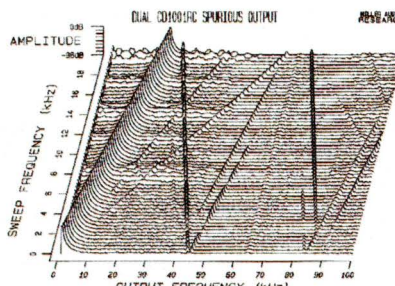
This high level of, presumably, re-quantisation noise also bumps-up the perceived THD+ noise through its midrange (typically 0.04 instead of 0.01 per cent at -30dB). Finally, this squashes the practical dynamic range by a good 10dB compared with Yamaha's CDX-670. Its 1.8V peak output is also rather low.



Poor S/N ratio is reflected in the noisier appearance of the player's low-level frequency response.



Reduced dynamic range with no demonstrable advantage obtained by using dithered signals.



Wells of noise and distortion, caused by a digital overflow, appear near the top of the player's dynamic range.

VERDICT

- ▲ Quick, slick and ideally suited to light classical music.
- ▼ Fundamentally bass light, old-fashioned sound and appearance.

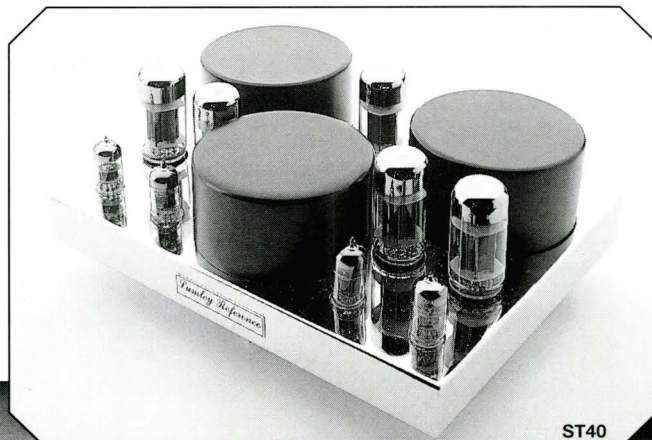
SOUND ★★★★★

VALUE ★★★★★

PRICE £180

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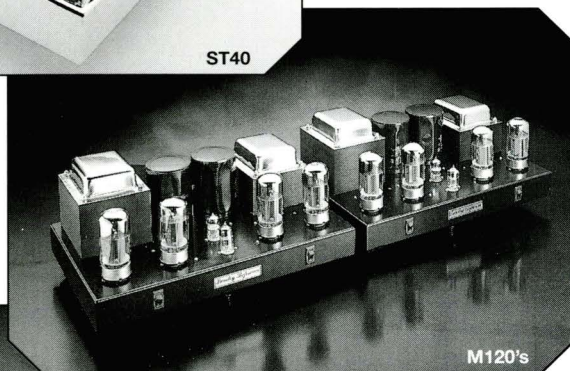
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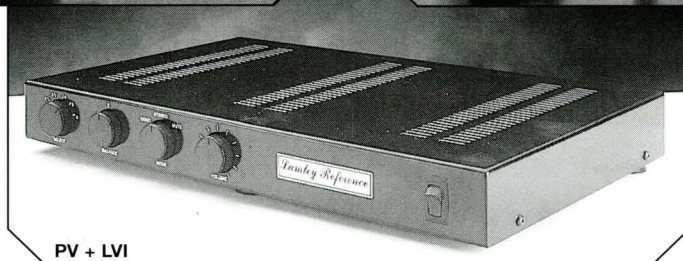
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JVC XL-V274

Having just edited the day's listening notes and completed my lab test of JVC's new budget CD player, I checked back on our earlier reviews of JVC goodies from yesteryear. Imagine my surprise then at finding JVC's XL-V274 already on page 54 of issue 128. Only then it was called the XL-V264!

Now call me cynical, but I really cannot see the difference between last season's XL-V264 and this season's XL-V274. For example, they both share the same direct track access keypad, the same repeat, program and random play modes, the same tape edit and DDRP (Dynamics Detection Recording Processor) modes.

Even the layout of the fascia — including its fluorescent display — looks identical, right down to the variable output headphone socket. And yes, they both share the same remote control.

Under the bonnet? Unfortunately I did not have an XL-V264 to cannibalise. Nevertheless, judging by the response of our blind listeners, the plots and panel of test results (which are almost too close for comfort), it's unlikely that there have been any major revisions.



Now, I wonder whether the other hi-fi magazines have picked this up...

Sound Quality

Unaware that they were, in effect, listening to a CD player that they had already auditioned a year ago, the panel offered a remarkably consistent opinion. This version was described as warm and effusive, a characterful player that trips merrily along until tripped-up by a strong bass rhythm.

There's no lack of bass, yet what exists sounds fat and ponderous compared to the relative agility of its mid and treble.

Prokofiev's *Romeo And Juliet* ballet was likened to "a funeral march" thanks to the leaden sound of double bass, timpani and cello. However, the grumbling bass from Cassandra Wilson's CD sounded especially powerful, with great dollops of LF energy.

Rather like the action of a loudness button, JVC's XL-V274 tends to reinforce the impact of bass while intensifying the brightest treble detail. The right hand of Lyle Lovett's piano, for example, sounded penetratingly sharp, just as the thudding double bass from Cassandra Wilson's *Tell Me...* was described as "double-barrelled".

On the one hand its music sounds big, brassy and colourful; on the other, it's often oppressive and artless. Funnily enough, we said pretty much the same thing about the XL-V264 only a year ago.

Conclusion

Anyone who missed the XL-V264 first time around can hop aboard the XL-V274 — and at no extra cost — if they really want to enjoy exactly the same blend of generous facilities

with a distinctive but gaudy sound.

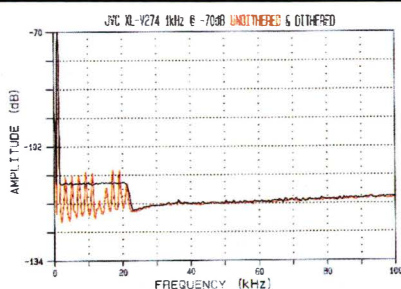
Bass freaks will be perfectly at home with this player though it's likely to prove a little too smothering for the rest of us. How about some genuine changes for next season, eh JVC?

LAB REPORT

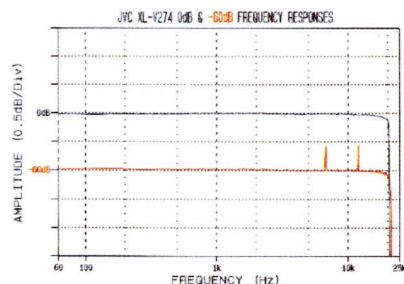
Once again, this player uses JVC's MN35500 DAC which includes 64x oversampling, variable-order noise-shaping and a Pulse Edge Modulation bitstream output. Technically it's extremely advanced, offering a minimum 0.0004 per cent distortion, a superb low-level linearity with errors of just 0.3dB over a full 100dB dynamic range and a fabulous 108dB S/N ratio.

These specs, plus the 106dB stopband rejection, run close to state-of-the-art for any bitstream player at any price. Compared to the XL-V264, however, there are few genuine differences — even the -60dB response has an identical 'blip'! Channel separation, distortion, linearity, S/N and even the 2.12V output level are the same.

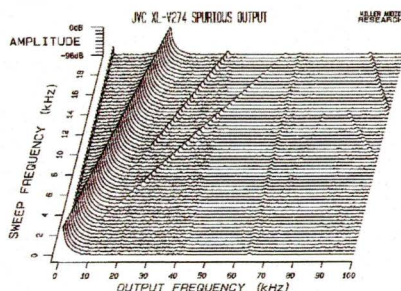
Look closely and you'll see the V274's response is down by 0.13dB at 20kHz compared with the V264. But this is clutching at straws, folks.



A perfect result showing the dithered signal (black trace) converting all distortion harmonics to random noise.



Very flat, ripple-free responses demonstrating excellent linearity and low-noise.



JVC has one of the best digital filters there is, removing stopband noise but leaving distortion from the DAC.

VERDICT

- ▲ **Weighty, and rich-sounding player. Excellent features.**
- ▼ **Bass can sound overblown and overbearing. Music tends to drag.**

SOUND ★★★★★

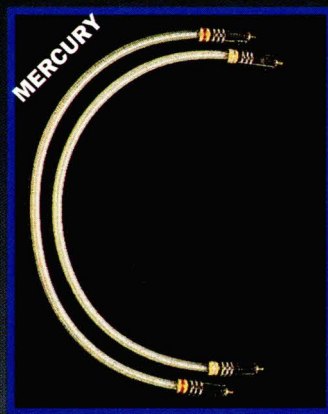
VALUE ★★★★★

PRICE £160

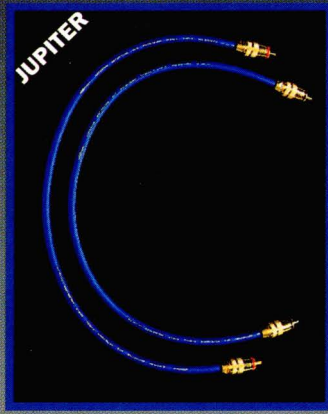
✉ JVC UK Ltd, JVC House, JVC Business Park, Priestley Way, London NW2 7BA.
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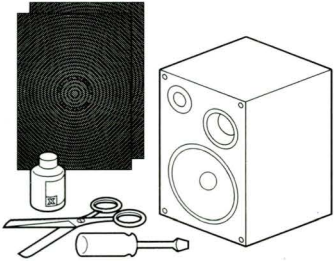
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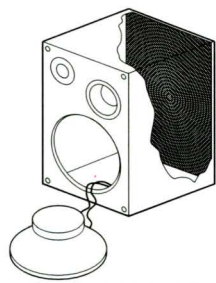
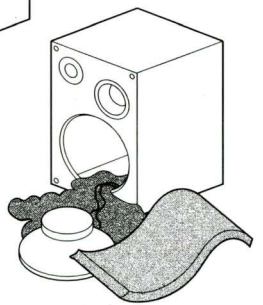
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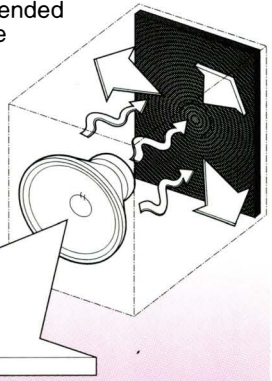
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CHOICE VERDICT

Sound Quality	■ ■ ■ ■ ■
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KENWOOD DP-3060



No-one could ever accuse Kenwood of not sticking to its guns. Four years ago it was the first manufacturer to use a bitstream DAC from NPC (Nippon Precision Circuits), an association it has maintained through the DP-4030 (issue 95), DP-3040 (112) and DP-3050 (124) — all players pitched at the pivotal £200 price-point.

Rather like sticking with the same Lottery numbers week in, week out, for a few million years, this faithful approach has ensured Kenwood finally gets its slice of success. This, then, is the new DP-3060, logical successor to the ill-fated DP-3050 with a similarly broad range of features now re-distributed over a curved fascia.

I'm bound to say that the top right hand corner is an odd place to stick an eject key but I imagine that anyone who buys the player will soon get used to its quirky layout. With direct access, program, repeat and random play plus peak search, digital volume and multi-disc edit on offer, there's plenty to tempt the impulse purchaser.

Sound Quality

Such is the sedate and sophisticated composure of this player that you'd never



guess you were listening to a beer-budget machine. Just as importantly, this sense of equanimity is not achieved by squashing the passion from its music. We were mightily relieved to rediscover the sultry intensity of Cassandra Wilson's *In My Kitchen*, gutsy music that reflected the sturdy but honest sound of the player itself.

The Kenwood can decipher fairly complex rhythms, whether this be the layering of performers marking the tight but tidy intro to Lyle Lovett's *Black And Blue*, or the seemingly

unstructured percussion and guitar that open Cassandra Wilson's *Blue Light* CD.

Our listening panel also applauded the DP-3060's coherence, its smooth and even-handed balance builds along with the developing interplay of its music, rather than limiting its resolution or crumbling into an untidy heap. *Masks* from Prokofiev's *Romeo And Juliet* built from near-silence, instrument on instrument to convey a busy and complete picture rather than one dominated by certain instruments.

Sure enough, the DP-3060 is not perfect. It lacks a certain colour and flamboyance and can sound a little thin and restricted, especially through the bass. Yet this is nit-picking in relation to its potential for expanding to accommodate future upgrades to the remainder of your system. A good 'un.

Conclusion

This player marks a significant upturn in Kenwood's fortunes, a player that will not seem out of place in a costly system and proof positive that budget players do not have to sound cheap.

And to get this you aren't expected to forfeit any shred of convenience. Indeed the DP-3060 is as generously equipped as the

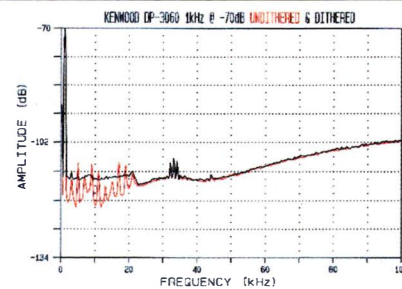
average fly-by-wire cockpit, providing a rare example of the 'complete' budget CD player: one that's beautifully built, luxuriously appointed and sounds implausibly expensive. A clear-cut Best Buy.

LAB REPORT

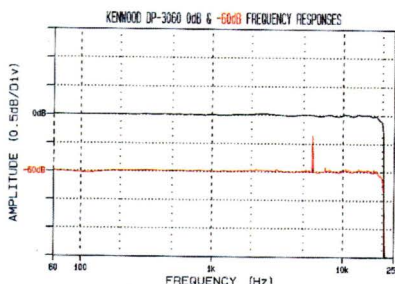
Kenwood's latest update to the third generation of NPC's combined digital filter and bitstream DAC IC (the SM5872) has worked wonders. Gone is the massive splurge of re-quantisation noise which was almost guaranteed to upset the constitution of some amplifiers. Gone, too, is the insidious rippling of its response, caused by unsophisticated digital filtering.

Indeed the new SM5872, and Kenwood's use of it in the DP-3060, marks a bold step in the right direction. Low-level linearity is improved from errors of nearly -3dB to just -1dB over a full 100dB dynamic range while the 103dB S/N ratio is superior to that achieved by Marantz with the chip in either the CD-53 or CD-63.

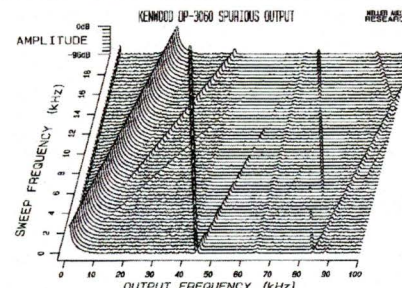
Distortion is extremely low too, just 0.009 per cent midband at the musically important -30dB — a possible benefit of Kenwood's refined H.P. Master Clock circuit.



Wider dynamic range and far lower ultrasonic noise than achieved by the older DP-3050 (issue 124).



Very flat response that remains unchanged at low levels. Just a hint of rippling from digital filter.



Spot the difference between this plot and the Marantz CD-53 — yep, they're using the same digital filter and DAC!

VERDICT

- ▲ Positive, dynamic and very composed. A toe-tapping player.
- ▼ Could possibly sound a little too small, or even thin, in some systems.

SOUND ★★★★★

VALUE ★★★★★★

PRICE £200

✉ Trio-Kenwood UK Ltd,
Kenwood House, Dwight
Road, Watford,
Hertfordshire WD1 8EB.
☎ (01923) 816444

MARANTZ CD-53



Think you've seen this player before? Well you have, in the superficially identical form of Marantz's CD-63 (issue 137). Indeed, both players share the same CDM12 CD mechanism, the same slimline chassis and 'Softline' fascia plus exactly the same range of direct track access, program, edit mode and display dimmer facilities.

They even share the same remote control with its extra repeat, random, intro scan and digital volume facilities. So why, I hear you ask, does the CD-53 represent a valuable saving of some £50 over the CD-63? The answer, as ever, lies under the bonnet.

Here we find the digital building blocks of the CD-63, including Philips' SAA7345 decoder and a combined 8x oversampling filter/bitstream DAC from NPC. However where the CD-63 features Marantz's fully-discrete HDAM op-amp the CD-53 features a blank section of PCB track.

Other treats in the 63 include Cerafine and Silmic power and decoupling capacitors that have been swapped for standard ELNA's in the 53. Bead capacitors are replaced by ceramics while the optical output and rubber grommet, normally used to damp the crystal,



are given the chop. A tidy little list that clearly separates the CD-53 from the CD-63.

Sound Quality

These compromises ensure that the CD-53 is neither as sophisticated as the CD-63, nor as obviously "jazzed-up" as the older CD-52 (issue 119). Instead, the CD-53 treads a more sober path, allowing its bass free rein, as our panel would have it, to "flop about rather than drive the music along".

In many respects this is the antithesis of Denon's DCD-615, its rich and rolling character lacking both focus, articulation and fine detailing yet still succeeding in conveying its music in a thoroughly emotive fashion.

As a result both the flowing lyrics of Lyle Lovett's *Black And Blue* and the relentless build-up to Prokofiev's *Romeo And Juliet* sustained our listeners' attention despite their exposure to both pieces. Yet extreme treble and bass are certainly lacking, stripping a little weight from Prokofiev's double bass and timpani and also dulling the shine from Stevie Ray's metal-stringed guitar.

Once again, however, the CD-53 continues to impress by successfully grappling with the basic passion — the "meat and two veg" — of its music while still flaunting what was described as a "technical apathy".

Conclusion

Somewhat unusually for Marantz, this player has not been designed to leap out and grab you by the ears. Indeed, on the basis of a quick A/B dem it's unlikely to sound terribly incisive, immediate or raunchy. Moreover you wouldn't necessarily liken its performance to the subtlety and scale achieved by the costlier CD-63.

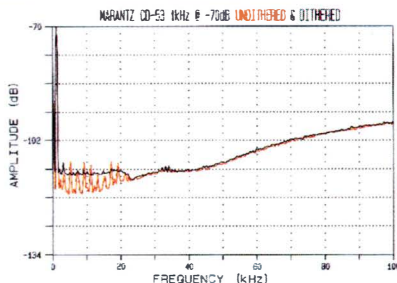
In truth, the CD-53 is a no-nonsense machine whose technical heritage seems merely incidental to the highly individual character of its sound. In our panel's words, "this is one to buy in haste and savour at leisure".

LAB REPORT

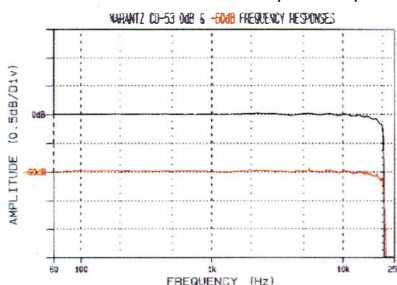
Comparisons with Marantz's CD-63 from issue 137 are fascinating — despite numerous revisions, there are few differences in the two player's basic performance. The increase in peak-level THD from 0.0006 to 0.02 per cent across the audio band, the 54dB suppression of stopband noise and kink at 5kHz in the de-emphasis routine are all functions of the SM5872 filter/DAC IC.

Other features, like incredible channel separation, high 2.3V output and moderate 220Ohm impedance are linked to both the common layout and analogue circuitry. Yet subtle distinctions do exist.

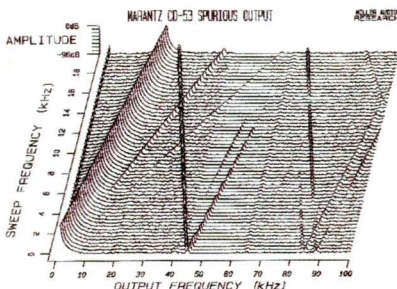
This CD-53 is actually more linear than our sample of the 63, while there's a slight change in its HF response. Furthermore both its noise modulation and 'real' S/N have deteriorated by nearly 1dB. As before, the key to understanding the gulf between the CD-53 and CD-63 boils down to the 'sound' of their respective capacitors.



The blip of 3rd harmonic distortion and sweep of ultrasonic noise is indistinguishable from the CD-63 (issue 137).



By removing the HDAM buffer, Marantz avoids the slight treble dip seen in the CD-63 (issue 137).



The streak of 2nd harmonic distortion and partial V-patterns of stopband noise are a 'fingerprint' of NPC's SM5872 filter/DAC.

VERDICT

- ▲ Sweet-talking CD player from past masters of the art.
- ▼ Lacks deep bass and high treble. Delicacy has been abandoned.

SOUND ★★★★★

VALUE ★★★★★

PRICE £200

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

NAD 501

When it comes to slim, grey CD players devoid of all but the most crucial widgets, NAD has the market sewn-up. Previous players, including the 5425 (issue 95) and 502 (issue 119) have proved unique in applying the audiophile principle of minimalism to a product group normally associated with features, facilities and flashing lights.

Technophobes will be delighted to learn that the 501 is no different. Indeed, the first new player from NAD in the best part of two years is perhaps the least well-equipped yet. Many consumers might accept the loss of a direct access keypad, a variable or headphone output or even a multi-track program facility, but a £180 player without a remote control is downright puritanical.

In its defence, NAD points out that the 501 is designed as a low-cost, entry-level player with the emphasis firmly on sound quality, not convenience. I'd agree. Indeed, you could easily argue that the 501 is a downright inconvenient CD player.

Furthermore, and despite appearances, the 501 bears no relation to the 502. Here the 502's Sony mechanism and Technics MASH/PWM DAC are replaced by a decent Philips CDM4 transport and one of Philips'



early SAA7323 bitstream DACs — the very same combination that powered Rotel's RCD-965BX to glory back in issue 100.

Sound Quality

Without wishing to appear contradictory, the NAD 501 sounds quick-paced but also restrained, as if it were spoon-feeding measured portions of slick and tidy detail. Lyle Lovett, for example, sounded a little more reserved than he usually does but the 501 didn't smother the catchy bass line or

mute the delicate patter of tiny hi-hats. It's all there, but in miniature.

'A neat terraced house rather than a rambling mansion' remarked our listeners by way of comparison with Marantz's CD-53. Prokofiev's *Romeo And Juliet* was pulled from a marvellously dark and clean acoustic, conveying much of the ballet's atmosphere but not the sheer power and dynamics of, say, the string section. So its performance is incomplete but remains engaging, albeit as a result of musical subterfuge.

Still, the 501 is less successful with fiercer recordings — such as Cassandra Wilson's *In My Kitchen* — where the player clamps down on powerful vocalists, making them sound pinched and inflexible as they are funnelled unsympathetically from the speakers.

Conclusion

Having steadily built-up a head of support from our panel, NAD's 501 fell at the final fence as our dynamic-sounding pop selection highlighted an inescapable Achilles heel. Specifically, the player has a tendency to cramp the style of any music that falls outside its precisely determined remit.

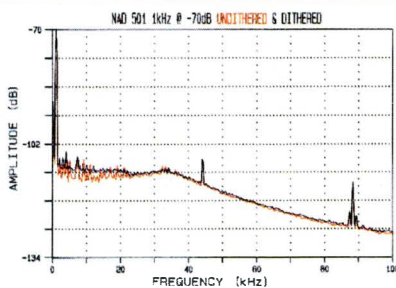
"It is," the listening panel suggested, "a duffle bag on the great baggage carousel of life". A

strange but uncannily appropriate analogy bearing in mind the player's eccentric appearance and its aversion to user-friendly features. One for the non-conformist.

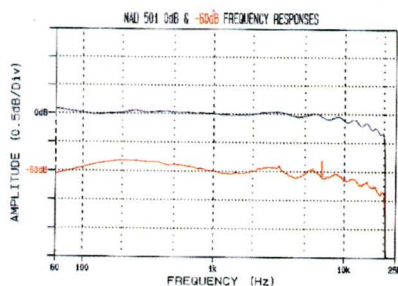
LAB REPORT

Despite using a classic SAA7323 bitstream DAC, NAD's implementation alters its 'fingerprint' when compared with the likes of Rotel's RCD-965BX and AMC's CD6 (issues 100, 124). NAD has drafted in extra analogue filtering which cuts back on all spurious output above 35kHz (see 3D and -70dB plots) but also influences the treble in the audioband (see response plot).

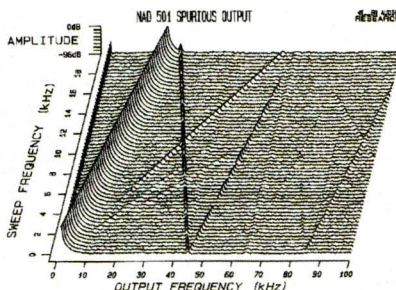
This explains how NAD has maintained a moderate but very even spread of distortion right up to 20kHz, clocking-up some 0.006 per cent at 0dB and 0.01-0.03 at the musically important -30dB. Ordinarily, distortion from the SAA7323 DAC will increase by a factor of ten from 1kHz to 20kHz. The just-about-16-bit S/N ratio of 97dB is pretty typical, however. One final point. NAD has hiked its output +2dB above many competing players so beware of indiscriminate A/B dealer demos.



Dithering should remove harmonics (black trace — see issue 107). Note effect of NAD's analogue filter above 35kHz.



Strong rippling from Philips' integral 256x oversampling. Bass boost at low levels also seen in issues 100 and 107.



NAD's analogue filter effectively removes the second stopband image, normally seen fanning out from 88kHz.

VERDICT

- ▲ A very neat and tidy sound from a neat and tidy player.
- ▼ Imposes too much restraint on freely dynamic material. No remote control.

SOUND ★★★★★

VALUE ★★★★★

PRICE £180

✉ NAD Marketing Ltd,
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PHILIPS CD740

Following what looked like a period of commercial hibernation, Philips has emerged with a raft of new digital ICs and associated hardware. These components are represented in CD players from competing manufacturers as well as in Philips' own line-up. The CD740 is just one example that, superficially at least, is based on the CD750 reviewed in issue 137.

Here we find the same CDM12 linear-tracking CD transport, the same chassis and fascia design with provision for direct track access, repeat and random play, 30-track programming and 'Edit Optimal' which re-arranges the playing order to suit recording onto specific lengths of tape. Philips has even retained its novel remote volume control that adjusts the signal level on both analogue and digital outputs, a feature that's linked to the player's fade-in and fade-out facility.

It's goodbye, however, to the FTS and Personal Preset memories and also the well-known BS DAC which has been traded for a new TDA1549 BCC DAC. In practice this fledgling converter is rather like the TDA1305 featured in Cambridge's *DAC-Magic* (issue 136), albeit with lesser digital filters.

Philips describes it as a mixture of (1-bit)



Bit Stream and (multi-bit) Continuous Calibration technology even though it has retained the familiar PDM bitstream Conversion logo on the CD740's fascia. As this is not a pukka PDM player, I'd suggest that Philips' dreams up a new badge to accompany this technological offshoot.

Sound Quality

Falling smack in the comfort zone, this studious-sounding player soon had our listening panel snoring in agreement. It is

tailor-made for late night listening, with a very dark and almost dreamy balance that ensures the most raucous styles of music remain entirely palatable.

"There's much more of a smooth Galaxy bar about this player than the bitter tang of Bournville chocolate" suggested one listener whose blood sugar was obviously on the wane. Stevie Ray, meanwhile, lacked direction and momentum just as the walking bass line from Lyle Lovett's *Black And Blue* was criticised for wandering a little too aimlessly.

Even Cassandra Wilson who, thanks to her microphone technique, normally sounds very immediate, forceful and vibrant, was obviously muted on this occasion as her fizzy vocals were traded for an altogether gentler and less demanding outlook. "Like the average hippopotamus" remarked the panel "this player needs to lighten-up".

Conclusion

This is only the second time we've reviewed a CD player based on one of Philips' new BCC converters but, with so many versions now on general release, I'm sure that many other manufacturers will soon be hot on the trail.

Nevertheless, in this instance I cannot help

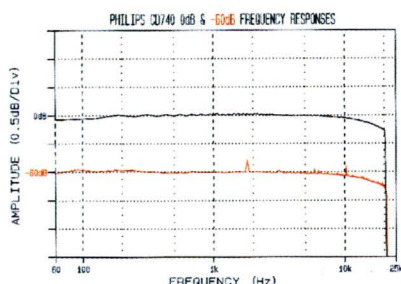
but feel Philips has erred on the side of caution, engineering a player with a tendency to smother the life and spontaneity of its music. No nasty shocks from the CD740 then, but flashes of brilliance are equally unforthcoming.

LAB REPORT

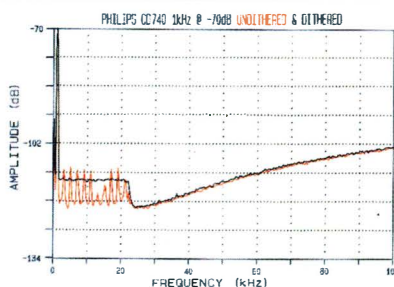
Philips' new TDA1549 BCC DAC contains a 3-stage digital filter (amounting to 96x oversampling) with a 2nd-order noise-shaper that truncates 16-bit to 5-bit data. This then feeds two pairs of high-speed 4-bit multi-bit converters (amounting to 5-bits per channel), requiring a very gentle 1st-order analogue filter.

The good news includes low 'bitstream-like' distortion of just 0.02 per cent (midband, -30dB), good low-level resolution and a wide S/N ratio of 105dB. This is slightly better than most bitstreamers but slightly worse than that expected of a good multi-bit DAC.

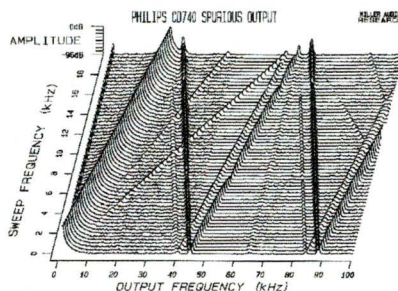
The bad news hinges both on the appalling 29dB suppression of its digital filters and the high +15dB noise modulation — steep even by multi-bit standards and hardly a boon for sound quality. And then there's the reduced bass output which falls by 1.7dB at 20Hz.



The digital filter may be naff but at least the player's response escapes any obvious rippling.



A wider dynamic range, lower (dithered) distortion and ultrasonic noise than Philips achieved with its Bit Stream DACs.



The CD-740 has low harmonic distortion but oversampling filter lets through huge stopband images (V-Patterns).

VERDICT

- ▲ 'Dinner jazz' machine that won't tear your ears off.
- ▼ Needs jazzing-up to stop listeners nodding off.

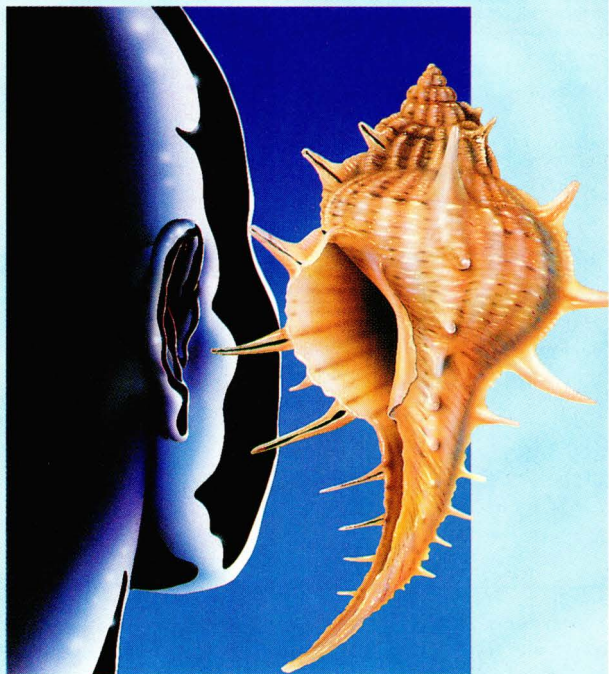
SOUND ★★★★★

VALUE ★★★★★

PRICE £170

✉ Philips Consumer Electronics Ltd, The Philips Centre, 420-430 London Road, Croydon CR9 3QR.
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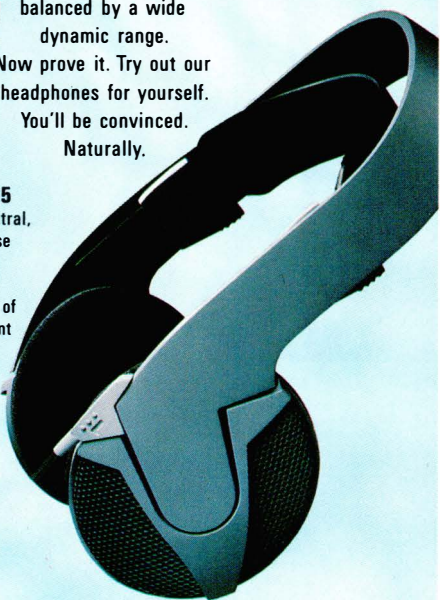
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PIONEER PD-S503

Three years ago, players using novel digital filter technologies, like Wadia's Digimaster signal processing, would have cost you thousands of pounds. Since then Pioneer has hijacked the idea, condensed Wadia's DSP16 processors and EPROM look-up tables onto a single IC and called it 'Legato Link Conversion' (LLC).

Incidentally, if you've read the propaganda on the respective benefits of the Digimaster and LLC eight times oversampling filters, you'd never guess they amounted to one and the same thing! For a more thorough discussion, please refer back to issue 113.

For the current season, Legato Link has been combined with Pioneer's own PFM bitstream DAC to reduce costs even further. So the PD-S503 amounts to the cheapest LLC player to date, a player that combines the bare digital bones of Pioneer's PD-S703 (issue 137) with the aesthetics of the old PD-S501 (issue 112).

Press the eject key and out slides Pioneer's upside-down 'Stable Platter' mechanism. Load-up and you'll have access to its direct entry keypad, program, peak search, auto tape edit, highlight



scanning and repeat play facilities. Quite a tidy package and complemented by a remote handset with volume control.

Sound Quality

In common with previous Legato Link players, the 503 got a very mixed reception — hardly surprising, given its varied interpretation of different music. Lyle Lovett sounded more distant than usual, the player's easy-going, wallpaper-like quality inspiring our panel to suggest this was a "ready-pasted CD player".

Prokofiev's *Romeo And Juliet* sounded comfortable, weighty and moderately detailed yet the performance still lacked energy, life and spontaneity. Cassandra Wilson also sounded very flat, dry and insipid, her strong bass line lacking the grumbling resonance that would otherwise keep this track rolling along. Instead it simply proved 'rather too much like hard work'.

Otherwise the PD-S503 still has a habit of sounding unduly loud, shouting rather than reflecting a true sense of musical and dynamic contrast. This sharp and glaring quality seems quite at odds with the recessed treble and inoffensive balance heard with other selections of music. So, if nothing else, the PD-S503 will always keep you guessing.

Conclusion

Ever since we first clapped ears on Pioneer's Legato Link technology, over two years ago in issue 112, we have continued to obtain unpredictable and inconsistent results. The original PD-S801 Legato Link player prompted our panel to suggest it was "easy going yet with an uncanny ability to offend", a dichotomy not unlike our panel's epitaph for this latest PD-S503.

"Rather like a chameleon with an identity crisis" they

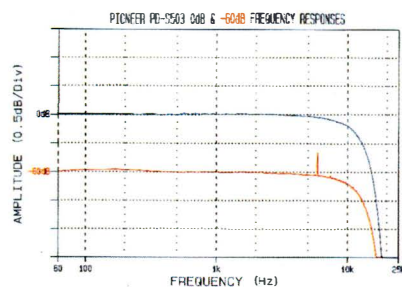
suggested, "this player does not adapt itself to the tonal colours of different musical styles with any great success". It's another love it or loathe it verdict for one more in a long line of Pioneer's Legato Link CD players.

LAB REPORT

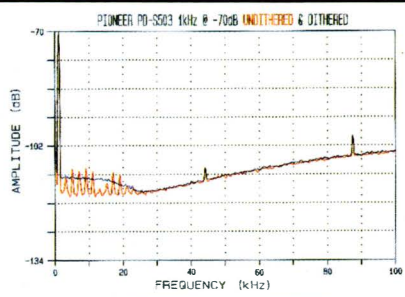
Pioneer has deployed its new PD-2029A combined LLC filter/DAC in both its PD-S703 (issue 137) and PD-S503 players, so both enjoy the same low distortion, good low-level linearity and acceptable 102dB S/N ratio — typical bitstream-like results.

The effect of the LLC filter is more dramatic. Hence the 7dB 'rejection' of stopband noise at 24.1kHz is just an indication of how Pioneer dovetails these digital images into the genuine audioband signals (see 3D plot). Sadly, it also allows sampling tones at F_s (44.1kHz), $2F_s$, $3F_s$ etc to leak out — hence the 28mV recorded at 176kHz ($4F_s$).

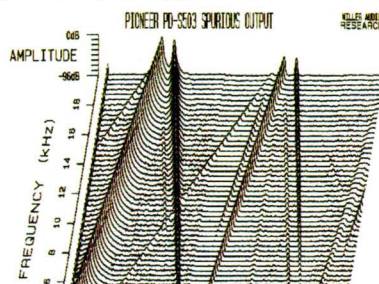
The high 2.4V output is rather cheeky (beware quick A/B dems) but its 1.1kOhm impedance is also less than ideal for long cable runs, especially as its treble response is already greatly modified by the LLC filter.



Pioneer's LLC filter starts well inside the audioband, providing the now familiar 4dB cut at 20kHz (-14dB @ 25kHz).



Dithering removes distortion but both 44/88kHz sampling tones and requantisation noise are higher than earlier LLC models.



The LLC 'filter' allows stopband images to collide with the audioband, creating the illusion of a response beyond 22kHz.

VERDICT

- ▲ **Idiosyncratic, but like other LLC designs it could work wonders in the right system.**
- ▼ **Unpredictable; high output level will confuse in dems.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £200

✉ Pioneer (GB) Ltd,
Pioneer House, Hollybush
Hill, Stoke Poges,
Slough SL2 4QP.
☎ (01753) 789789

SONY CDP-312



Rather like a cheap pork pie, the insides of this budget player are 95 per cent fresh air. But you cannot whittle down the cost of a CD player without making the odd concession. Even for a player which, despite obvious differences in appearance, is quite clearly derived from the fab *CDP-311* which received a Best Buy a year ago in issue 128.

In the event, Sony has succeeded in trimming £20 off the player's ticket by abandoning widgets like a headphone socket, peak search and variable intro scan while moving others, like the direct access keypad and fader, to the seclusion of a matching remote control. This still leaves the *CDP-312* with a generous roll call of features. More than enough, in fact, to give most players at £180-£200 pause for thought.

Under the bonnet, you'll find that Sony has condensed much of the crucial signal processing, including oversampling, noise-shaping and the Pulse bitstream DAC onto one busy little IC, a chip first seen in the *CDP-311*. This is the principal reason why such a flexible player can be produced so



economically. However, as we were to discover, the implementation of this self-same circuitry is just a little rougher in this bargain-basement *CDP-312*.

Sound Quality

The *312* reminded our panel of that famous Sherlock Holmes adventure *The Strange Case Of The Disappearing Instruments*. By way of example, the sizzling cymbals from Stevie Ray's *Stang's Swang* popped periodically in

and out of earshot, leaving a full but phsey bass line to sustain the rest of the track.

Yet, compared to others in this test, the *CDP-312* is at least a rousing and energetic performer, one that's prepared to jump in at the deep end and expose much of the music's natural dynamics and drama. However, this is won at the expense of a technicolour midband, bringing what was described as "a quacky and plastic kazoo-like coloration" to what should have been the fulsome and raspy character of Prokofiev's brass.

Sibilance, where it occurred, was often laser-etched in its ferocity, leaving the likes of Cassandra Wilson sounding as if she were "frying tonight". Nevertheless, the *CDP-312* could never be described as timid or self-effacing. It's a rough diamond, but more rough than diamond.

Conclusion

By way of conclusion our panel suggested that the *CDP-312* "has all the hallmarks of a Ratner's CD player, providing plenty of injection-moulded glitter at a bargain price". It's certainly a very free-spirited player, albeit one that's unable to disguise its budget heritage as effectively as the classic *CDP-311*.

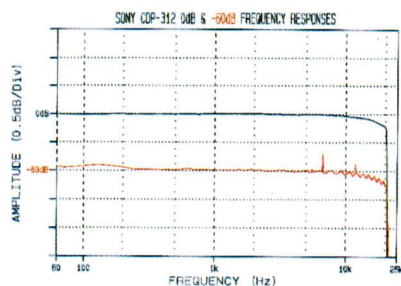
This shows the impact that small cuts in price can have on the overall calibre of such affordable players. But with the *CDP-311* as its foundation, the *312* always had an advantage. Recommended then, for the seriously strapped.

LAB REPORT

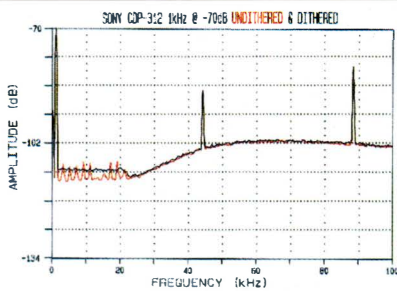
In perfect accord with the impressions of our panel, the technical implementation of this *CDP-312* is, indeed, less sophisticated than the Best Buy *CDP-311* (issue 128). The CXD2565 oversampling/noise-shaping/DAC IC is revealed by the typical 74dB stopband suppression, the increase in distortion from 0.002 per cent at 1kHz to some 0.04 per cent at 20kHz and the kink in low-level resolution at 20kHz.

However, in this particular application we see its S/N deteriorate from 97dB to 95dB together with the leakage of both F_s (44.1kHz) and $2F_s$ (88.2kHz) sample tones. These are visible on both 3D and -70dB plots.

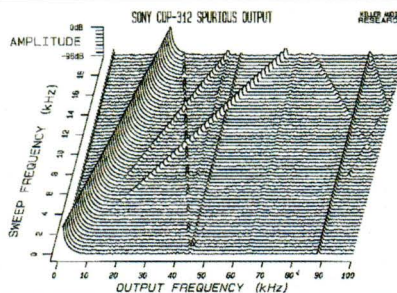
This throws up the possibility of digital/analogue cross-coupling which, in turn, could well be responsible for the disruption of its low-level frequency response (red trace). Either way, it's bad news for sound quality.



The other plots show sample tones, but the rippled low-level response provides evidence for unwanted cross-coupling.



Dither eliminates low-level distortion but other compromises have released 'sample tones' at 44kHz and 88kHz.



High frequency distortion is higher than stopband images. Note tones at 44kHz and 88kHz.

VERDICT

- ▲ You'll never have a dull moment with this lively and up-front player.
- ▼ Has all the sophistication of a hormone-crazed rhinoceros.

SOUND ★★★★★

VALUE ★★★★★

PRICE £156

✉ Sony UK Ltd, The Heights, Brooklands, Weybridge, Surrey KT13 0XW.
☎ (01932) 816000

TECHNICS SL-PG460A

On the face of it, Technics' SL-PG460A looks like a potential bargain. After all, it's visually identical to the SL-PG440A that it replaces (see issue 124) yet saves you a tenner into the bargain. The same chamfered fascia design, comprehensive range of facilities and posh 'curvilinear' remote are included so there's been no cost-cutting in the convenience stakes.

Once again, regular facilities like play, track skip, program, repeat and a headphone socket are offered-up at a finger-friendly angle while advanced widgets like direct access, peak search, auto cue and Technics' Edit Guide (including tape length, side A/B, disc link and time fade options) are scattered around its fluorescent display.

The catch? Well, this is where most hi-fi reviews stop but *Choice's* probing begins. Technics' has saved a bob or two by trading Philips' swing-arm CDM4 CD transport for the newer linear-tracking CDM12 mechanism.

More importantly, and following the lead of both Sony (issue 128) and Philips (issue 124), Technics has condensed the operations of its servo processor IC, digital signal



processor IC, oversampling filter and MASH/PWM bitstream DAC onto a single slab of silicon. This busy little IC is called the MN662713 — the nearest thing yet to a CD player-on-a-chip.

Sound Quality

Despite wholesale differences in technology, the apathetic sound of Technics' SL-PG460A was likened to Philips' CD740. "Same wine", they remarked "but a different bottle". Yet

this player is rather less sympathetic of vocal sibilance which it interprets as a slurring rather than a spittiness.

Initially, our panel thought its superficially rhythmic and detailed sound was promising but they soon became jaded by its flat, colourless imaging and muted dynamics. "About as stirring as instant Bisto" remarked one listener in response to the lethargic overtones of Prokofiev's *Dance Of The Knights* which now lacked its customary sense of drama, scale and tonal shading.

This impassive interpretation carried through to Lyle Lovett where the piano, bass and drums, rather than sounding in step, decided to meander off in different directions, as if the musicians had suddenly lost concentration. Another safe but thoroughly unadventurous player that, according to the panel, is "as risky as bottled shandy on a stag night".

Conclusion

At the sharp end of the CD scene, cost and convenience are king and, if the SL-PG460A is any guide, they clearly take precedence over the Holy Grail of gripping sound quality. In this instance it's as if Technics has tried for a

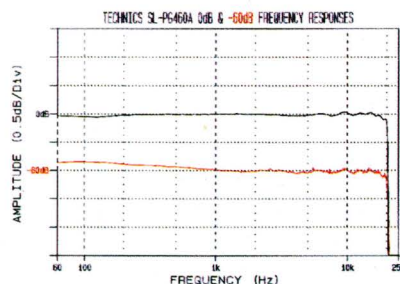
very neutral and even-handed balance. An option that has washed the life and vitality from its music and doused the fire that once burned so brightly in memorable budget wonders like the Technics SL-PG200A, a Best Buy of yore.

LAB REPORT

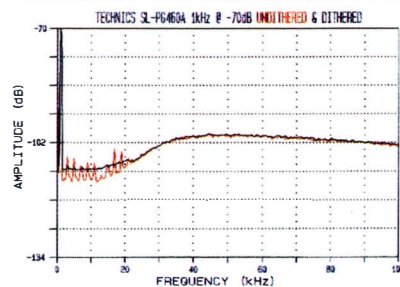
In common with a sample of Technics' SL-PG440A (issue 124) this SL-PG460A suffered from momentary bursts of distortion from transient signals occupying the top 25dB of its dynamic range. This is probably due to a spontaneous overflow of the noise-shaping loop yet, having now seen it twice, it's a bug in Technics' mathematics that needs sorting out.

Otherwise the 'character' of this new MN662713 chip is similar to the MN6475 MASH/PWM bitstream DAC used in the SL-PG340A, '320A and '420A (issues 128, 112, 107). Same stopband pattern and just-about-16-bit S/N but worse low-level linearity and LF distortion.

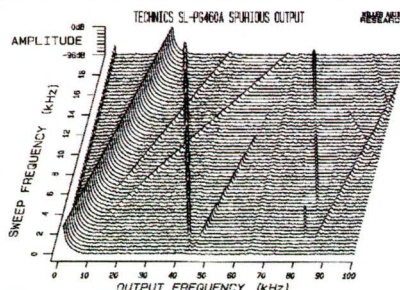
Technics also seems to have cut corners with the master clock (is this a ceramic resonator I see before me?), the vast 807ppm error equivalent to a +16Hz shift at 20kHz. Thank goodness there's no digital output.



Mild rippling entirely in line with SL-PG340, '320 and '420 (issues 128, 112, 107) despite new digital IC's.



Below average dynamic range and wave of requantisation noise is typical of previous MASH/PWM bitstream players.



V-shaped stopband images are typical of the MN6475 oversampling filters in the new all-in-one MN662713 chip.

VERDICT

- ▲ Feature-packed player that starts with purpose...
- ▼ ...but never seems to pull it off. Sadly characterless.

SOUND ★★★★★

VALUE ★★★★★

PRICE £160

✉ Panasonic Consumer Electronics, Panasonic House, Willoughby Road, Bracknell, Berkshire RG12 8FP.
☎ (01344) 853943

CD PLAYERS

Conclusions, best buys and recommendations

Hi-Fi Choice's policy of targeting extremely tight bands of products gives us a comprehensive 'feel' for performance in key market areas. On this occasion our blind listeners were very impressed with at least four of the ten players. Indeed, the best of this bunch are more than capable of fronting a very high quality system. However, the gulf between the pick of this crop and the best £250 players (issue 137) is still more significant than the mere fissure that lies between key £250 players and those at, say, £500.

And the moral of this tale? If you can scrimp and save that extra £50 then you'll be rewarded with a player of far greater

long-term potential. For the sake of £50, for example, the vivid quality that captivated us with Pioneer's *PD-S703* escapes the unpredictable *PD-S503*.

Despite using new and innovative technology and sounding neither aggressive nor jumbled the Philips *CD740* is too smooth and ponderous for its own good. Technics' *SL-PG460A* had a similar reaction, a genuine disappointment bearing in mind former Recommendations and Best Buys that have been handed down to the company's budget players.

Players like the Dual *CD1001RC* and JVC *XL-V274* provide a marked contrast, the latter for its ebullient bass and gaudy

musical colour and the former for its paucity at the bottom end.

Like Dual, NAD is an infrequent guest at our listening sessions. But this time round, NAD's obsession with fuss-free CD players hasn't delivered the goods. The *501* is too cautious with dynamics, and there aren't any widgets to compensate.

Sony's *CDP-312* is less tidy and refined than the *501*. Yet by balancing a rousing and overly energetic sound with a wealth of useful features, an attractive, well-built chassis and a generous price tag, Sony earns itself a Recommendation. That said, the *312* is a shadow of the £250 *CDP-715* that stormed to a Best Buy in issue 137.

The Denon *DCD-615* and Marantz *CD-53* won equal marks – and Recommendations – but for very different reasons. Neither has any advantage in the features stakes so your decision must be swayed either by the composed, detailed and measured performance of the Denon or the warts-and-all candour of the Marantz. Both are appealing yet neither is flawless. If the Denon let its hair down and the Marantz adopted greater civility, then perhaps we'd have had three Best Buys on our hands.

Only one of our budget wonders, Kenwood's *DP-3060*, warranted the Best Buy accolade. Based on the same chip as

Tricks of the trade

You aren't supposed to notice it, but an insidious trend is on the increase: boosted output levels. If all CD players adhered to the standard 2V output then direct A/B comparisons between different models could easily be conducted on a fair and level playing field. Yet in this test, only Sony hit the 2V nail on the head. And unfortunately once a manufacturer decides to squeeze 2.1V or 2.2V from its player to confer some advantage on audition, the competition is likely to follow suit or even up the ante to 2.3V or more.

Even within this group of ten players, our tests revealed a massive +3dB gulf between the quietest (Dual *CD1001RC*) and loudest (NAD *501*) players. All else being equal, this advantage in level will often be perceived as a bigger and bolder sound when you audition a player.

Choice is the only magazine to conduct blind listening tests with player outputs normalised to a fixed level. As a result we compare genuine rather than artificial differences between players, ensuring that our tests are authoritative, not arbitrary.

Measurement data at a glance

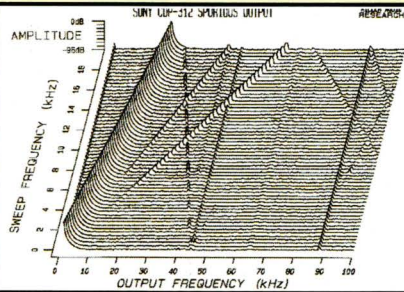
	Denon DCD-651			Dual CD1001RC			JVC XL-V274			Kenwood DP-3060			Marantz CD-53			
	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	
CHANNEL BALANCE	0.1dB	0.1dB	0.1dB	0.4dB	0.3dB	0.3dB	0.1dB	0.1dB	0.2dB	0.0dB	0.0dB	0.1dB	0.0dB	0.0dB	0.0dB	
CHANNEL SEPARATION	135dB	121dB	97dB	107dB	102dB	84dB	124dB	106dB	78dB	106dB	103dB	92dB	155dB	135dB	142dB	
THD vs LEVEL	0dB	-100dB	-92dB	-73dB	-95dB	-89dB	-78dB	-101dB	-108dB	-84dB	-104dB	-102dB	-75dB	-103dB	-105dB	-75dB
	-30dB	-72dB	-70dB	-65dB	-84dB	-69dB	-66dB	-96dB	-83dB	-77dB	-94dB	-81dB	-69dB	-95dB	-81dB	-65dB
	-60dB	-48dB	-47dB	-56dB	-56dB	-38dB	-37dB	-59dB	-56dB	-51dB	-51dB	-47dB	-38dB	-51dB	-47dB	-35dB
	-80dB	-25dB	-29dB	-35dB	-28dB	-18dB	-17dB	-28dB	-31dB	-32dB	-26dB	-30dB	-18dB	-20dB	-24dB	-14dB
DITHERED	-90dB	-14dB	-20dB	-25dB	-16dB	-9dB	-10dB	-18dB	-23dB	-21dB	-15dB	-20dB	-9dB	-9dB	-15dB	-5dB
DITHERED	-100dB		-17dB		-1dB		-20dB				-15dB			-11dB		
DITHERED	-110dB		-8dB		No SIGNAL		-10dB				-6dB			-4dB		
RESOLUTION @	-60dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	
	-80dB	-0.2dB	-0.2dB	-0.1dB	+0.1dB		-0.1dB	-0.1dB		-0.1dB	-0.2dB		-0.1dB	-0.2dB		
	-90dB	-1.2dB	-1.6dB	-0.2dB	-0.2dB		-0.3dB	-0.3dB		-0.9dB	-1.3dB		+0.1dB	-1.1dB		
	-100dB	-1.3dB	-0.4dB	+2.2dB	+2.0dB		0.0dB	-0.1dB		-1.0dB	-0.4dB		-0.4dB	-0.4dB		
PEAK OUTPUT LEVEL	L	1.898V		1.805V			2.121V			2.163V			2.310V			
	R	1.914V		1.867V			2.156V			2.159V			2.315V			
RELATIVE OUTPUT LEVEL		-0.4dB		-0.7dB			+0.6dB			+0.7dB			+1.3dB			
OUTPUT IMPEDANCE		678ohm		1.1kohm			677ohm			402ohm			222ohm			
RADIO FREQUENCY SPURIAE	5mV @ 27 & 150MHz			20mV BROADBAND			20mV @ 28MHz			<1mV BROADBAND			20mV @ 85MHz			
1Hz NOISE MODULATION		+10.4dB		+0.5dB			+7.7dB			+4.0dB			+6.6dB			
CCIRIMD	0dB	-99dB		-87dB			-103dB			-101dB			-102dB			
SUPPRESSION OF STOP-BAND IMD		53.6dB		75.8dB			>106dB			53.9dB			54.0dB			
DE-EMPHASIS ACCURACY	1kHz	-0.1dB		0.0dB			0.0dB			0.0dB			0.0dB			
	5kHz	0.0dB		0.0dB			0.0dB			0.0dB			0.0dB			
	16kHz	-0.1dB		-0.2dB			-0.1dB			0.0dB			-0.3dB			
S/N RATIO (A-WTD), W/EMP, 0LSB		109.0dB		121.1dB			108.3dB			122.0dB			124.0dB			
W/O EMP, 0LSB		108.9dB		121.1dB			108.2dB			122.0dB			123.8dB			
W/O EMP, 1LSB		109.0dB		86.6dB			107.8dB			103.1dB			101.6dB			
DIGITAL OUTPUT	COAXIAL			COAXIAL			NONE			OPTICAL			COAXIAL			
CRYSTAL CLOCK ACCURACY		-3.2ppm		-0.8ppm			+116ppm			+14.7ppm			-0.4ppm			
TRACK ACCESS TIME (99)		3SECS		4SECS			5SECS			3.5SECS			3SECS			
SERIAL NUMBER		4084502291		10448			168W0005			40599055			MZ009331031460			
TYPICAL RETAIL PRICE		£180		£180			£160			£200			£200			

How to get the most from our lab measurements

Understanding the Frequency Response plot:

This graph demonstrates the response of the player at both peak level (0dB, black trace) and at a low level (-60dB, red trace). Ideally the black and red responses should match one another. However an increase in noise or deviation in linearity is revealed by a change in the smoothness and extension of the red trace.

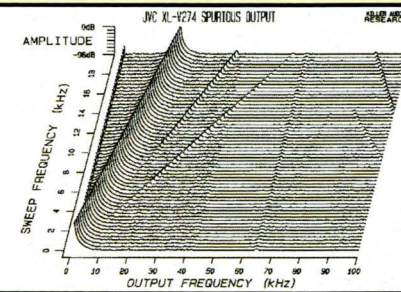
This plot demonstrates a rippling in the low-level response of Sony's *CDP-312*. Ripples in either response may be caused by the oversampling filter but 'wobbles' that only occur in the red (low-level) trace are more often caused by unwanted cross-coupling or an unstable Master Clock.



Understanding the dithered – 70dB/1kHz plot:

Dither is a special type of noise used to randomise the predictable quantisation errors that cause unwanted harmonic distortion. Ideally, harmonics are then traded for a slight increase in inaudible hiss, as our example plot from JVC's *XL-V274* clearly shows.

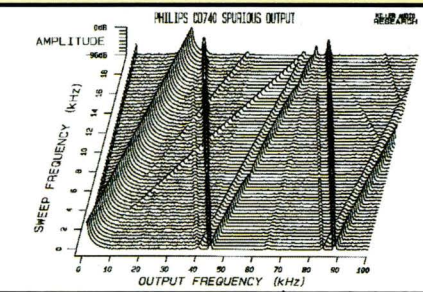
Look out for any build up of ultrasonic noise beyond 20kHz. This is a feature of many bitstream DACs whose noise-shapers are used to re-distribute huge levels of re-quantisation noise. Traditional multibit DACs are often 'cleaner' above 20kHz and, as a result, often perform more consistently when partnered with different amplifiers.



Understanding the 3D Spurious Output plot:

This shows distortion and sampling images. An audio frequency sweep (20Hz-20kHz) reveals continuous changes in performance rather than at one frequency. Second and third harmonics may be seen radiating out to the right of this sweep from the Philips *CD740*. The lower the distortion, the less obvious these harmonics will appear.

In addition, sampling or stopband images are seen as whole or partial V-shaped patterns centred on multiples of the 44.1kHz sample rate. Higher-order sampling images can enter the audioband directly, otherwise they are only indirectly audible via secondary distortions in the partnering amp.



the Marantz *CD-53*, it treads a finer line between sobriety and anarchy. Nothing at this level is entirely perfect, but the *DP-3060* comes closer than most. It offers a consistently transparent sound, plenty of insight and flawless internals (you wouldn't believe the untidiness of some budget players). As if that's not enough, it offers a generous assortment of facilities: this month's Best Buy is a persuasive package at a compelling price.

The listening day



Each of these CD players was auditioned under strict, blind conditions at precisely matched listening levels. This way the high 2.4-2.6V output of the Pioneer *PD-S503* and NAD 501 could not secure them any advantage over the lower 2.1V of the Philips *CD740* and JVC *XL-V274* or the very low 1.8-1.9V output of both the Denon *DCD-615* and Dual *CD1001RC*.

A broad repertoire of vocal, folk, pop and classical CDs was auditioned before the collective impression of the panel was entered directly into a computer. Sound, value and swing tag ratings were awarded prior to identities being revealed.

As ever, the system included *DPA-100S* pre and power amps plus Audio Note *AN-E* (main) and REL *Stentor* (sub) speakers. Thanks to Tom Barron (Gamepath), Alan Sircom (*Choice*) and Andy Whittle (Rogers) — this month's blind but golden-eared panel.

NAD 501			Philips CD740			Pioneer PD-S503			Sony CDP-312			Technics SL-PG460A		
20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz
0.1dB	0.1dB	0.2dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.1dB	0.3dB
98dB	94dB	91dB	128dB	131dB	128dB	128dB	112dB	91dB	112dB	105dB	79dB	90dB	85dB	69dB
-85dB	-86dB	-84dB	-97dB	-95dB	-78dB	-102dB	-97dB	-84dB	-92dB	-95dB	-69dB	-90dB	-95dB	-78dB
-80dB	-71dB	-75dB	-83dB	-76dB	-65dB	-91dB	-82dB	-67dB	-91dB	-81dB	-68dB	-69dB	-77dB	-63dB
-48dB	-41dB	-47dB	-57dB	-54dB	-42dB	-56dB	-52dB	-36dB	-63dB	-50dB	-37dB	-35dB	-47dB	-35dB
-17dB	-21dB	-22dB	-24dB	-30dB	-21dB	-28dB	-30dB	-17dB	-28dB	-29dB	-16dB	-11dB	-27dB	-17dB
-6dB	-11dB	-9dB	-16dB	-22dB	-10dB	-17dB	-20dB	-6dB	-18dB	-18dB	-6dB	-10dB	-19dB	-8dB
-9dB				-17dB		-16dB				-11dB			-12dB	
No SIGNAL				-6dB		-6dB				-4dB			-7dB	
-0.1dB	-0.2dB		0.0dB	0.0dB		0.0dB	0.0dB		0.0dB	-0.1dB			+0.1dB	0.0dB
-0.5dB	-2.3dB		-0.1dB	0.0dB		-0.2dB	-0.3dB		0.0dB	-0.4dB			+0.3dB	-0.1dB
-1.4dB	-2.6dB		-1.0dB	-0.3dB		-0.8dB	-1.0dB		-0.3dB	-1.3dB			+1.2dB	+0.1dB
+1.2dB	+2.5dB		-0.4dB	+0.2dB		-1.1dB	-0.8dB		+0.1dB	-1.0dB			+1.0dB	-2.8dB
2.567V			2.111V			2.415V			2.006V			2.192V		
2.550V			2.089V			2.395V			1.988V			2.165V		
+2.1dB			+0.4dB			+1.6dB			0.0dB			+0.7dB		
100OHM			1.0KOHM			1.1KOHM			1.14KOHM			786OHM		
7mV@100MHz			8mV@1MHz			27mV@176kHz			13mV@85MHz			<1mVBROADBAND		
+2.0dB			+14.9dB			+6.4dB			+1.0dB			+3.7dB		
-86dB			-98dB			-96dB			-85dB			-98dB		
54.5dB			29.3dB			6.7dB			73.8dB			63.5dB		
-0.1dB			-0.2dB			0.0dB			-0.1dB			-0.1dB		
0.0dB			-0.9dB			0.0dB			-0.1dB			+0.3dB		
+0.1dB			-0.4dB			-1.3dB			-0.2dB			-0.5dB		
101.0dB			118.3dB			111.6dB			102.9dB			100.8dB		
99.6dB			118.2dB			111.6dB			102.8dB			100.7dB		
97.1dB			105.1dB			102.4dB			95.3dB			98.0dB		
NONE			COAXIAL			NONE			NONE			NONE		
+3.7PPM			+21PPM			-19PPM			+17.3PPM			+807PPM		
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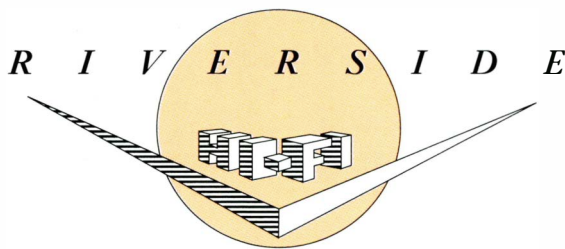
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Deposit **£300**

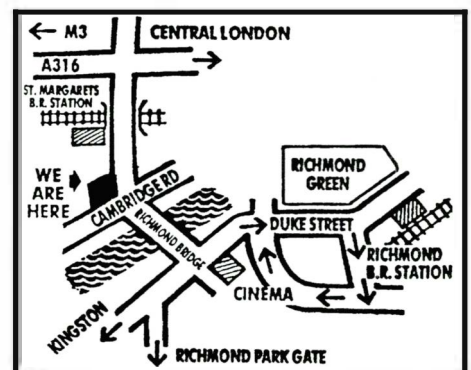
Balance over 20 months

£100 PER MONTH

APR 0%

SUBJECT TO STATUS

OFFER APPLIES ONLY TO THIS SYSTEM AND
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Speakers

The cast list

JPW RUBY 1	£500
KEF Q50	£500
MISSION 733	£300
MONITOR AUDIO MA 202	£450
MUSICAL TECHNOLOGY KESTREL	£250 (PLINTH £30)
PIONEER S4-UK	£250
REGA ELA	£500
TANNOY 633	£320



Left yearning for more after last month's batch, Paul Messenger gets stuck into loudspeakers again.

Following on directly from last month's £500-£800 speakers, we've assembled eight models in the price category immediately below: £250-£500 to be precise. Six are floorstanders; two are much smaller 'bookshelf' models. This is roughly the same mix as we had last month, and further confirmation of how the strong trend towards floorstanders. Though this might be taken as an indication of their superiority over the traditional box-shaped speaker, it is by no means the case. Like most things in loudspeaker-land, different approaches have different ups and downs.

Floorstanders save splashing out on stands and, on the surface at least, more cabinet for the money looks like a good deal — certainly it's a prettier deal. But the large internal volume and awkward shape of the box can prove an embarrassment, while the larger surface area invites panel resonance problems.

Though the price band isn't all that wide, our subjects cover quite a broad

range of alternative sizes, finishes, driver and cabinet configurations. Ironically, the smallest is also the most expensive — and the Ruby 1 is from the king of budget miniatures, JPW. Happily it's also the prettiest, and is clearly aimed at the luxury miniature sector. A metal cone main driver means that it is competing with such models as the Acoustic Energy AE1 and Monitor Audio Studio 5.

At less than half the price, the Musical Technology Kestrel is the only other all-metal-diaphragm model on test. This unusual floorstander comes from a new company and is full of imaginative details, at a highly competitive price.

Also at £250, but needing stands, Pioneer's S4-UK is aimed primarily at the audiophile-on-a-budget. First reviewed a couple of years back, with mixed results, it gets a return visit after further main driver refinement.

Mission's 733 is remarkably large for a £300 speaker — and remarkably good looking too. Whether perceived value translates into top-notch performance is for the review to establish.

Tannoy's 633 (£320) looks equally impressive in value terms, any saving in the more compact box being justified by the extra main driver. It's also the only

Every loudspeaker has a distinct frequency balance that says much about how it will sound. This sonic 'fingerprint' shows which parts of the audio range are emphasised and which are short of relative output level.

To simulate relevant 'real world' conditions, the measurements are made of a stereo pair in the actual (largish) room in which the listening tests are undertaken, using a far field technique averaged across seven microphone positions (after Colloms). The speakers are sited close against a rear wall and a metre out into the room; intermediate positions normally produce intermediate degrees of midbass reinforcement.

A flat straight line isn't expected — the main room modes create unavoidable ups and downs at the low frequency end, but the trace should be as flat and smooth as possible. Gentle variations are preferable to sharp discontinuities; prominences tend to be more irritating than dips; and a gentle high frequency roll-off usually sounds perfectly acceptable.

The sensitivity of a loudspeaker is a guide to how loud that speaker will sound for a given amplifier volume control setting. Our deliberately conservative figure is averaged across the broad midband. A 3dB increase in sensitivity means that the speakers will sound twice as loud for the same volume control setting of the same amplifier.

The snag is the impedance. For the same volume control setting, a 4 Ohm loudspeaker will actually be drawing twice the current (and hence power) as an 8 Ohm design, so to get its sensitivity in true electrical energy conversion efficiency terms you need to subtract 3dB.

sealed-box system in our group, the overall configuration looking similar to that of the Linn Keilidh (last month).

Monitor Audio's £450 MA202 is rather larger, with just a single main driver. It's a close relative of the 201, substituting a damped ported floorstanding enclosure for the latter's bookshelf box. Both models recently had hefty price rises.

Rega also has upped the price recently of the long-established ELA (now £500), at the same time improving the presentation of this trendsetting floorstander, which uses a folded transmission line to assist bass output of a tiny main driver.

KEF's £500 Q50 is really two smaller, differently sized ported enclosures in one, the upper section driven by one of the company's full range Uni-Q drivers.

Our selection shows considerable variation in design and configuration; this is reflected in a range of distinctive flavours in the art of reproduction.

JPW RUBY 1

JPW is the Big Cheese in budget British hi-fi bookshelf speakers, with a whole range of highly competitive 7- and 14-litre models to suit every distribution chain, many with Best Buy and Recommended flags from previous *Choice* encounters.

The *Ruby* series, however, is something completely different. This is a collection of four altogether more upmarket speakers: two stand-mounts and two floorstanders, priced from £500 up to £1300. The name comes from the colour applied to the main driver's metal cone during surface anodising; the model under scrutiny here is the smallest of the quartet, the £500 *Ruby 1*.

That's a lot of money for a tiny little two-way speaker, though to be fair there are plenty of other contenders entered for the best and most beautiful baby competition, including several

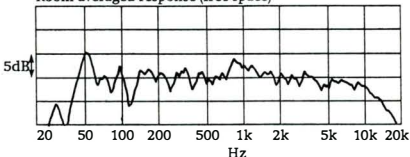


LAB REPORT

The *Ruby 1* fits the luxury miniature stereotype pretty closely. The little peak around 900Hz perhaps gives JPW a faint excuse for its 87dB sensitivity claim, but broad-band, and in relative far-field loudness terms, a lowish 84dB is much closer to reality. Still, the amplifier load is easy, and bass extension quite respectable for such a small unit, registering -7dB at 30Hz in-room, thanks in no small part to the generous contribution from the 50Hz-tuned port.

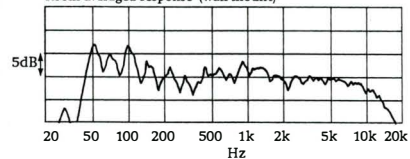
Output is just a shade strong here, but the balance is generally very well behaved, the minor departures from neutrality being a slight forwardness in the upper mid (800Hz-1.5kHz), and an early treble roll-off above 10kHz. Comparison of the room curves implies free-space siting should give the best balance, though some wall reinforcement will do little harm.

Room averaged response (free space)

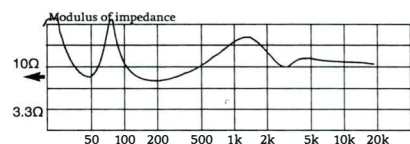


An unusually smooth and well-balanced trace, punctuated by a little peak centred on 900Hz.

Room averaged response (wall mount)



Not quite as smooth close to the wall, and a little midbass heavy too, but still quite acceptable.



An apparently easy load from the current demand point of view, but quite a complex one too.

examples costing significantly more. Indeed, for those prepared to forego serious bass slam and high loudness capabilities, the 7-10 litre miniature format offers some significant advantages, over and beyond the obvious aesthetic bonus.

The *Ruby 1* may be the smallest and also the lightest of our test group, but it's certainly no featherweight. Feel free to calculate the kilogram-per-cubic-metre densities from our table if you like, but I reckon it tops the list in this respect, which is at least evidence of solid build (as well as a small enclosed volume, of course).

From the outside the cabinetwork is outstanding, a top quality real-wood veneer covering all six faces, with nicely radiused edges around the baffle and back, and carefully rebated drivers. Digging beneath the pretty skin reveals a number of the expected luxury engineering touches, like the high-power-handling crossover and heavy duty internal cabling, all solidly hard-wired. The drivers are both bolted in place too, albeit with a little slack, and the main driver magnet is as big as the 90mm metal cone — good for electromagnetic control, less so from the point of view of occlusion and acoustic reflection. However, I'm surprised not to find a cast driver frame (helpful for reducing occlusion, as well as improving rigidity), and I noted that the bi-wired crossover network is a pretty complex affair, which rather goes against current audiophile trends. The box has chunky 20mm-thick sides, with just a thick foam lining for damping. The tweeter used here is a good-quality 25mm metal dome, and a kosher grille is supplied for those who don't want to show off the shiny red cone and properly veneered baffle to all and sundry.

Sound Quality

As with so many of this group, the panel delivered a mixed verdict on the *Ruby*. Two came out strongly in favour of its excellent balance and fine imaging, the other four reacted negatively to its bass and dynamic limitations.

All speakers represent a mix of compromises and trade-offs, and those encountered with the *Ruby 1* are hardly unexpected, given past experience with models adopting similar outline configurations. Box coloration here is impressively low — the natural consequence of there being a relatively small surface area to add unwanted tonal shadings.

However, the bottom end is never entirely convincing, less for the lack of weight than for its rather thumpy, lumpy character, which lacks drive, consistency and sometimes control. The smoothness of the overall balance also tends to highlight the small upper-mid peak (quite possibly a reflection from the large diameter magnet), giving a forwardness and explicitness which some found more welcome than others. One listener liked the detail projection, another the extra 'bite' on brass instruments — but others referred to hardness and a rather abrasive and gritty quality.

Conclusion

Against other all-metal-diaphragm miniatures (eg Acoustic Energy *AE1*, Monitor Audio *Studio 6*), the *Ruby 1* seems a very competitive prospect. In strict comparison with the other models in this

group review, it does look rather expensive, mind, especially when the extra cost of adding good quality stands is taken into account. On the other hand, it's the smallest and prettiest by comfortable margins, two important factors in any purchasing decision.

VERDICT

- ▲ **Luxury miniature has fine overall balance and good detail projection.**
- ▼ **Pricy, and can sound a shade hard. Bass and dynamics not entirely convincing**

SOUND ★★★★★

VALUE ★★★★★

PRICE £500

✉ JPW Loudspeakers Ltd,
Ocean Quay, Richmond
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PL1 4LL.
☎ (01752) 607000

KEF Q50

Despite the fact that it has undergone numerous business and management changes over the past few years, KEF has ensured that its products have maintained gratifyingly consistent engineering and presentation. It's possible therefore to track back the evolution of this £500 Q50 through several generations of similar predecessors. The third model up a four strong range which also includes the slightly smaller floorstanding £360 Q30 (issue 126), it has a driver line-up quite similar to the large bookshelf size stand-mount Q60 from three years back (issue 102) — further evidence of the way bookshelf models are evolving into floorstanders.

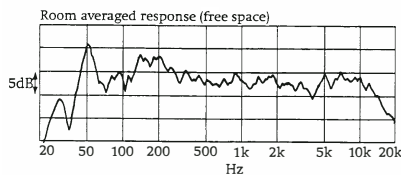
The Q prefix is important. Theoreticians will recognise this as the symbol for directivity, and it

LAB REPORT

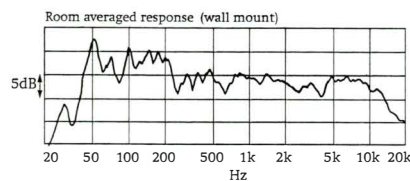
The Q50 offers decent sensitivity (c88dB/W across the main midband) alongside a reasonably easy amplifier load, but sub-40Hz bass extension is relatively limited.

Interestingly, the difference between free space and close-to-wall siting is much less obvious than usual, but sadly the balance is altogether too rich in the bass, whichever position is adopted. Part of the difficulty lies in the fact that the (very well damped) ports are tuned to 50Hz, coincident with a main room mode, but output in the 100-200Hz octave is also clearly too strong.

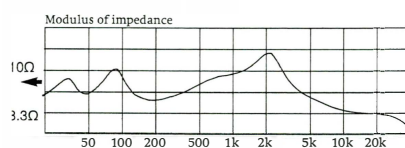
Further up the band the midrange is well balanced if a little uneven and recessed, while the treble is a little stronger than average. The overall mid-to-treble section of the spectrum is pretty well ordered, the slight lack of output 2-5kHz likely to confer a mildly laid back effect.



Output is clearly too strong in the upper bass, and slightly so through the treble too.



Close-to-wall siting leaves the whole bass region several dB ahead of the rest.



Amplifier current demands are not excessive and reflex porting system looks well damped.

is the smooth control over this factor which is an integral part of KEF's Uni-Q driver technology. Co-axial drivers which place a treble unit in the middle of the main driver are not themselves a new idea, but KEF's application uses a tiny super-powerful neodymium alloy magnet to make a tweeter small enough to fit onto the pole-piece of the main driver. By working out the geometry involved, it's possible to make the acoustic centres of the two drivers coincident around the crossover point, and thereby achieve an exceptionally smooth transition between them.

The Uni-Q story is worth telling, and helps provide some explanation for a price at the top of our group range. You get a decent-size box, and subtle styling which is unusually demure and self-effacing, but none of the real wood finish found on the other five hundred pounders here. Instead you get a charcoal grey textured vinyl which should at least blend in well with your TV set. The AV link is further emphasised here by the fitting of magnetically shielded drivers — but in practice the main left/right speakers of a hi-fi/AV combination system really ought to be far enough apart to leave plenty of room for a TV set in between, without causing magnetic colour disturbance even sans shielding. Only dialogue speakers really need the treatment.

There are two main drivers here, the upper a full range Uni-Q device, the lower one being used to augment bass and lower midrange output. Both have 110mm plastic cones, decent-size magnets and pressed frames, held in place by three reasonably tight woodscrews and disguised beneath plastic trim which renders the twin moulded frame grilles an aesthetic option.

The floorstanding box, built up from 16mm chipboard, is actually two separate enclosures on top of one other. The smaller, upper one is ported at the front; the larger, lower one is ported to the rear. Both have thick absorbent lining. A single terminal pair is tag-connected to the drivers via a fairly complex crossover.

The moulded plastic plinth looks attractive enough, but attempting to fit the spikes proved very tricky, because tightening lock-nut against washer tends to pull the threaded insert out from the moulding. Having broken one plinth I took extra care with its replacement, but still lack confidence, and wonder whether the moulding shouldn't be shaped so that the washer sits flat against the insert.

Sound Quality

This was the one speaker in the group to receive a pretty unanimous verdict from the blind listening tests. Unfortunately for KEF, the thumbs



were all below the horizontal, and some of them pointed straight down. There was almost universal criticism of both the quantity and quality of the bass, and not a lot of compensating enthusiasm elsewhere.

The somewhat recessed midband actually sounds quite open and coherent in itself, but the treble was criticised for a slightly scratchy and rough quality, all the more noticeable because it comes through quite strongly too. The seated panel naturally remained unaware of the Uni-Q driver's ability to preserve good consistency when moving in the soundfield. This is certainly a worthwhile bonus, but not really adequate compensation for the limitations elsewhere.

Conclusion

Uni-Q benefits notwithstanding, the Q50 looks on the pricey side for the package on offer. The over-rich and heavy balance was a significant

factor in the indifferent listening test findings, but what might be less than ideal for stereo music replay could well prove highly effective with AV programming, where a ripe and fruity bass is generally reckoned to give the best results.

VERDICT

- ▲ Demurely discreet, to blend in with your TV. Uni-Q driver gives good consistency
- ▼ Fat mid and upper bass is better suited to AV applications

SOUND ★★★★★

VALUE ★★★★★

PRICE £500

✉ KEF Audio (UK) Ltd,
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MISSION 733

Having missed the launch of Mission's new 73-series of high-value, vinyl-clad boxes amid the cacophony of Live 94, I was quite unaware of the price of this generous and very attractively presented floorstander. My first guess was somewhere between £350 and £400, leaving me very impressed to discover that the 733's asking price is actually only £300 — a price/bulk ratio which ensures that it enters the marketplace with a well-honed competitive edge.

A budget vinyl box it may be, but the 733 is dramatically better-looking than its Mission predecessors, and more than a match for anything around at anywhere near the price. Much of this is due to the clever way most of the edges have been rounded off, giving a

softer somehow friendlier appearance than that of most large budget floorstanders.

The other neat styling device is a plastic sub-baffle, held by eight tight woodscrews, which clamps over the main driver to hold it in place, and also fixes through the mechanically decoupled tweeter faceplate, keeping everything looking very tidy. A second and more dramatic moulding adds a very large port, complete with a built-in vane which is designed to minimise turbulence.

The box shape looks sensibly arranged to provide a decent stability footprint, with the drivers well off the deck. And I was particularly pleased to discover that Mission has changed the sockets into which the spikes are mounted. These no longer spin in their holes as soon as one attempts to tighten the locknuts, which was all too often the case with earlier Mission floorstanders. The new ones are not exactly over-engineered, but do at least feel capable of taking rather more torque than necessary to remove the skin from rice pudding, and so should continue to keep the support stable and secure over the long haul.

The main driver has a 120mm clear plastic cone, a pressed-steel frame and a decent size magnet, but the tweeter, known as a 28mm composite laminated ringdome, seems a rather feeble affair, mechanically and magnetically. Acoustically speaking this box is not as big as it looks, as the lower 30cm or so is blanked off by a shelf, which also serves to stiffen the four long panels. My rough calculations give an actual enclosure volume of less than 25 litres — less than Mission's claimed 35 litres and not much more than a traditional large bookshelf size model (but avoiding the need for some separate means of support, of course). One consequence is that the terminal block is placed a third of the way up the back, making it that much more difficult to conceal the wiring.

The box itself is pretty solidly built, with a further brace between the sides up behind the main driver, and pretty substantial 19mm chipboard panels throughout. Internal damping is confined to just a single sheet of foam, lining the rear panel, and a foam ring around the outside of the port. A simple three-element crossover is built into the back of the bi-wire terminal block.

Sound Quality

Sonically this is a 'quite' speaker — it does everything quite well, though nothing exceptionally so. Two separate presentations gave a reasonable degree of overall

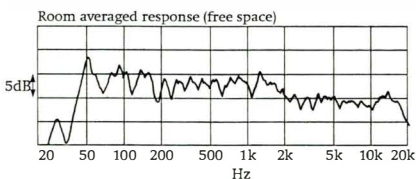


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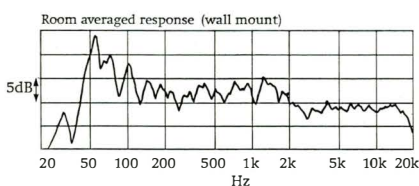
The combination of only average sensitivity (87dB/W) and modest bass extension (-6dB at 40-45Hz in room) is compensated by a load which should make the amplifier's life easy — a more than fair exchange.

Close to a wall, the midbass (50-100Hz) is much too strong, but in free space the 733 balances out pretty well. The bass region is about 3dB above the broad midband, true, and the 50Hz room mode (coincident with the port tuning here) a couple of dB stronger still, which is not ideal but should be acceptable.

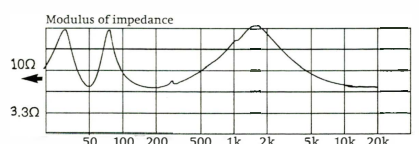
The midband shows a sharp discontinuity at 1.1kHz, also seen as a blip on the impedance graph, and probably a function of cone/surround termination. It peaks up a shade at 1.3kHz before tailing off by about 5dB into a flat-ish treble, which itself peaks up slightly at 12-14kHz.



Balance works exceedingly well when clear of walls; note that the glitch at 1.2kHz coincides with an impedance blip.



Bass becomes horrendously heavy if speaker is placed close to a wall. Good general control is interrupted 1-3kHz.



An easy amp load, but note how the small 1.2kHz blip (probably a cone termination effect) is reflected in the balance traces.

consistency, and a generally positive reaction, albeit with some equivocation.

The bottom end works rather better than the measurements might suggest, conveying reasonable impressions of weight and scale. There's also a measure of agility, provided the speaker is kept well clear of walls. This in turn gives the midband plenty of room to breathe, bringing both spaciousness and clarity to voice reproduction.

That said, the upper mid/presence does sound a bit compressed and shut in, and the treble is not very nice at all, imposing firm limits upon the attainable delicacy and transparency. Dynamics aren't too exciting either, but the whole hangs together and times well, even if it doesn't sound quite as big as it looks.

Conclusion

Great styling and a very large box for the money makes the 733 a compelling showroom proposition. The sound may not quite measure up to expectations, especially in the treble, but it remains such a fundamentally well-balanced and well-judged all rounder, at such a sharp price, that a Best Buy rating is appropriate.

VERDICT

▲ A beautifully presented big box at a surprisingly modest price. Good value.

▼ Doesn't sound as big as it looks; treble sounds a bit tacky.

SOUND ★★★★★

VALUE ★★★★★

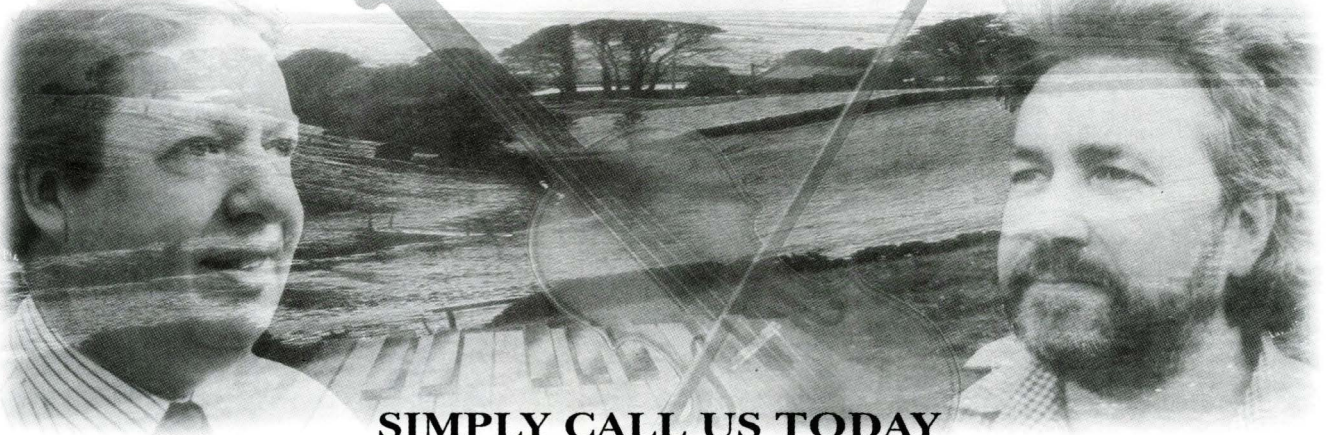
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MONITOR AUDIO MA202

The decidedly modern MA201 was included and Recommended in the speaker tests of issue 135, and it's hardly surprising that this £450 MA202 has a lot in common. The business bits of both are more or less identical, the differences lying in the boxes which enclose and support a common baffle/driver array. Whereas the 201 is a smart bookshelf design, this larger 202 is a good-size floorstander.

What's disappointing is that the prices of each have recently been jacked up by £50, representing substantial increases of 20 per cent for the 201 and 12.5 per cent for this 202 — products which had only been on the market for about eight months. I can't believe that someone pushed the wrong buttons on the calculator when initial costings were carried out, and those

percentage increases are way over inflation. Could this be another example of launching at a price low enough to garner a collection of favourable reviews, then cashing in with a price rise? At £300 the 201 would have struggled to reach Recommendation.

Initial impressions were that the 202 wouldn't find it easy to justify £450 either. It is the biggest and heaviest in the group, which goes some way down the road, but there's just the one main driver, and the finish is resolutely woodgrain vinyl, even though a decent example of the breed. Styling is traditional with sharp box edges, and everything feels very solidly built. Some gilt styling embellishments add a touch of *je ne sais quoi*, and high-tech plastic moulding techniques are an integral part of the important bits.

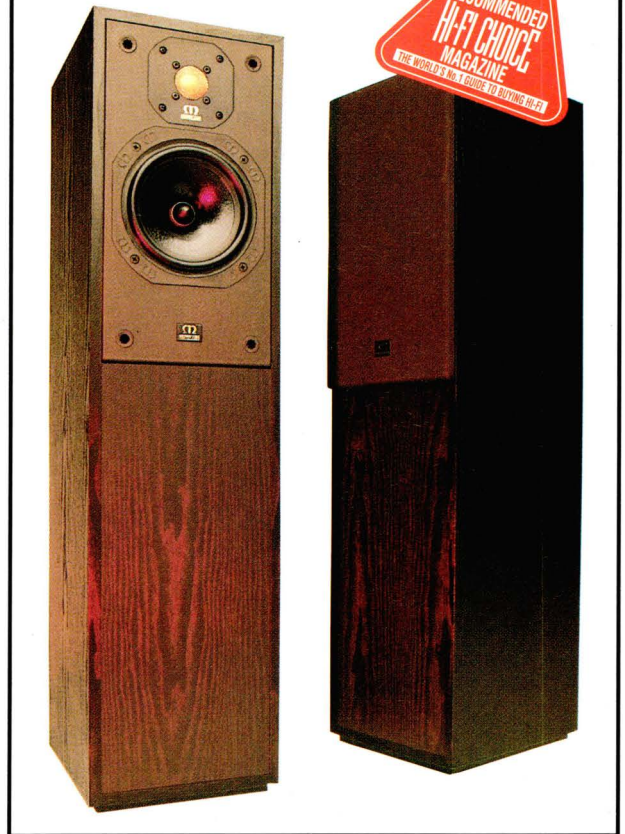
The baffle is made from structural plastics, while the main driver also uses a substantial moulded plastics frame, along with a big magnet and 115mm doped paper cone. A 'plastic bullet' extension to the central pole-piece provides some phase compensation effect at the top of its working range. The tweeter is one of MA's classy gold-anodised alloy domes, well protected under a gilt mesh. Both driver frames fit flush with the front, held by tight, coarse-pitch screws.

The box is built from substantial 20mm chipboard, with a generous port down low at the rear. Inexplicably, the bi-wire terminal block is quite high up on the back, ensuring that trailing loudspeaker cables will be well and truly visible. The interior of the cabinet is left almost entirely undamped, apart from a sheet of BAF-type wadding and another of foam, which sit over the large ventilation holes in the uppermost of two hefty cabinet braces. This interposes a considerable acoustic resistance between the upper cavity and the lower ported two-thirds, heavily damping the reflex operation.

The whole thing is built onto an integral MDF plinth, and proper gripping screw inserts are fitted from above, ensuring the spikes may be fitted really tightly without problems (and re-tightened occasionally, as the MDF has a tendency to compress under load).

Sound Quality

Somewhat paradoxically after the slightly disappointing results from the 201, the 202 fared well in the listening tests, less through the overwhelming enthusiasm of any particular panelists, more from a near consensus that this was one of the better all-rounders, thanks to



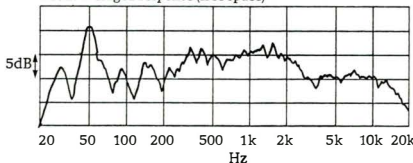
LAB REPORT

The similarities between 202 and 201 are strong, but there are differences nonetheless, the impedance graph showing subtle changes in the crossover network, and significantly greater damping in the reflex porting system.

Despite the latter, the in-room balance is dominated by output from the port (tuned at 40-50Hz), while upper bass/lower mid output is distinctly lacking irrespective of siting. Free space looks the better option here, but there seems little likelihood of achieving ideal bass alignment. The upper mid is rather forward, but well maintained to above 2kHz, prior to a rather conservative relative treble level with a smooth and well-extended characteristic. The net result is unlikely to score highly for neutrality.

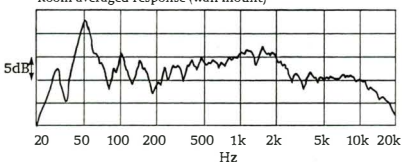
Sensitivity is a decent 88dB/W, the amplifier load is easy, and there's reasonable bass extension.

Room averaged response (free space)



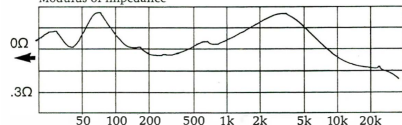
Bass and treble are a bit detached but the forward midband shows good coherence up to 2kHz+.

Room averaged response (wall mount)



Close-to-wall siting leaves the bass bump even more exposed than free space positioning.

Modulus of impedance



An easy amplifier load with a well-damped ported system, but note the odd midband glitches.

good vocal projection, a decent sense of scale and some dynamic verisimilitude. "Easy to listen to for long periods", as one panelist put it.

The down side is a rather 'thrummy' bass character — good scale, yes, but also a tad slow and slightly 'one-note' in character. Then there's the top end, which is just a little shut in, while the treble proper is clean and sweet, if a little exposed. To some extent it's a matter of balance, inasmuch as the bass and treble don't quite match the unusually informative midband. Since the latter is a little projected it dominates the attention, leaving the extremes to enhance the overall presentation.

Conclusion

I'd almost talked myself out of Recommending the 202, largely through irritation with the recent

VERDICT

- ▲ **Easy listening floorstander has generous scale and attractive vocal projection.**
- ▼ **Not the most neutral around: bass has one-note tendency; mid is projected. Pricey.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £450

✉ Monitor Audio Ltd, Unit
34, Clifton Road,
Cambridge CB1 4ZW.
☎ (01223) 242898

price rise. But if material value is unexceptional, the sound is sufficiently ingratiating to carry the day. That the midband is essentially coherent right up to the far side of 2kHz is, I suspect, an important factor contributing to its unusually believable vocal rendition.

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MUSICAL TECHNOLOGY KESTREL

Before receiving the *Kestrels* I'd never heard of Musical Technology. That isn't too surprising, though, as the company was only founded in September 1994. The literature that comes with the speakers is well written and well presented, giving an impressive pedigree for the two principals involved and some serious background information on the speaker itself.

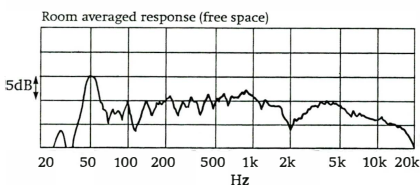
Clive Gibson has spent 15 years in speaker design, most recently with TDL (one reason why both the £250 *Kestrel* and the £1400 *Eagle* are floorstanders); partner Martin Nobbs spent a similar stretch at the BBC. The two models, with their vastly different prices, define the extremes of MT's immediate aspirations, and a *Harrier* is imminent (followed presumably by *Peregrines*, *Goshawks* and the like in due course).

LAB REPORT

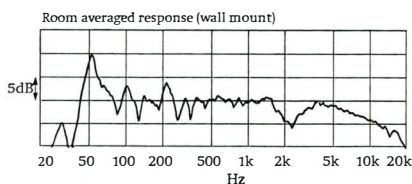
Low sensitivity is the most obvious characteristic of the *Kestrel*. One logical consequence of the small main driver and enclosure is an 84dB rating, 3dB below average but happily uncompromised by the impedance characteristic.

Bass extension is hardly spectacular, but is actually a touch better than the group average. This is partly because of the rather over-enthusiastic output at 50Hz, which, in turn, is mostly down to the port. Positioning is therefore difficult, wall reinforcement usefully assisting the upper bass but exaggerating 50Hz still further, whereas free space leaves the upper bass rather lean.

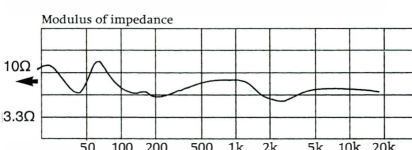
The broad midband balance is smooth and even, especially 150Hz-1.5kHz, and the treble looks smooth and very well judged. Not unusually, the presence region is the main problem area, with a 5dB notch 1.5-3kHz.



Overall balance is pretty smooth through the midband, but 50Hz is rather prominent and 1.5-3kHz recessed.



Close-to-wall siting, as recommended by the manufacturer, fills the upper bass nicely but exposes 50Hz at +8dB.



Amplifier current demands look fairly modest, but the trace indicates a complex crossover network.

To build a compact floorstander to sell at under £250 is not bad going in itself, but to create one that looks as interesting as this, and has as many classy extra ingredients, is a thoroughly impressive achievement. Check out the real-wood top surface with its heavily bevelled edges, the metal-cone main driver and dome tweeter.

In terms of both enclosed volume and main driver diameter, the *Kestrel* is one of the smallest floorstanders around. The most obvious commercial reference points are perhaps the Royd *Minstrel* or Rega *EL8*, though it's equally valid to regard the *Kestrel* as a near-miniature which doesn't need a couple of chunks of ironmongery.

Somewhat reminiscent of a cute variation on the Tannoy *Sixes* theme, the enclosure is actually a pentagon in cross section. Its very compact dimensions and attractively finished top-plate make it a very attractive speaker. The advantage of a semi-regular shape such as this over a conventional rectangular section box is that internal reflections are better dispersed, while non-parallel faces help avoid focusing internal standing waves.

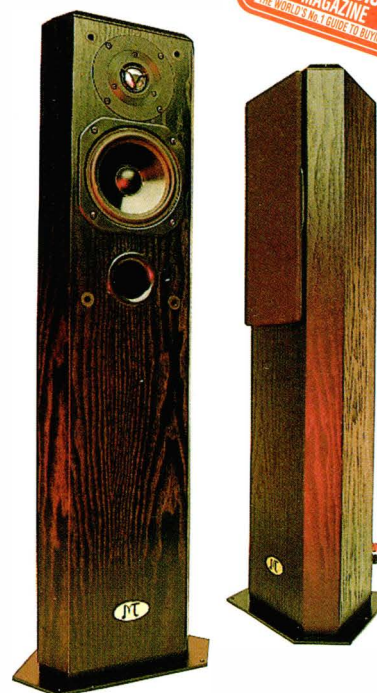
Creative detail engineering is very much in evidence. The top section of the enclosure is quite heavily damped, by foam and fibre lining, ensuring some resistive decoupling from the undamped section extending from the large front port downwards. Internal wiring is enamelled solid-core, fed from a single and slightly vulnerable looking terminal pair sticking out the back apex, low down near the floor.

The chunky 15mm MDF box panels are finished in black vinyl woodprint, with imitation burr walnut a straight option, or real wood throughout at a hefty premium. The drivers, fixed by well-tightened woodscrews, comprise a good quality 25mm metal dome tweeter with protective phase compensator, and a main driver with a pressed frame (complete with little foam pads on the inside of the frame), a small double magnet (confering some magnetic shielding) and a 90mm aluminium cone which is significantly more flexible than others I've encountered.

Build seemed generally very good apart from one or two detail teething problems: the stand plate took a while to fit, and the grille frames quickly disintegrated. (A properly engineered grille should be ready by the time this appears in print, I'm informed.) A heavy metal plate (a £30 optional extra) provides secure spike fixing but not a particularly generous footprint.

Sound Quality

On a majority verdict the panel voted in favour of the *Kestrel*, two members recording very positive first reactions: "lively and interesting" and "engages the senses immediately". Limited bass extension and power does leave the sound a bit short of scale, but what there is seems well timed and articulate, driving the music rather than booming along in its wake.



The midband is open, clear and coherent, with plenty of detail and good instrumental separation, but the presence dip does detract from the overall openness, leaving everything a little shut in and conservative — not necessarily such a bad thing for a speaker likely to partner all manner of budget amplification.

The narrow and carefully shaped enclosure certainly helps minimise boxy effects, but several panelists commented on rather flat and uninspiring dynamics, and two complained of a slightly 'pitchy' treble.

Conclusion

The use of all-metal diaphragms is no automatic guarantee of high quality. Like everything in loudspeaker-land, there are positives and negatives at work, and the trick of a successful design is to accentuate the former while

disguising the latter. This the *Kestrel* accomplishes rather successfully, in a most ingenious and well-thought-out overall package that deserves Best Buy recognition for bringing the metal diaphragm entry price crashing down.

VERDICT

▲ **Clever package looks good and sounds both smooth and agile at a modest price.**

▼ **Limited scale and volume; dynamically challenged**

SOUND ★★★★★

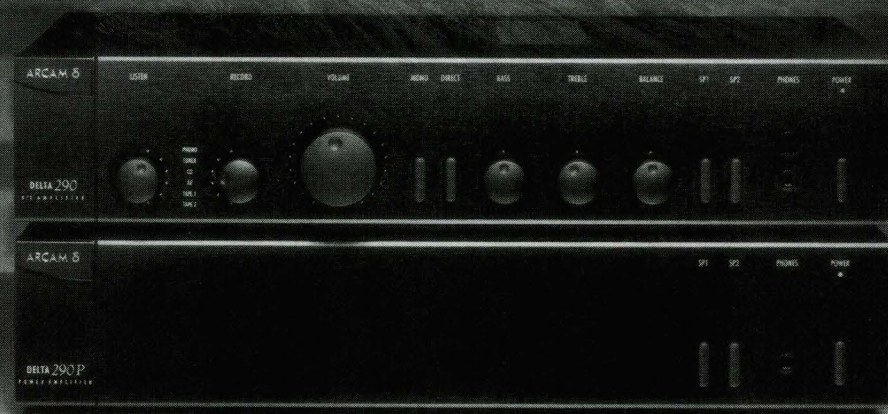
VALUE ★★★★★

PRICE £250

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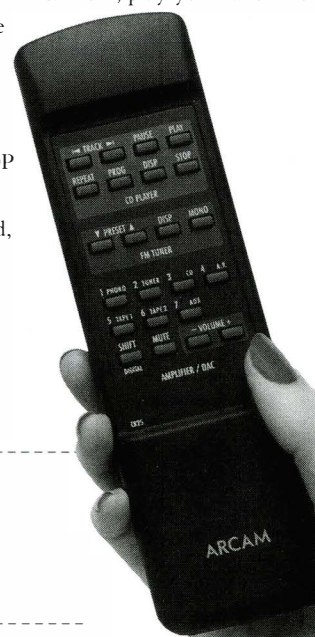
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(The Handi-Remote shown is now supplied as standard with the Delta 290.)

PIONEER S-4UK

To all outward intents and purposes, there's no apparent difference between the *S-4UK* reviewed a year or two back (issue 122), and these new samples of what purports to be the same loudspeaker. Which is perhaps as it should be. All too often marketing-led companies — and an operation the size of Pioneer must certainly be that — seem to indulge in change for change's sake, in the rather cynical but regularly justified assumption that a bit of hype is always worth having.

Loudspeakers are perverse and complex affairs, though, and getting a good result while changing several variables at once is a tricky task. It is therefore rather gratifying to find Pioneer simply adding a little refinement and development to a brew which was already well

down the road to offering something special, even if our original samples did fall short in certain important respects.

The *S-4UK* is already something of a peculiarity in Pioneer's world marketing strategies. Built in Spain but obviously conceived as an audiophile speaker to partner the

successful UK-oriented *A-400* series of amps, it has done less well than hoped over here — but a Japanese-made version has become a stonking success back in Tokyo, doing much to create a new-to-Japan 'budget audiophile' trend. And having heard (and measured) the modification which has been incorporated in production of its quite unusual main driver since May 1994, it was clear that a return visit was necessary.

In every other respect the mixture is as before, the *S-4UK* being a discreet and somewhat nondescript medium bookshelf size box, a little narrower than it is deep, that uses the almost ubiquitous two-drivers-plus-port arrangement. As before the crossover is ultra-simple — just a single capacitor protecting the 26mm fabric dome tweeter from bass overload. The main driver has a very light 100mm paper cone with good size magnet and pressed steel frame, and is tightly bolted in place.

Apart from nice chamfering around the baffle edge, plus careful rebating of the driver frames into the baffle surface, all is very plain, vinyl wrapped outside, and lightly — but painstakingly — damped inside. There's a sheet of light BAF-type wadding covering the back panel, a thick woolly mat over two-thirds of the base, and a little thin felting over part of the port inside — clearly the work of an obsessionist! The box itself is built from 19mm chipboard, and a single pair of gilt terminals adorn the rear.

Sound Quality

I'm a little ashamed to admit I got it completely wrong in the blind tests; fortunately the majority of the panel overruled me, correctly pointing out what a nice little speaker this has become. I know that now because I get to play with the speakers for several days after the formal listening sessions, which gives the underlying qualities of a speaker much more time to seep into the subconscious, and under this regime the *S-4UK* really did get under my skin.

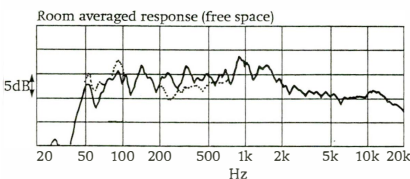


LAB REPORT

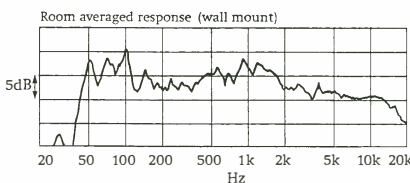
The main problem with the original *S-4UK* was a dramatic output plateau in the upper midband. That forwardness (900Hz-1.6kHz) still remains, but the relative output in the preceding two octaves is now 2-3dB stronger, so the plateau is altogether less obviously exposed than before.

It remains an obvious feature, as does the very limited sub-50Hz bass output, the port here tuned to a highish 60Hz, sacrificing extension but exerting more control over the natural 70Hz driver/box resonance. 88dB sensitivity alongside an easy-to-drive load is a further bonus.

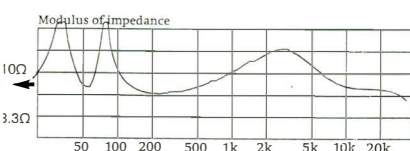
Comparing the room curves suggests placement about 1-2ft from the wall is likely to give the best overall bass alignment. Note also that output falls 4dB between 1.5 and 2kHz, which will help avoid aggressive effects but also leave the sound a little 'shut in'.



Compare current version (solid) with the dotted trace (issue 122), and note how the balance has been flattened out.



Some wall reinforcement could be helpful here, but don't overdo it. Balance is very reminiscent of typical miniature speakers.



An easy amplifier load, the lively port here is tuned to a highish 60Hz.

It's still flawed cosmetically, with some mid forwardness prior to a shut-in treble. This isn't immediately appealing but might well help put an acceptable face on budget CD and amplifier signals. It is also unable to deliver serious bass slam or high levels. But within such constraints the sound is attractive — lively and full of detail, delivering fine musical tension across a broad and coherent midband. A little of the over-lean and forward character of the original is retained, but the latter's more unpleasant consequences have been most effectively tamed.

Conclusion

It only goes to show how finely balanced a speaker design can be. The original *S-4UK* was a disappointment when launched eighteen months ago, but a small change to the main driver finds it vying for inclusion in the Best Buy lists. It's a great enthusiast's speaker — though Pioneer is by far the biggest company represented here — and shows just how good a bookshelf shape/size model can sound against the floorstanders in terms of midband delicacy and brio.

Above all, it avoids the thick'n'heavy trap that afflicts so many larger bookshelf models.

VERDICT

- ▲ **Communicative and agile; highlights the advantages of the bookshelf format.**
- ▼ **Treble shut in, bass and volume both limited. Nondescript presentation.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £250

✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough SL2 4PQ.
☎ (01753) 789789

The Pioneer has all the charm of the best selling 7litre babies, but with altogether better dynamics, life and sensitivity. Ultimately, it remains a little on the expensive side for Best Buy status considering the ingredients, but a Recommendation is quite clearly appropriate.

REGA ELA

Rega's *ELA* speaker dates back to 1989 and was already well established at the time of our original review nearly three years ago (issue 110). With changing trends in loudspeaker design, the wisdom of hindsight shows clearly what an important trendsetter this compact floorstander has been.

Knowing that there had been some interim driver changes, and having rediscovered how good that original (sub-£500) model could sound against the nine £500-£800 models covered last month, I was already keen to undertake a repeat review. The discovery that a new-look *ELA* was about to be launched was a perfect excuse. If only I'd anticipated the saga that developed...

The new version now costs £500, for the very good reason that it's a much prettier looking

package, finished in either black ash or sustainably harvested rosewood veneer. The original *ELA* had its own form-follows-function asceticism, but the positive reaction to its upmarket *XEL* taught Rega that customers were happy to pay a premium for classy presentation — and preferred that class to take a fairly traditional form. The clever wire-frame grille is retained for cost reasons, but the neatly foolproof tripod frame base is replaced by a more conventional (and stable) quadruped arrangement, two metal rails providing a secure platform for rather thin spikes. The new baffle is a beefed-up two-section *EXL*-style affair with elegant chamfering.

The front panel leans backwards a few degrees, and the enclosure is subdivided (and stiffened) by an internal panel which creates a transmission line loading for the main driver — a long, folded, tuned column terminated in a large port at top rear, and internally damped by carefully placed long-haired wool. The main driver is similar to that used in Rega's other models, with a classy cast frame and small gomm paper cone. The tweeter has a 19mm fabric dome, and both drivers are securely mounted to the thick baffle, then hard-wired to a minimalist crossover and single terminal pair mounted conveniently close to the floor.

Rega rushed me the new *ELA* just in time for inclusion, but I became suspicious that they sounded (and measured) significantly brighter than before — altogether too bright, in fact: an observation amply confirmed by the listening tests. The penny dropped a day or two later when I noticed that the treble section of the *ELA*'s pen charts exactly matched those of the *XEL* (issue 132). Someone had fitted the wrong tweeters — or as it turned out, the tweeter manufacturer had mislabelled a complete batch. The aberrant drivers were immediately changed, but only after the blind listening day had passed.

Sound Quality

Despite losing marks because the 'wrong' tweeters only tended to emphasise the rather lightweight bass, one panelist being particularly critical, the *ELA* still won plenty of praise for its unusually lively, coherent and open midband, its fine overall agility and entertaining dynamics.

Fitting the correct tweeters markedly improved the overall coherence at the top end, though this part of the spectrum is still a shade obvious — this version of the tweeter sounding perhaps a little less sweet than the *XEL*'s. The



overall lack of weight remains the most significant compromise in this design, a fact which might be less obvious in a smaller room. At the same time the freedom from heavy, thickening effects is its own reward: the sound remains determinedly lightweight, but the information content and communication thereof is invariably high class.

Conclusion

Although the tweeter shenanigans mucked up the listening test findings, and the overall sound will always be a little too lean and bright for some tastes, the *ELA* is undoubtedly an exceptional speaker for the price. The latest incarnation is prettier and smoother than its predecessors, and its superb midband communication skills would seem more than

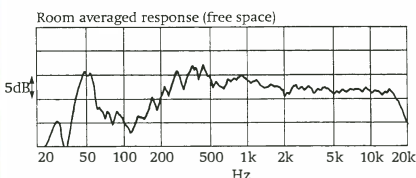
fair compensation for the lack of weight. Assuming the Goods Inward and QC blunders were an isolated aberration, it's an obvious Best Buy in the right system context, but is probably better suited to an average size than a large room, and should certainly be auditioned prior to purchase.

LAB REPORT

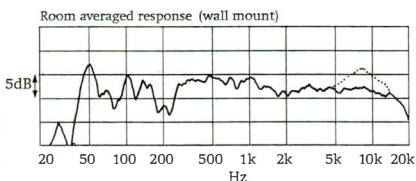
Despite the main driver change, the current *ELA* is very similar indeed to its predecessor — a shade lighter in the bass but a smoother and flatter through the midband and much more so through the treble (with the right tweeter).

Clearly intended for close-to-wall siting, even here the averaged bass/lower mid output is about 4dB light below 250Hz. The plus side is an exceptionally smooth and well ordered midband and treble, with seamless integration and fine top end extension.

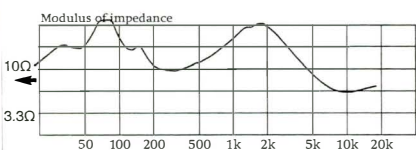
Sensitivity is a reasonable 87dB, given the easy amplifier load, but the little main driver inevitably limits the amount of bass extension and weight available, even with transmission line assistance. The slight peak around 50Hz helps provide extension down to 40Hz, but there's little output in the bottom octave.



The *ELA* is far too bass light away from walls but the midband and treble are very well balanced and integrated.



Close to a wall the balance remains a little bass light. Dotted HF trace shows the *XEL* tweeter originally fitted in error.



Despite the complex interaction of line and driver, this is a very easy load for the amplifier.

VERDICT

- ▲ **Fine communicator with an open and coherent midband; good looking too.**
- ▼ **Lightweight balance can sound a bit spitty and lacks bass power; not for Techno freaks.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £500

✉ Rega Research Ltd,
119 Park Street, Westcliffe
on Sea, Essex S50 7PD.
☎ (01702) 333071

TANNOY 633

Tannoy's new popularly priced *Profile* range comprises all 63-somethings, and this £320 offering — the least expensive of four floorstanding models — occupies the third rung on the ladder. It actually uses the same cabinet as the £100 more expensive 636, but has a conventional tweeter alongside two main drivers, whereas the 636 uses one of Tannoy's dual-concentric full range drivers alongside a conventional bass/mid unit.

All of which suggests that the 633 could be quite a bargain. There aren't too many sub-£350 floorstanding loudspeakers around, and even fewer (if any) use an extra main driver to reinforce the bass output. It's certainly unusual among today's designs — indeed unique in this group of eight — in employing sealed-box

loading, as distinct from the almost ubiquitous reflex port. The most interesting point of reference is the Linn *Keilidh*, covered in last month's test, which uses the same bass loading and a very similar driver configuration.

Although stereotyping speaker ingredients has always been a dodgy business, there's no denying that a sealed box is qualitatively different from a ported enclosure, and in my opinion it is probably somewhat superior overall, largely on grounds of simplicity. The need for the sealed box's inherent subsonic stability may have diminished with the decline of vinyl disc's pre-eminence, but its single resonance is always likely to be less intrusive than the double (or more) of the ported system, and easier for the amplifier to drive, too.

The box follows Tannoy's clever *Profile* approach, itself a logical development of the successful *Sixes* models. Plastic moulded bases and top sections are joined by a wrap formed by the cabinet sides, while a central vertical strut adds further stiffening.

The irregular shaping of the top and base of the cabinet has several advantages, the post-formed baffle edges promoting good lateral dispersion while the varying width will help de-focus internal standing waves. The *Profile*'s extra depth over the *Sixes* improves the basic footprint stability.

The box here is a continuous sealed cavity built up from 16mm vinyl woodprint chipboard, the lower section in particular being pretty well stuffed with wadding. The two similar main drivers are mounted above and below a rather low-set tweeter; the upper one, which works right up to the tweeter crossover point, has a hard dome-shaped dust cover. Both are fixed by six fairly tight but coarse woodscrews, their magnets pressed up against the internal strut via a chunk of lossy gunk. Both have pressed frames, modest magnets and 120mm plastic cones, while the tweeter is Tannoy's own 24mm metal dome device, with a removable mesh cover.

The base moulding is a versatile affair, combining threaded inserts which proved adequate enough for spike fixing with bridgeable bi-wire terminals. An open compartment set into the base may be filled with lead shot and/or sand to mass-load the bottom of the speaker and so improve stability, a small separate panel being supplied to cover this; while the crossover network itself is mounted on the inside. A moulded frame grille covers everything neatly and unobtrusively if desired.

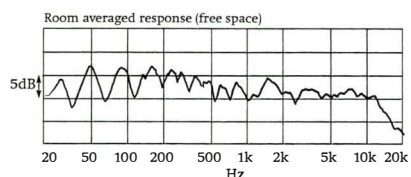


LAB REPORT

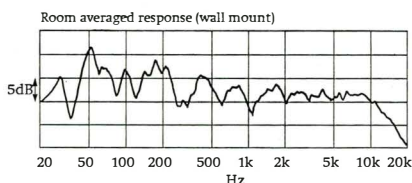
Despite the twin drivers, sensitivity is a shade below the group average, and the load makes quite heavy current demands too. The payoff is in exceptional bass extension for such a compact speaker: 20Hz in-room output is more than 10dB better than for the rest of the group.

Close-to-wall siting looks entirely inappropriate here, not only because mid-bass reinforcement is actually undesirable with this design, but also because the wide dispersion of the *Profile* cabinet shape increases the influence of midband reflection and interference from a wall close behind, as seen in the appropriate graph.

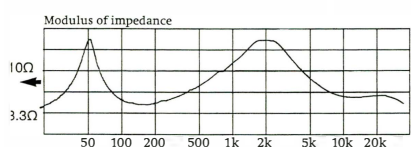
Placed well clear of walls, the overall balance is exceptionally good (± 4 dB 50Hz-15kHz in-room), but the critical upper midband is rather uneven and recessed, and the ultimate treble roll-off a little premature.



Exceptionally well controlled overall balance with fine bass extension, but uneven upper midband.



Close-to-wall siting over-emphasises the bass region and leads to considerable midband unevenness too.



The Tannoy makes quite heavy current demands, but the single ~55Hz bass resonance is relatively easy to drive.

Sound Quality

The Tannoy was another speaker to polarise the opinions of the panelists, which is not all that surprising in view of its balance differences from the norm. Those seeking killer bass at a bargain price need look no further: even without mass loading, the 633 delivers extension, control and speed well ahead of its rivals.

The down side is a midband which is altogether less than the best, with a degree of unevenness which inevitably creates coloration and 'shut in' effects. Treble is a little too strong at the lower end and rather lacking at the top. Dynamics seem just a little grey, but good overall coherence ensures fine intelligibility, which is fair compensation for the cosmetic shortcomings.

Conclusion

Good looking and very competitively priced, the

VERDICT

- ▲ **Slammin' bass that gives fine ultimate extension without midbass boom.**
- ▼ **Midband is a bit shut in and coloured, lacking transparency; modest sensitivity**

SOUND ★★★★★

VALUE ★★★★★

PRICE £320

✉ Tannoy Ltd, Rosehall Industrial Estate, Coatbridge, Strathclyde ML5 4TF.
☎ (01236) 420199

633 differs from the rest of the group, offering bass drive and coherence which is well ahead of the pack, at the expense of a midband which falls somewhat short. To describe it as a Linn *Keilidh* on the cheap isn't really fair to either product, but the similarities are too close to ignore.

LOUDSPEAKERS

Conclusions, Best Buys and Recommendations

The eight selected models, all priced between £250 and £500, provide a fascinating microcosm of the wide range of choices available to the speaker designer or purchaser, as well as an intriguing contrast with the £500-£800 group tested last month.

Judging by the reactions of the panel, this was an unusually good selection, giving away little, if anything, to the more expensive earlier group on sheer sound quality – even though luxury touches were thin on the ground and the performance envelopes a little more restricted.

Only the Rega uses a cast-frame main driver, though Monitor Audio's injection moulded frame is equally noteworthy; and only Rega and JPW use wood veneer as standard, unless you count the top of

the Musical Technology *Kestrel* (which also has a pricey full-veneer option).

In a couple of respects these cheaper models were actually superior to last month's group. Only the KEF *Q50* suffered an uncomfortable degree of mid-bass excess, a problem that regularly hampers larger floorstanders.

The KEF was also the only floorstander that gave grief when I attempted to secure the spikes, though I felt nervous with the Tannoy as well. This has been a problem with every other example I've encountered since compact floorstanders started becoming fashionable, mostly because it's awkward to arrange a metal/chipboard or metal/plastic interface capable of handling serious torque.

Here the Rega and Musical Technology

(with baseplate) both have metal/metal spike interfaces, which are entirely trouble free. I've had difficulties in the past with both Mission and Monitor Audio models, so it's pleasing to report that both the *733* and *MA202* have new, more effective socket arrangements.

The other obvious piece of good news is the arrival of a new British company with an exceptionally interesting first product. The Musical Technology *Kestrel* is stuffed with clever ideas, and the price should be held for the foreseeable future. This looks like a company to watch.

Comparing and contrasting different designs is, for me, always the most interesting part of these tests, especially now that our price bands are tighter. By applying various different criteria to the group, it is often possible to draw valid cause and effect relationships; or, alternatively, make rash generalisations.

Take main-driver cone material, often used by saloon-bar pundits to characterise the sound of a speaker. The JPW and MT both use metal, albeit of rather different thickness; Mission, Tannoy and KEF have plastic cones, while MA, Pioneer and Rega opt for traditional paper.

The subjective findings did tend to reinforce stereotypes: metals were crisp, clear and precise, but dynamically suspect; papers lively but a little untidy with it; plastics controlled but a little shut in. Certainly there are grounds for assuming that cone material plays a part, but other factors could also be responsible.

The two metal-cone speakers were also the two least-sensitive models in our group, which might well be a clue to their dynamic limitations. But they were also among those using the most complex crossovers, the additional equalisation

The best of the rest



Royd's £289 *Minstrel* – a value-packed alternative

More than twenty £250-£500 Best Buy and Recommended models of various shapes and sizes are currently listed in our Directory, though the availability of some may be limited, and it has to be said that some might not have made it against this latest crop.

The smallest include expensive, luxury sub-miniatures like the Harbeth *HL-P3* (£479), and the JRT *AD1 Micro* (£389). Classy bookshelf-size stand-mounts include the Arcam *Delta 2* (£300), Castle *Durham 900* (£280), Epos *E511* (£385), Heybrook *Trio* (£359), Kenwood *LS-770G* (£260), Monitor Audio *MA201* (now £300), NVA *Cube 2* (£480), and Bose *305* (£430).

Floorstanders start with the compact Royd *Minstrel* (£289) and Rega *EL8* (£298); bigger boxes include the Celestion *15* (£389), Mission *752* (£500), Origin Live *OL2A* (£469) and TDL *RTL3* (£400).

Measurement data at a glance

	JPW RUBY 1	KEF Q50	MISSION 733	MA 202	MUS TECH KESTREL
SIZE (HxWxD)	32x19x21cm	84x19x28cm	86x20.5x31cm	89.5x22x28cm	80x20x19cm
WEIGHT	5.5kg	12kg	12kg	15kg	9kg
RECOMMENDED AMP POWER (Wpc)	20-70W	15-120W	15-100W	15-100W	25-70W
RECOMMENDED PLACEMENT	1-2FT FROM WALL	CLEAR OF WALLS	CLEAR OF WALLS	1-2FT FROM WALL	≈1FT FROM WALL
IN ROOM AV RESP LIMITS 50Hz-10kHz	±5dB	±6dB	±5dB	±7dB	±6dB
IN ROOM/SPACE LF ROLL-OFF (-6dB REF MID)	42Hz	30Hz	45Hz	28Hz	40Hz
IN ROOM/WALL LF ROLL-OFF (-6dB REF MID)	42Hz	40Hz	40Hz	28Hz	40Hz
IN ROOM OUTPUT AT 20Hz (REF MIDBAND)	BELOW -13dB	BELOW -16dB	BELOW -15dB	BELOW -16dB	BELOW -13dB
EST MIDRANGE SENSITIVITY (REF 2.83V, 1M)	84dB/W	88dB/W	87dB/W	88dB/W	84dB/W
IMPEDANCE CHARACTERISTIC (EASE OF DRIVE)	VERY GOOD	QUITE DEMANDING	VERY GOOD	VERY GOOD	GOOD
TYPICAL PRICE PER PAIR (INC VAT)	£ 500	£ 500	£ 299	£ 450	£250+£30

Best Buy and Recommended models

This turned out to be a pretty good batch, comparable on sound quality (if not absolute performance) with the more expensive models tested last month, and this is reflected in a generous flag allocation — four Best Buys and two Recommendeds.

Just don't assume that each and every one will work equally well with every system and room. Everything in this price band involves significant compromise between a number of variables, and the reasons for the endorsements vary widely from one model to another.

The cheapest Best Buy is the £250 Musical Technology *Kestrel* (used with its optional £30 base), a new low price for an all-metal diaphragm model, and a very pretty and creative package to boot, even if it does have low sensitivity and suspect bass alignment.

If you want a really big and affordable box, the £300 Mission 733 is very impressive in value terms and a superb example of high-class industrial design. It sounds good too, if a little unexciting,

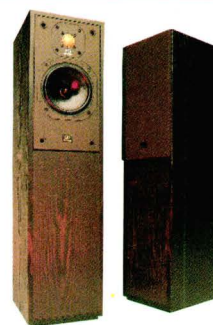
but the tweeter remains the 733's Achilles heel.

Tannoy's £320 633 comes into the Best Buy frame for its truly exceptional bass — tighter, more coherent and far more extended than anything else in the class. Power handling is good, too, but here the midrange rather lets things down a little.

For midband superiority it's hard to beat the £500 Rega *ELA*, which is now a very handsome looking package too. But it might sound too bright in some systems, and is certainly a little lacking in bottom-end weight and power.

Among the Recommended models, the £250 Pioneer *S4-UK* is another midrange specialist without much bass, but this time one that's a bit short on treble and styling too. For all that it's a lot of fun, illustrating that a good stand-mount can give the floorstanders a run for their money.

Despite going up recently to £450, the Monitor Audio *MA202* still makes the lists as a good all-rounder, if not the most neutral sound around. It's a bit suspect in bass alignment, but fine midband communication ultimately carries the day.

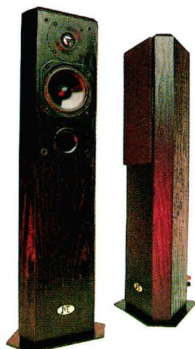


Monitor Audio MA202



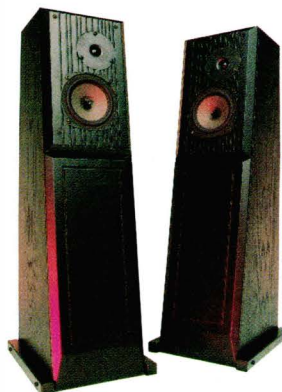
Pioneer S4-UK

Mission 733



Musical Technology Kestrel

Rega ELA



Tannoy 633

resulting in flatter, more neutral overall responses. Their main drivers, along with those of Rega, had the smallest (90mm) cones of the bunch.

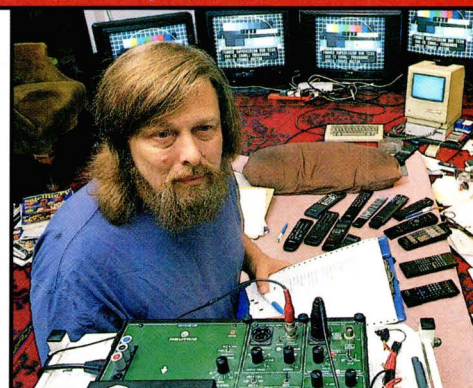
Maybe there is a metal, plastic or paper 'sound'; but since I've yet to encounter a really high-sensitivity metal cone system (the multi-driver Townshend *Sir Galahad* made around 90dB midband, but all the others I've tested are sub-85dB devices), and offhand I can't think of any low sensitivity paper cone speakers either, it's still

The listening day

The listening tests went very well. There was a general feeling at the end that the differences between models had been pretty obvious, and that the group as a whole had proved at least a sonic match for the batch that we'd heard the month before.

Yet again, however, when the results were analysed there were no clear winners, with some panelists favouring one set of compromises, some another. Given such democratic shillyshallying, I reverted to my traditional presidential rôle for the subsequent hands-on work.

Blind-panel tests remain a crucial cornerstone which help to keep my prejudices in check, but they have their limitations. For example, several panelists described the Tannoy 633 as bass light, where it actually has the best bass extension of the group, and a welcome freedom from boom. The explanation was obvious when I noticed that

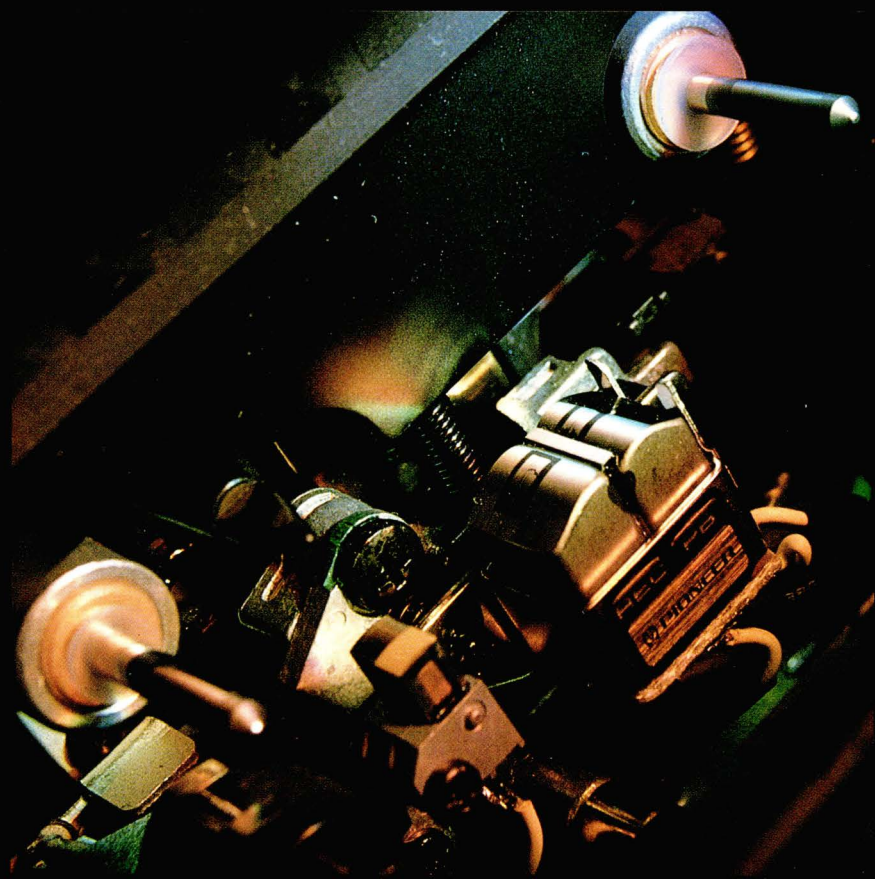


the preceding speaker had been the bass-heavy KEF *Q50*, showing all too clearly how each presentation influences the one that follows. We've started experimenting with interposing a reference speaker, but that has its own difficulties.

The equipment used was the usual collection of Mana-supported Naim and Linn components. Thanks are due to Jason Kennedy for the installation work, and to panelists Russell Kauffman (Morel), Robin Marshall (Mission), David Inman (van den Hul UK), and Ken Weller (Tannoy).

PIONEER S4-UK	REGA ELA	TANNOY 633
37x21x27cm	84x20x31cm	74x24x23cm
7kg	13kg	10kg
20-80W	15-70W	15-120W
≈1FT FROM WALL	CLOSE TO WALL	2+FT FROM WALL
±5dB	±5dB	±4dB
45Hz	40Hz	BELOW 20Hz
42Hz	40Hz	BELOW 20Hz
BELOW -16dB	BELOW -15dB	-5dB
88dB/W	87dB/W	87dB/W
VERY GOOD	VERY GOOD	QUITE DEMANDING
£ 250	£ 500	£ 320

*For the
Record*



Back in the August edition of *Hi-Fi Choice* (issue 133), we tested four digital audio recorders, all using new technology. Things have moved fast since then, and among other changes we have seen the price of blank CD-Rs (recordable CDs) drop by nearly 50 per cent. At the same time, MiniDisc has become a *de facto* standard in professional applications, such as backing up the entire output of Classic FM, or storing jingles and adverts for rapid replay.

Even so, as a hi-fi application CD-R is still only for the very well-heeled, and even now there remains only one hi-fi-size MiniDisc recorder on the market (Sony's £799 MDS-501).

For this test, therefore, we are taking a different tack on three formats that are vying for pre-eminence in home recording: DAT, DCC and good ol' compact cassette — specifically with Dolby S. Which one should you go for? If you think the answer's obvious, read on. As it turned out, this was one of the more surprising hi-fi assignments I've had the pleasure to accept...

For the purposes of this review, cassette is represented by the Pioneer CT-S830S (£500, with Dolby S), DAT by the Sony DTC-60ES (£800, with Super Bit Mapping) and DCC by Philips' DCC951 target price £280, with 18-bit convertors). All three recorders were tested principally as analogue input/analogue output machines, although it must be admitted that this mode will become less common rapidly as more people get used to digital dubbing from CDs, and when digital radio comes along. In fact, the DCC deck is clearly intended to be used principally as a digital recorder (despite its 18-bit analogue-to-digital converter) and if truth be told, analogue recording on this machine is not very convenient.

Obviously this article does not claim to be an exhaustive appraisal of all formats, but all three machines are good, up-to-date and representative samples of their genres. In order to make the tests as demanding as possible, I made some recordings of voice and piano straight from professional microphones, and also copied extracts from CD and LP so that I could subsequently play back recording and source side by side.

FACILITIES AND ERGONOMI

Cassette	★★★★★
DCC	★★★★★
DAT	★★★★★

All three machines have more features than one will find on most domestic recording gear.

Cassette

The Pioneer, despite being 'only' a normal cassette deck, is blessed with Dolby B, C and S, and includes Pioneer's 'Super Auto BLE' automatic alignment system, which claims to extract optimum performance from any cassette. The deck's tape counter can count in real time, but only when recording or playing, so you still have to guess where you are when spooling forwards or backwards.

The metering has two switchable ranges, giving coarse or fine display, but its maximum indication is only 7dB over Dolby level, which isn't quite enough if you like to cook your tapes a little. Tape handling is very slick, with quite fast winding, and the machine is generally pleasant to use. The Auto BLE is defi-

These days, 'home recording' encompasses everything from the odd CD copy to a full-scale sonic testament of next-door's karaoke party. Richard Black pits cassette against two digital formats to see which performs best.

nately worth bothering with, and only takes about 15 seconds to set up a tape. For some reason the motor is mechanically rather noisy, which I found mildly irritating on a couple of occasions.

Digital Audio Tape (DAT)

The DAT format comes as standard with the ability to write trackstart and end ('skip') markers on the tape, and other subcodes exist which can be used in various ways. Sony equips its machines with a date-stamp function, which I find incredibly useful: you have only to put a tape in the machine to find out exactly when it was recorded, which — when combined with a pile of old *Radio Times* — helps you catalogue that embarrassing accumulation of unlabelled air-check tapes.

Track markers can be written to an accuracy of 0.3s, and the process is very simple, including a 'rehearsal' to allow accurate marker positioning. Track start markers may be written manually, or automatically after three seconds

of silence, and a rather neat feature allows subsequent adjustment of markers written automatically, so that they start just before the music rather than fractionally after it.

Tape winding is gratifyingly fast, taking well under a minute for a 90-minute tape (DAT records in one direction only), and track searching is also quick, though of course not nearly as fast as on CD. The long-play mode of DAT is very useful for recording from radio, where the available bandwidth is no greater than that of the recorder, and very long uninterrupted recording (up to four hours) is often required.

With 44.1kHz sampling (in addition to the normal 48kHz rate) and SBM, Sony has introduced two features from the professional recording world into the DTC-60ES. The first is direct digital copying to MiniDisc, which is ironic, since Sony's MDS-501 full-size MD deck performs digital sampling rate conversion from 48kHz anyway. The second, Super Bit Mapping (SBM), performs some digital signal processing on data sampled to 24 bits (!) to give a claimed resolution equivalent to a 20-bit system. SBM operates in record mode (44.1kHz or 48kHz only), and the results are playable through any 16-bit system. It is switchable, so its effect can be compared with normal sampling.

Digital Compact Cassette (DCC)

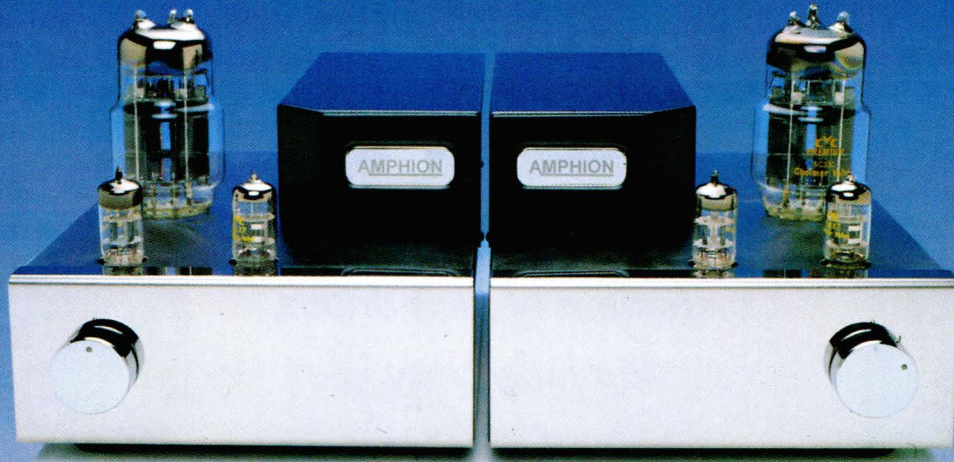
Philips' DCC951 is also endowed with a novel feature: in this case analogue-to-digital and digital-to-analogue converters operating at 18 bits, making this the first full 18-bit record or replay machine on the market. The DCC951 also addresses some of the ergonomic weaknesses of earlier machines, but the DCC format still suffers from the same playing-time limitation as analogue cassette — 45 minutes each way. With the new transport, tape winding is much faster, but it's still only half as fast as on DAT.

Track markers can be written manually or automatically, but not very accurately. One feature that I haven't seen before is the digital input level control on the DCC951, which adjusts recording level in 14 steps. It's less convenient than a rotary knob, but it does allow the deck to store different settings associated with, say, a tuner and a phono preamp. Metering is by a numeric display which is accessed by pressing the 'time' button — any particular reason for this?

There are different procedures for recording, depending on whether you want to append to an existing, partly-recorded

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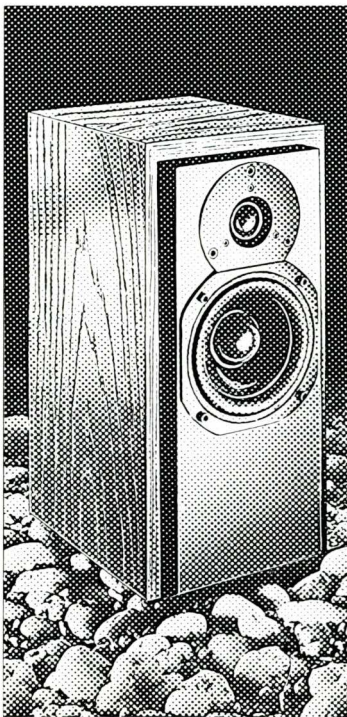


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tape; or start recording from a specific location; or start on a fresh tape. If DAT manages perfectly well without that confusion (to append on DAT you simply fast wind until the tape stops and carry on from there, which seems easy enough to me), why can't DCC do the same? Given that you can't see the tape, I find the two-way recording and replay very confusing, as the machine shuttles one way and the other looking for tracks. Altogether, I feel that DCC still has some distance to cover in the ergonomics stakes.

Surveys consistently show that most people don't know how to use most features on video recorders and even relatively simple cassette decks. Many of my musician friends, for instance, don't know what Dolby noise reduction is. At the very least, new recording formats should feel like old ones in use, and if new features are added, it seems sensible to put them on a large number of separate buttons, largely as Sony has done on the DTC-60ES. In DCC's favour, though, it should be pointed out that there is a small but growing base of pre-recorded software for



Philips DCC951: brings full-size DCC to a new low price, but does it convince?

you multiply together the bandwidth and the signal-to-noise ratio. The next-highest information rate is ascribed to cassette, with DCC in third place, so in theory at least, DAT should sound best. But does it?

In practice the answer is yes. I found that with SBM switched on, the DAT recorder produced the most consistently lifelike results. Noise is very low, pitch instability (wow) effectively nonexistent, and bandwidth not audibly limited. However, I was amazed to find that both DCC and cassette ran pretty close to DAT in particular aspects of performance. Tonally, the DAT and DCC machines were neck-and-neck, giving a very accurate reproduction of the basic character of a soprano voice. In this respect cassette trailed behind, sounding slightly thickened and warm by comparison.

I've noticed this before in various cassette/DAT trials, and it's a simple reflection of the fact that while DAT has what is effectively a perfectly flat frequency response up to at least the upper midband, cassette generally has a few minor response variations. On a good-quality, well-aligned machine like the Pioneer, using decent tape like the Maxell Metal Vertex I deployed, the response variations may be only a few tenths of a dB, but these are enough to be audible, especially when the additional effect on Dolby processing is taken into account. With recordings of piano a small degree of wow was audible on cassette, although this was not serious.

All three recorders reproduced quite decent bass: none of them was outstanding but all were believable. I copied a section of organ music from a CD, and was aware that information had gone awry during the transfer process, but no format singled itself out for particular censure. That's a particularly good result for cassette, since digital systems can be made flat all the way down to 0Hz if one wishes.

In the treble, on the other hand, cassette showed a trump card by giving a fractionally quicker and cleaner attack on transients than the more severely band-limited digital systems. This was most noticeable when recording piano straight from microphones, and the analogue tape definitely had a little more sparkle than the others. Of course, there wasn't anywhere near as big a difference as I've heard between professional open-reel recorders and digital systems, but given the low tape speed



Pioneer's CT-5830S: a convincing spokesman for the 'Cassette's Not Dead' campaign

the format, including some 18-bit mastered titles, and DCC machines will also play normal analogue cassettes.

BUILD QUALITY

Cassette	★★★★★
DCC	★★★★★
DAT	★★★★★

There is very little to differentiate the machines on this account. All three are fine examples of mid-to-high-price, mass-produced electronics, neatly assembled using standard-grade components on large circuit boards. Naturally, there is extensive use of multi-pin integrated circuits, even in the Pioneer cassette deck, where the chips handle Dolby S and transport control functions. The two digital recorders use their manufacturers' own chips for A-to-D and D-to-A conversion.

Transports and electronics in all the machines appear to be fully productionised; and though none contains anything in the way of audiophile components, the Philips deck, least expensive of the bunch, does have some mildly unusual op-amps in its circuits.

SOUND QUALITY

Cassette	★★★★★
DCC	★★★★★
DAT	★★★★★

I suspect readers will hold a few preconceptions as to which format will sound best, but things aren't always so simple. Bear in mind that all three recorders use some form of signal processing, based on psychoacoustics, to improve their perceived performance (see box, right). So for one thing, specific implementations of psychoacoustical algorithms must be correct if results are to be satisfactory. Neglecting that, and taking a simplistic view, the DAT recorder has the greatest information rate, which is a communication theory term for what you get when

Day after day, they take some sound away...

Psychoacoustically-derived signal processing is big business at the moment. The basic idea is to sacrifice bits of the sound to which the ear is less sensitive, in favour of those which it can clearly hear. You may be surprised to learn that the various Dolby noise reduction systems used on cassette, which cut hiss in quiet passages of music, are relatively simple analogue examples of the breed. DCC, meanwhile, uses complex number-crunching to process the signal digitally and extract only the 'significant' bits to store on tape. (This is the system known as Precision Adaptive Sub-band Coding, or PASC, which underpins the DCC system). Super Bit Mapping, on the other hand, samples the incoming audio to greater precision than 16 bits, and uses psychoacoustic tricks to redistribute quantisation noise in the parts of the audio spectrum where the ear is least sensitive, thus achieving greater resolution and better signal-to-noise ratio than in a straight 16-bit system.



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of cassette it's a most impressive achievement. And before someone points out that a touch of analogue tape distortion can subjectively 'speed up' transients, I might add that the same effect was audible when copying from good quality LPs, and in this case comparison with the original showed that the cassette was not enhancing the treble.

How about imaging? This is where cassette fell down most noticeably. The DAT gave the most concrete imaging and the most believable front-to-back effect, while DCC gave the same width and depth but with a feeling that the images were just a little out of focus.

Cassette narrowed the horizontal image and reduced depth quite considerably. My inclination is to attribute this to the superior signal-to-noise ratio of the digital recordings; because imaging information is carried in quite subtle harmonics and phase differences, and although cassette boasts an S/N figure in excess of 70dB with Dolby S, that's comparing full modulation with noise alone. With signal present the noise floor unavoidably rises somewhat, which has the effect of masking the all-important spatial cues.

In quiet passages and silences between tracks, cassette hiss was just noticeable, but not really at a level where it would



Sony DTC-60ES: not cheap, but it's still the best bet for home taping

from the corner of the eye that can't be seen directly. I sometimes wonder whether there isn't an analogous hearing mechanism. Is DCC's data reduction more audible in a relaxed than concentrated state? It appears to be. There's something rather synthetic and artificial about the whole thing, where both DAT and cassette (even with the latter's other imperfections) were always more real and tangible.

That said, at approximately £280 the DCC951 does an impressive job in many ways, and I can well believe that many listeners will find it hard to beat. However, having been initially quite impressed with DCC (and MD), I'm becoming very wary of data reduction in general.

I would certainly advise anyone contemplating the purchase of DCC to listen to a good long excerpt of something rather than little snippets, which are much more superficially impressive.

The Three Formateers

Cassette, of course, is familiar to everyone as Philips' 1960s dictation machine format that has been tweaked and cossetted to a standard surely unimagined at inception. Notwithstanding that, noise has always been the Achilles heel of cassette, and Dolby S is the latest and considerably the most sophisticated system to improve that area. In use, cassette decks vary enormously in quality: from cheap portables that sound ghastly, to serious decks like the Pioneer reviewed here, which is undoubtedly a real hi-fi machine.

DAT (Digital Audio Tape) was originally intended as a domestic format, but take-up was poor, and didn't improve when people realised that prices would never drop very low and tapes can't be readily duplicated. However, it has caught on as a budget format for studios, especially for back-up work and location recording, so its future seems reasonably secure. There have been a few scares in the professional world about the error rate and ultimate lifetime of DAT tapes, but I've heard of very few actual problems.

DCC (Digital Compact Cassette) is the newest format here, intended to complement CD and analogue cassette, ultimately replacing the latter in all but the cheapest applications. It is a digital system using data reduction, but it is also capable of replaying analogue cassettes. With a stationary head (instead of DAT's rotating one) it has a much simpler transport than DAT, and should in principle be more robust and better suited to mobile use.

CONCLUSIONS & VALUE FOR MONEY

Cassette	★★★★★
DCC	★★★★★
DAT	★★★★★

For outright sound quality, the Sony DTC-60ES is a clear winner for DAT with Super Bit Mapping, but £800 is a lot of money and there is no pre-recorded software. Then again, blank tapes are getting pretty cheap (as low as £3 an hour, or £1.50 per hour in long play mode), and 44.1kHz sampling gives you the option to make digital copies of important recordings to archival formats — though there are still some residual doubts over DAT's ultimate longevity.

For general use I can still recommend cassette very highly, certainly as it is purveyed by Pioneer's CT-S830S (£500). Its sound is not far behind DAT in many ways, it is compatible with everyone else's equipment, tape is widely available and cheap (£1 per hour even for metals, if you shop around) and the format is both robust and long-lived.

Meanwhile DCC may appear to offer excellent sound per pound, as evinced by the feature-packed Philips DCC951 (£280), but tape costs are no less than DAT, and the format is still not particularly slick to use. Bear in mind also my opinions on its mirage-like sound quality.

Me? I use long play DAT for unattended air-checks, standard play DAT for cheap live recording, and cassette (Dolby B) for air-checks and tapes for friends. And I'm sticking with it!

cause great distraction. It's only the prospect of noise increasing with signal level that compromises things, and this is an inherent feature of all analogue noise reduction systems, whether or not it's directly audible.

Comparisons between digital in general and cassette are one thing, but those between DAT and DCC were of a slightly different nature. As implied above, the basic characteristics of both are very similar: tonally pretty neutral, clean, high S/N ratio. But there's something slightly odd about the way DCC replays sound, and as I hear more DCC, both pre-recorded and user-recorded, I'm coming to recognise the symptoms.

If you listen hard, consciously, everything is there. But if you relax a little, maybe stare out of the window or casually read the paper, the sound makes no attempt to attract your attention back. It seems insubstantial and vague, but the moment you try to put your finger on what's wrong you naturally get back into conscious listening again and everything seems okay. Of course, one might like to listen with complete concentration all the time, but even musicians have trouble doing that while performing, and it's almost impossible to avoid switching off occasionally. DCC just seems to make it easier to do so.

Astronomers know well that the eye is most sensitive just alongside the direct field of view, which is why one can see stars

Comparison Table

	PIONEER CT-S830S	PHILIPS DCC951	SONY DTC-60ES
FORMAT	COMPACT CASSETTE	DIGITAL COMPACT CASSETTE	DIGITAL AUDIO TAPE
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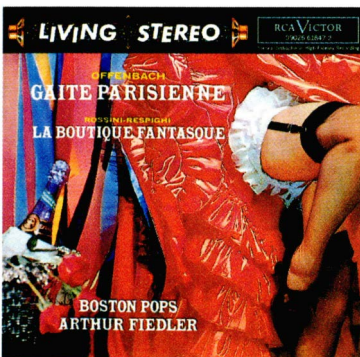
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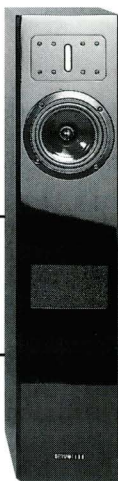


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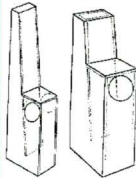
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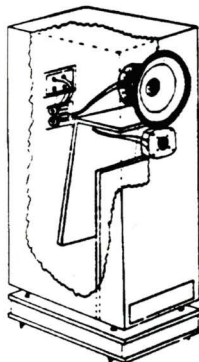
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Heybrook Trio loudspeakers	Were £359	ex dem	£199
Keswick Audio Aria loudspeakers	Were £320	ex dem	£179
Royd Abbot loudspeakers	Were £666	ex dem	£350
Audio Innovations P2 MC phone amp	Was £899	ex dem	£549
Audio Innovations L1 pre amp	Was £299	ex dem	£219
Audio Innovations First Audio power amp	Was £1549	ex dem	£875
Audio Innovations Series 800 power amp	Was £849	ex dem	£579



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Audio Innovations 300 Int. amp.....	£375
Audio Innovations 800 MC trans.....	£120
Linn LP12.....	£395
Wadia X 32 DAC.....	£795
Sony 702 DAC.....	£795
Magneplanar Lympari IV speakers just refurbished by Absolute Sounds.....	£2095
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Linn LP12/SME/Ort.MC26 cart'ge.....	£795
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A list of priorities have been drawn up in order to establish the framework of the Award Scheme. The main priorities are, sound, value, construction, design, style and originality.

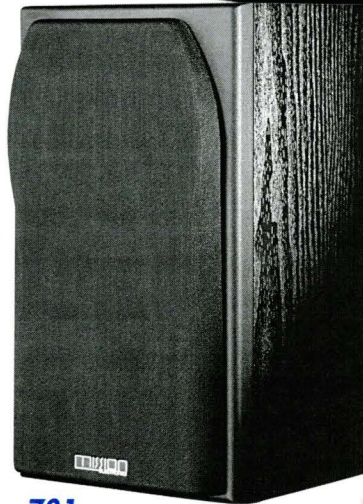
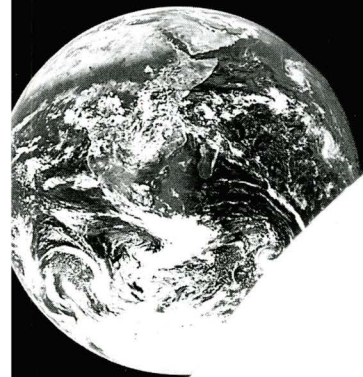


The choice of dealer should be given the same care and attention as is given to your choice of equipment, so that you may receive the kind of quality service and advice that compliments equipment of the same standard. The type of service you ultimately receive will reflect on your overall enjoyment of the product. A long-term association with a professional dealer has real benefits and will serve as your personal contact for information and advice on the Manufacturers latest Innovations

If it is not possible to visit a Bill Hutchinson Hi-Fi AV Centre, simply contact the Manufacturer for details of your nearest authorised stockist. For further information on innovation stockist or simply for help and advice phone

041-248 2857

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Model No: 731

- Unique enclosure design couples the bass driver to the rear panel rather than the front baffle, thus isolating the energy source of the driver from the baffle. This results in a new order of clarity and freedom from coloration.
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 PIONEER
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 PIONEER

REFERENCE
POINT



Model No: **PD-S703**

- *Stable Platter Mechanism*
- *Twin 1-bit DAC with Legato Link Conversion*
- *Independent Power Supplies for Analogue and Digital Stages*
- *Coaxial and optical Digital Outputs*
- *Display off and Digital Output off*

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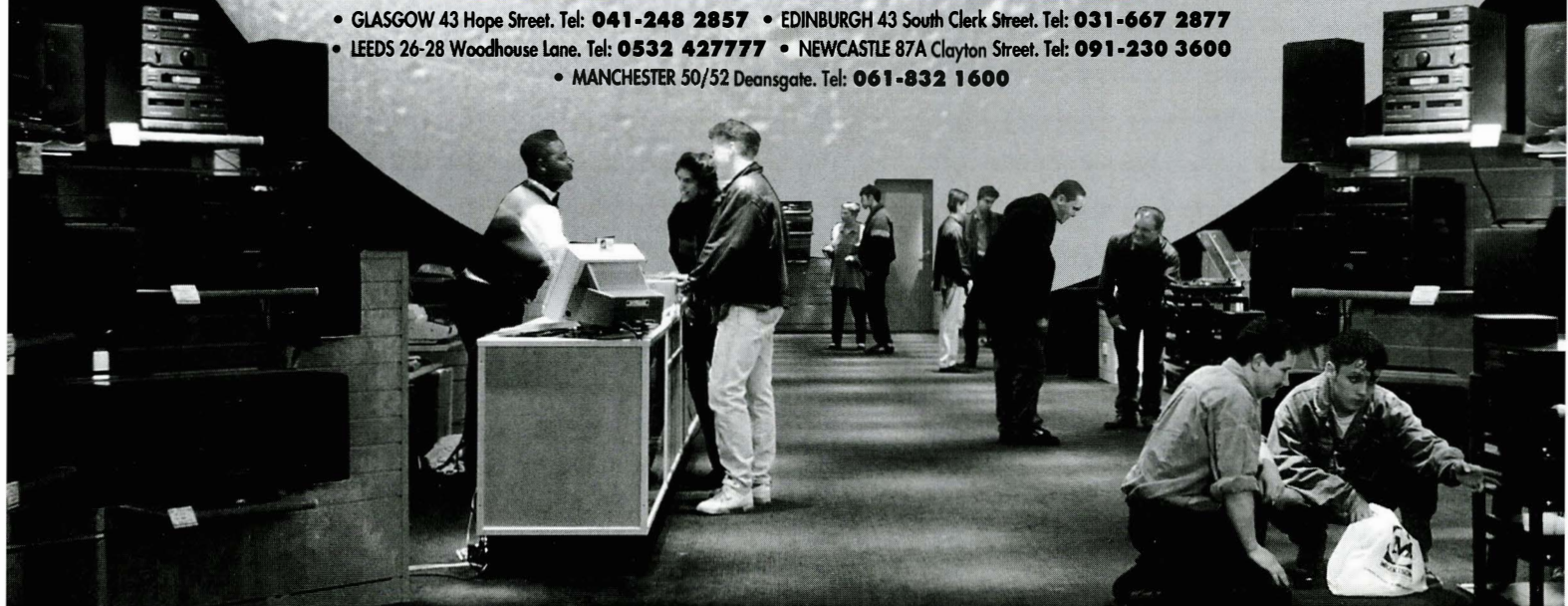
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The Forefront of Technology



Model No: 636

- Peak power 200 Watts.
- Frequency Response 44Hz - 30kHz.
- Sensitivity 90dB.
- 160mm extended bandwidth Dual Concentric provides correct phase, amplitude and optimised dispersion over a wide listening area, and helps promote a uniform, consistent and accurate sound for several listeners, not just a single 'sweet spot'.
- Supplementary 160mm bass only drive unit.
- Variable thickness, injection moulded cones ensure accurate bass and midrange reproduction.
- Non-resonant Waveguide and gold anodised aluminium tweeter dome provide pure, natural and dynamic treble.
- Low diffraction rounded baffle for purer treble and imaging.
- Sealed (IB) enclosure gives smoothly extended bass.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.

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The Forefront of Technology

DENON
PROFESSIONAL AUDIO



Model No: **D-F10 Mini Component System**

- UPA-F10 Integrated Amplifier
- UTU-F10 Am/Fm RDS Tuner
- UCD-F10 CD Player
- UDR-F10 Horizontal-loading Cassette Deck

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The Forefront of Technology

Model: Purdey

- Compatible with amplifiers from 30 to 120 watts per channel.
- Mass loadable for enhanced bass reproduction.
- Floor-standing, bi-wirable, two-way, speaker with a cone isolated plinth provided.
- Available in either a black-wood or a rich rose-wood finish.
- "...delivers a remarkably powerful performance, one that's detailed and coherent with a strong sense of timing." - *Hi-Fi Choice*, December 1994.
- "...RAM has a real winner on it's hands with Revolver speakers and (Purdey) model in particular." - *CD Review*, November 1994.

REVOLVER

by

Ram



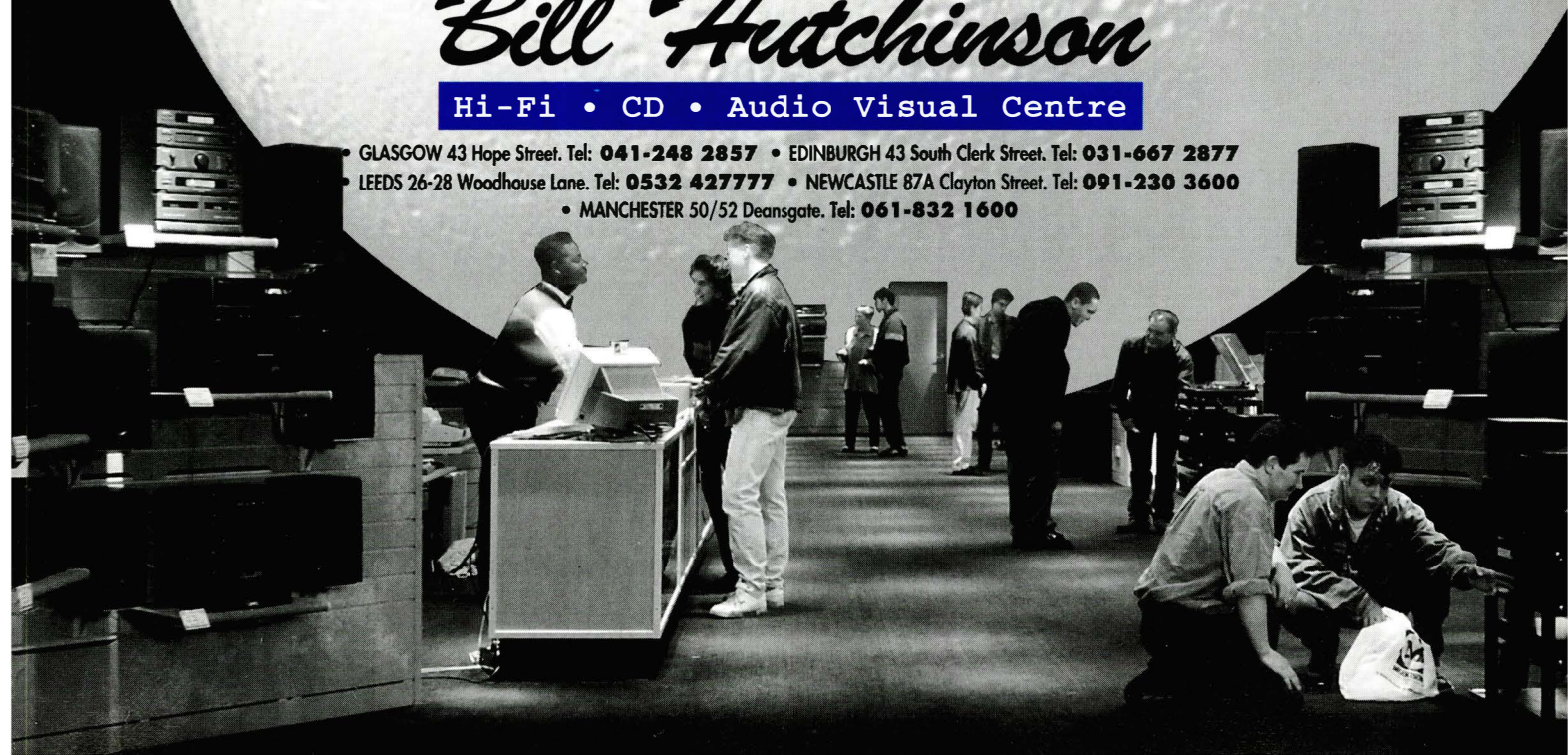
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- KENWOOD KRV 6060 - AV RECEIVER - INNOVATION WINNER '94
- PIONEER PDS-703 - CD PLAYER - INNOVATION WINNER '94
- MARANTZ 1020 - LYFE STYLE SYSTEM - INNOVATION WINNER '94
- AIWA AD-450 - CASSETTE DECK - INNOVATION WINNER '94
- KEF 100 - CENTRE SPEAKERS - INNOVATION WINNER '94
- JVC UX-C7 - AV AMPLIFIER - INNOVATION WINNER '94

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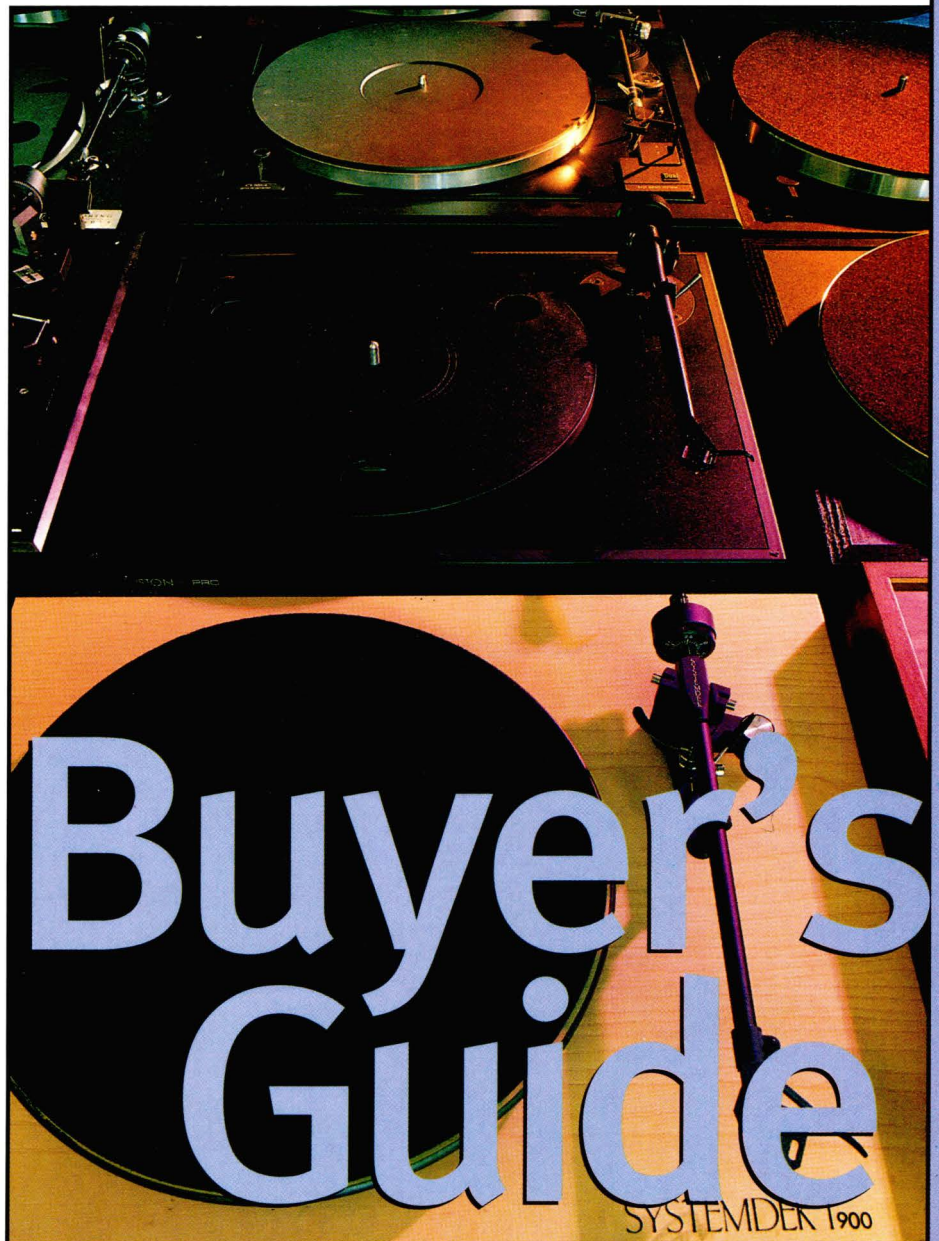
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Key to amplifiers
Price - typical retail, to nearest pound.
Power - output power in watts, per channel, RMS.
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.
A/V - includes Dolby Surround or Pro Logic decoder and amplification.

Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier.
Headphone - Y - yes, N - no.
Remote - Y - yes, N - no.
Size - width x height x depth in cm.
Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.



Key to amplifiers
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Size - width x height x depth in cm.
Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Aiwa XA-003	140	Int	N	40	MM,2L,1T	Y	N	-	2 speaker circuits
Aiwa XA-950	230	Int	N	100	MM/MC,2L,2T	Y	Y	-	2 speaker circuits
Alchemist Kraken/pre Anniv	0	Pre	N	N	MM,3L,2T	N	N	25,9,25	Stainless steel/gold finish
Alchemist Kraken/Pwr Anniv	0	Pwr	N	60	-	N	N	32,9,25	Stainless steel/gold finish
Alchemist Kraken/Pre	380	Pwr	N	60	-	-	-	32,9,25	Bridgable
Alchemist Kraken/mono	380	Pwr	N	60	-	N	N	32,9,25	
Alchemist Kraken	395	Pre	N	-	5L,1T	N	N	25,9,25	Bridging circuit built-in
Alchemist Kraken/Pwr	399	Int	N	60	3L,2T	N	N	32,9,25	MM £45 option
Alchemist Kraken Anniv	499	Int	N	60	MM,3L,2T	N	N	25,9,25	Stainless steel/gold finish
Alchemist Forseti	899	Int	N	160	4L,2T	N	N	47,10,39	
Alchemist Freya	1020	Pre	N	-	6L,1T	N	N	31,7,30	
Alchemist Odin	1020	Pwr	N	80	-	-	-	31,14,30	Stereo
Alchemist Genesis	1525	Pwr	N	110	-	-	-	25,14,30	Pair monoblocks
AMC AV81 Control	289	Pre	Y	-	8L,2T	N	Y	-	
AMC 2445	299	Pwr	N	45	-	-	-	-	4 channels
AMC 1030	379	Pre	N	-	MM	N	N	-	
AMC 2030	449	Pwr	N	30	-	-	-	-	
AMC S84	479	Pre	Y	-	8L	N	Y	-	Multiroom, bal/unbal inputs
AMC AV81 H.T. Control	499	Pre	Y	-	8L,2T	N	N	-	As AV81 plus Dolby Pro Logic
AMC CVT3030	529	Int	N	30	6L,1T	Y	N	-	Tube amp
Analogue Saturn	75	Pre	N	-	MM	N	N	-	
Analogue Saturn MC	75	Pre	N	-	MC	N	N	-	
Analogue Jupiter	330	Int	N	30	MM,4L,1T	N	N	-	
Arcam Alpha 5	230	Int	N	40	MM,3L,2T	Y	N	43,8,30	Bypassable tone controls
Arcam Alpha 6	330	Int	N	50	MM,3L,2T	Y	Y	43,8,30	Remote volume facility
Arcam Delta 290P	400	Pwr	N	75	-	Y	N	43,9,30	
Arcam Delta 290	480	Int	N	75	4L,2T	Y	Y	43,9,32	Opt MM/MC phono module
Arcam Delta 110S	520	Pre	N	-	MM/MC,3L,2T	Y	Y	43,7,30	As Delta 110, w/o DAC
Arcam Delta 120.2	550	Pwr	N	100	-	Y	N	43,9,30	Bridgable
Arcam Delta 110	750	Pre	N	-	MM/MC,2L,2T	Y	Y	43,7,30	On-board DAC, 2 inputs
Arion EOS	899	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra	999	Int	N	18	4L,1T	N	N	-	Class A valve
Arion Eros Line	1050	Pre	N	-	4L,1T	N	N	-	Dual mono construction
Arion EOS Export	1099	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra Export	1199	Int	N	18	4L,1T	N	N	-	Class A valve amp
Arion Triton	1250	Pwr	N	10	-	-	-	-	Triode, volume control
Arion Eros Phono	1250	Pre	N	-	3L,1T	N	N	-	Dual mono construction
Arion Tual Line	1350	Int	N	10	4L,1T	N	N	-	Triode Class A valve amp
Arion Tycho	1650	Pwr	N	50	-	-	-	-	Pure Class A
Art Audio Conductor H'phone	400	-	-	-	-	Y	N	-	Single ended triode Class A
Art Audio VPA	750	Pre	N	-	MM/MC	N	N	-	
Art Audio VPL	816	Pre	N	-	6L,2T	N	N	-	
Art Audio VP1	952	Pre	N	-	MM,5L,2T	N	N	-	
Art Audio Conductor	1000	Pre	N	-	6L,2T	N	N	-	Twin valve PSU
Art Audio Quintet	1393	Pwr	N	15	-	-	-	-	Class A triode/pentode
Art Audio Conductor Phono	1500	Pre	N	-	MM/MC	N	N	-	Separate PSU, upgradable
Art Audio Conductor Export	1500	Pre	N	-	6L,2T	Y	Y	-	Separate PSU, upgradable
Art Audio Concerto	1669	Pwr	N	50	-	-	-	-	2x mono triode/pentode
Art Audio Tempo	2398	Pwr	N	30	-	-	-	-	2x mono Class A triode
Art Audio Maestro	3524	Pwr	N	100	-	-	-	-	2x mono triode/pentode
Art Audio Integra	11644	Int	N	30	5L,2T	N	N	-	Class A Pentode
Audio Innovation L1	299	Pre	N	-	3L,1T	N	N	25,10,30	
Audio Innovation Alto	329	Int	N	35	4L,2T	N	N	43,8,30	
Audio Innovation Ser 200	349	Pre	N	-	MM,3L,T	N	N	50,12,30	
Audio Innovation T2	399	Pre	N	-	MC	N	N	12,16,8	Phono stepup
Audio Innovation Ser 200	499	Pwr	N	12	-	-	-	50,12,30	
Audio Innovation Ser 300	499	Int	N	10	MM,3L,1T	N	N	50,12,30	
Audio Innovation P2	679	Pre	N	-	MM	N	N	50,12,30	Phono stage
Audio Innovation L2	699	Pre	N	-	4L,1T	N	N	50,12,30	
Audio Innovation Ser 800	849	Pwr	N	25	-	-	-	41,15,34	
Audio I Classic 25	899	Int	N	25	4L,1T	N	N	46,15,34	Kit amplifier
Audio Innovation P2MC	899	Pre	N	-	MM/MC	N	N	50,12,30	Phono stage
Audio Innovation Ser 500	999	Int	N	25	MM,3L,2T	N	N	41,15,34	
Audio Innovation Ser 700	999	Int	N	25	4L,1T	N	N	41,15,34	
Audio Innovation 1000	1499	Pwr	N	50	-	-	-	41,15,34	Monoblocks
Audio I First Audio	1549	Pwr	N	7.5	-	-	-	41,15,34	
Audio Innovation 1000SE	2249	Pwr	N	50	-	-	-	41,15,34	Silver circuit board
Audio I 2nd Audio	2999	Pwr	N	15	-	-	-	41,15,34	Monoblocks
Audio Note Ongaku	22411	Int	N	26	6L	N	N	-	Single-ended Class A tube
Audio Note Oto	1250	Int	N	24	MM/MC,4L,1T	N	N	-	
Audio Research LS-3	1599	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research PH-1	1649	Pre	N	-	MM,1T	N	N	48,14,26	Phono preamp
Audio Research LS-3b	2250	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research VT60	2430	Pwr	N	35	-	-	-	-	Single ended tube mono
Audio Research LS-2	2796	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input/hybrid
Audio Research D-200	2800	Pwr	N	110	-	-	-	48,14,31	Single ended, balanced
Audio Research SP9 II	2850	Pre	N	-	MM/MC,4L,2T	N	N	48,14,26	Hybrid
Audio Research PH-2	2895	Pre	N	-	MM/MC	N	N	48,14,26	Balanced
Audio Research LS-2b	3355	Pre	N	-	5L,1T	N	N	48,14,26	1 balanced direct input/hybrid
Audio Research V35	3355	Pwr	N	30	-	-	-	48,18,37	Balanced in, hybrid
Audio Research V70	4480	Pwr	N	60	-	-	-	48,18,40	Balanced in, hybrid
Audio Research D-300	4800	Pwr	N	160	-	-	-	48,18,33	Single ended, balanced
Audio Research LS-5	5290	Pre	N	-	5L,1T	N	N	48,14,30	Full balanced in/out
Audio Research VT130	5600	Pwr	N	65	-	-	-	-	Stereo tube, balanced
Audio Research D-400II	6200	Pwr	N	200	-	-	-	48,23,33	Single ended, balanced
Audio Research V140	8960	Pwr	N	120	-	-	-	48,22,30	Monoblocks, hybrid
Audio Research VT150	14900	Pwr	N	130	-	-	-	37,31,56	Monoblocks, tube
Audiolab 8000A	500	Int	N	60	MM,MC,1T,3T	Y	N	45,8,36	Preout/main in

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Audiolab 8000C	520	Pre	N	-	MM/MC,1T,3T	Y	N	45,8,36	2 pairs of outputs
Audiolab 8000P	700	Pwr	-	100	-	-	N	45,8,36	Bi-wire speaker terminals
Audiolab 8000M	750	Pwr	-	125	-	-	N	45,8,36	Single monoblock
Audiolab 8000PPA	850	Pre	N	-	MM/MC	-	-	45,8,36	Phono preamplifier
Audiolab 8000Q	1000	PRE	N	-	3L,2T	Y	Y	45,8,36	'Pure Direct' signal path
Audiolink Sterling II	350	Int	N	60	MM/MC	N	N	43,7,270	Available in chrome
Audiolink P400	467	Pre	N	-	4L	N	N	43,7,270	Available in chrome
Audiolink PR401	583	Pwr	N	100	-	-	N	43,10,37	Available in chrome
Aura VABO	280	Int	N	45	5L,1T	Y	N	43,6,31	Chrome finish, £50 extra
Aura VA100 II	330	Int	N	70	MM,4L,1T	Y	N	43,6,31	Chrome finish add £50
AWI S2000MA	599	Pwr	-	90	-	-	-	-	
AWI S2000MP	749	Pre	N	-	5L,1T	-	-	31,25,9	
AWI S2000M1	799	Int	N	100	4L, 1T	-	Y	31,25,9	
AWI S2000MM	1099	Pwr	-	150	-	-	-	-	2x monoblocks
AWI S2000A	1499	Pwr	N	250	-	-	-	43,50,9	
Beard VM-P	795	Pre	N	-	MM/MC,3L,1T	N	N	-	Hybrid tube/MOSFET
Beard CA-35	995	Pre	N	-	MM/MC,3L,1T	N	N	-	Tube Class A
Beard VM-50	995	Int	N	50	MM/MC,3L,1T	N	N	-	Hybrid tube/MOSFET
Beard P-35	1395	Pwr	-	35	-	-	-	-	Tube, Class A
Beard CA-506	1695	Pre	N	-	MM/MC,3L,2T	N	N	-	Tube, Class A
Beard A-70	2895	Pwr	-	70	-	-	-	-	Monoblock, tube, Class A
Beard M-1000	5900	Pwr	N	100	-	-	-	-	Pair monoblocks
Bryston 4	641	Pre	Y	-	4L,1T	N	N	48,5,25	
Bryston BP1	673	Pre	Y	-	MM or MC	N	N	48,5,25	Phono stepup, bal & unbal
Bryston 2B-LP	750	Pwr	Y	75	-	N	N	48,5,25	Bridgable
Bryston BP4	802	Pre	Y	-	4L,1T	N	N	48,5,25	Balanced out
Bryston BP5	889	Pre	Y	-	MM/MC,3L,1T	N	N	48,5,25	MM or MC, balanced out
Bryston BP20	1126	Pre	Y	-	8L,1T	N	N	48,5,25	Balanced in/out
Bryston 3B-NRB	1159	Pwr	Y	150	-	N	N	48,13,23	Bridgable, bal & unbalanced
Bryston THX3B	1262	Pwr	Y	150	-	N	N	48,13,23	2 channels, THX approved
Bryston 4B-NRB	1756	Pwr	Y	300	-	N	N	48,13,39	Bridgable, bal & unbalanced
Bryston 7B-NRB	1815	Pwr	Y	500	-	N	N	48,13,39	Single monoblock
Bryston THX4B	1858	Pwr	Y	300	-	N	N	48,13,39	2 channels, THX approved
Bryston THX7B	1917	Pwr	Y	500	-	N	N	48,13,39	1 channel, THX approved
Bryston 8B-NRB	2195	Pwr	Y	150	-	N	N	48,13,39	4 channels, bridgeable
Bryston THX8B	2400	Pwr	Y	150	-	N	N	48,13,39	4 channels, THX approved
C.R. De Kalypto	499	Int	N	15	5L	-	-	-	
C.R. De Romulus	998	Int	N	35	5L	-	-	-	
CAT SL1 Sig line	5500	Pre	N	-	3L,1T	-	N	31,48,14	2 outputs, valve
CAT SL1 Sig									



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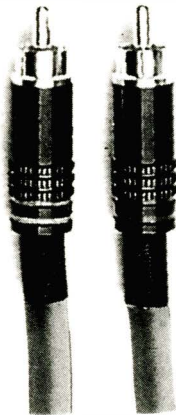
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Arion Acoustics, Audio Innovations, Audio Note, C.A.T., Credo, Kinshaw, Lumley Reference, Triangle, YBA, Impulse, Lumley Monitor, Townshend, Counterpoint, AudioMeca, Micromega, Graham, Pro-Ject, Wilson/Benesch, Ortofon, Transfiguration, Cogan Hall, Goertz, Isolda, Lieder, Revelation, Silver Sounds, XLO, Appollo, Base, Frameworks

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Key to amplifiers Price - typical retail, to nearest pound. Power - output power in watts, per channel, RMS. Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape. A/V - includes Dolby Surround or Pro Logic decoder and amplification.

Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier. Headphone - Y - yes, N - no. Remote - Y - yes, N - no. Size - width x height x depth in cm. Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.



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Table with columns: Model, Price, Type, AV, Power, Inputs, Headphones, Remote, Size, Special. Contains a list of amplifiers such as Counterpoint SA-5000E, Denon PMA-250 III, and Electrocompaniet ECP-1.

Table with columns: Model, Price, Type, AV, Power, Inputs, Headphones, Remote, Size, Special. Contains a list of amplifiers such as Electro AW250DMB-SF, Harman-Kardon HK6250, and Kenwood KA-1060.

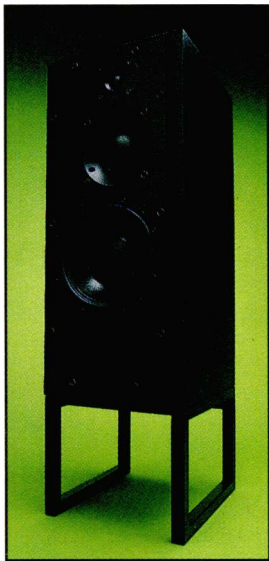
Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory. Audiolab 8000A 450 int N 60 MM,MC,1T,3T Y N 45,8,36 Preout/main in

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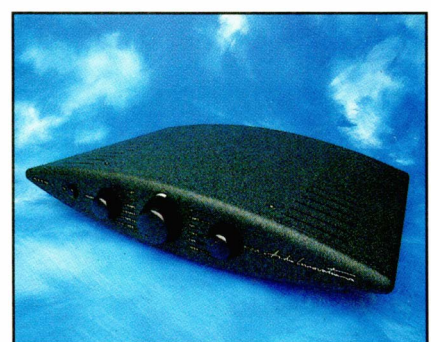
equipment include Mike Oldfield, Peter Gabriel, Paul McCartney, Tina Turner and Pink Floyd.

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But we offer systems at most prices. For example, we do a CD-based system, consisting of AMC CD player, Jupiter amp (made in Bath) and a pair of Ruark Templar speakers for £1,200 including cables and, if that's too much, we regularly have good



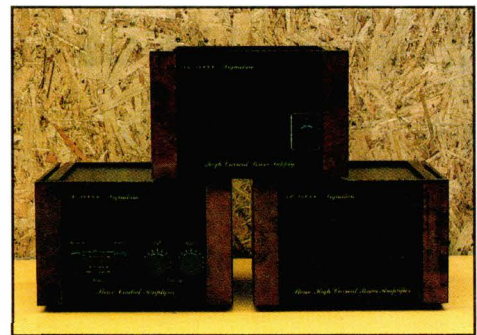
quality second hand equipment to save you money.

We have the Ruark range of speakers from £300 to £2,500, the Heybrook range (from Plymouth) from £130 to £1,100. We even have Triangle speakers from France, Jamo sub-woofers from Denmark, plus Rel sub-woofers from Wales. We have amps from AVI, Heybrook, Sugden, Audio Innovations (valve), Cadence (valve), Chord, Electrcompaniet (Norway) and Exposure.

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Key to amplifiers
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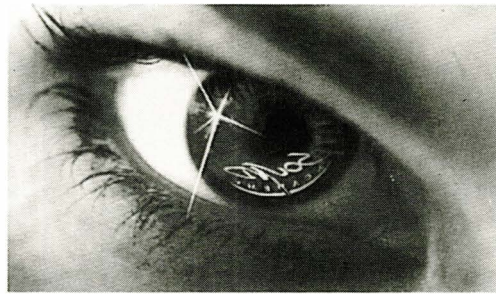
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Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Krell KRCs	6949	Pre	N	-	6L,1T	N	Y	48,7,36	Opt MM/MC stage
Krell KSA-200s	7987	Pwr	N	200	-	-	-	48,22,54	Sustained Plateau Bias
Krell KSA-300s	9500	Pwr	N	300	-	-	-	48,22,62	Sustained Plateau Bias
Krell K.A.S. 2	18804	Pwr	N	200	-	N	N	-	2x mono
Krell K.A.S.	29500	Pwr	N	350	-	-	-	48,34,64	Monoblocks
Lecson 380X	255	Int	N	35	MM/MC,6L	N	N	44,6,27	
Lecson Stereo 383X	295	Int	N	60	MM/MC,6L	Y	N	44,6,27	
Lecson Quattra	420	Int	N	30	MM/MC + N/A	N	N	44,6,27	Pre out/main in
Lecson Quattra Plus	655	Int	N	50	MM/MC + N/A	N	N	44,6,27	Separate PSU
LFD Phonostage MMO	399	Pre	N	-	MM, MC	N	N	30,6,37	Switchable MM/MC
LFD Integrated Zero	499	Int	N	50	5L,1T	N	N	30,6,37	Hand made, custom parts
LFD Linestage LSO	499	Pre	N	-	5L,1T	N	N	30,6,37	Zero feedback
LFD Powerstage PA0	499	Pwr	N	50	-	N	N	30,6,37	Stereo MOSFET
LFD Int. Zero (Ph)	679	Int	N	50	MM/MC,5L,1T	N	N	30,6,37	Phono version of Int. Zero
LFD Int. Zero LE	799	Int	N	60	5L,1T	N	N	43,7,33	
LFD MC1 Phonostage	949	Pre	N	-	MC	N	N	30,7,36	Discrete circuit
LFD LS1 Linestage	999	Pre	N	-	4L,1T	N	N	48,7,33	Zero feedback
LFD PA1 Powerstage	999	Pwr	N	60	-	N	N	48,7,33	MOSFETs, custom parts
LFD PPS	999	Pre	N	-	2L,1T	N	N	13,6,27	Switched attenuator, passive
LFD Integrated 1	1099	Int	N	65	MM/MC,4L,1T	N	N	48,7,37	More powerful Int Zero
LFD Phonostage MC2	1499	Pre	N	-	MC	N	N	30,7,36	Hand tuned MC1
LFD Linestage LS2	1599	Pre	N	-	4L,1T	N	N	48,7,37	Hand tuned LS1
LFD Powerstage PA2	1599	Pwr	N	75	-	N	N	48,7,37	Hand tuned PA1
LFD Linestage LS2P	1750	Pre	N	-	MM/MC,4L,1T	N	N	48,7,37	As LS2 with phono stage
LFD Linestage LSB	1999	Pre	N	-	4L,1T	N	N	48,7,37	Balanced LS2
LFD Powerstage PA2M	1999	Pwr	N	90	-	N	N	30,7,37	Mono PA2
LFD Disc Preamp	4499	Pre	N	-	MC	N	N	30,5,36	Battery powered
Linn Majik-1 (Line)	524	Int	N	33	4L,2T	Y	N	32,8,33	Works as pre/int multi room
Linn LK100	549	Pwr	N	50	-	-	-	32,8,33	Stereo
Linn Majik-1 (Phono)	593	Int	N	33	MM,MC,3L,2T	Y	N	32,8,33	As line Majik
Linn Kairn Pro	998	Pre	N	-	4L, 2T	N	N	32,8,33	Multi-room compatible
Linn Kairn Preamp	1398	Pre	N	-	MM, MC 3L,2T	N	N	32,8,32	Multi-room compatible
Linn Klout	1895	Pwr	N	80	-	-	-	32,8,33	Stereo, tri-wire connectors
Lumley Reference PP70	325	Pre	N	-	6L,1T	-	N	36,46,6	Passive, bolts to ST70
Lumley Reference PP40	325	Pre	N	-	6L,1T	-	N	29,40,6	Bolts to ST40
Lumley Reference PP1	325	Pre	N	-	6L,1T	-	-	29,44,6	Passive, stand alone
Lumley Reference LV1	1000	Pre	N	-	6L,1T	N	N	29,44,6	Active valve circuit
Lumley Reference ST40	1250	Pwr	N	40	30,40,17	N	N	-	Pentode
Lumley Reference PV1	1500	Pre	N	-	MM,5L,1T	N	N	-	Phono version of LV1
Lumley Reference ST70	1950	Pwr	N	70	-	N	N	36,46,18	Switchable triode/pentode
Lumley Reference M120	3200	Pwr	N	120	-	-	-	29,44,18	2xmono, triode/pentode
Lumley Reference M500	12000	Pwr	N	-	-	-	-	35,80,30	2xmono, triode/pentode
Luxman L570	3750	Int	N	50	MM/MC,4L,3T	N	N	44,18,47	Class A
Lynwood Opal	685	Int	N	80	7L,1T	N	N	-	
Lynwood Ruby	985	Pwr	N	120	-	-	-	-	
Magnum IA120	249	Int	N	50	MM,5L,2T	Y	N	-	
Magnum Quartet	329	Int	N	36	MM,3L,2T	Y	N	-	
Magnum MF125	515	Pwr	N	140	-	-	-	-	Monoblocks
Magnum MF300	595	Pwr	N	180	-	-	-	-	Monoblocks
Magnum Class A	599	Int	N	60	MM/MC,3L,1T	N	N	-	
Magnum MA500	1295	Pwr	N	280	-	-	-	-	Monoblocks
Marantz PM-44SE	180	Int	N	45	MM,3L,2T	Y	N	42,14,28	Audiophile components
Marantz PM44SEII	200	Int	N	45	MM,3L,2T	Y	N	42,14,28	
Marantz PM-43	200	Int	N	55	MM,3L,2T	Y	N	42,14,30	
Marantz MA-500	250	Pwr	N	125	-	-	-	9,15,45	D-bus, monoblocks, bridgable
Marantz PM-53	250	Int	N	65	MM,3L,2T	Y	Y	42,14,30	
Marantz PM-63	300	Int	N	70	MM,3L,2T	Y	Y	42,14,30	
Marantz PM-54SE	329	Int	N	65	MM/MC,3L,2T	Y	N	42,16,34	Audiophile components
Marantz PM-700AV	450	Int	Y	45	MM,5L,2T	Y	Y	42,16,34	Dolby Pro Logic
Marantz PM-80 II	480	Int	N	100	MM/MC,4L,2T	Y	N	42,17,34	
Marantz PM-80SE	650	Int	N	110	MM/MC,3L,3T	Y	N	42,17,34	Audiophile components
Marantz AV-500	699	Pre	Y	-	MM,7L,2T	N	Y	42,10,34	Dolby Pro Logic
Mark Levinson No 25	2950	Pre	N	-	MM,3L,2T	N	N	-	
Mark Levinson 29	3450	Pwr	N	50	-	-	-	-	
Mark Levinson 27.5	5399	Pwr	N	100	-	-	-	-	
Mark Levinson No 26	5450	Pre	N	-	MM,3L,2T	N	N	-	
Mark Levinson 23.5	7399	Pwr	N	200	-	-	-	-	
Mark Levinson 20.6	15790	Pwr	N	100	-	-	-	-	Monoblocks, Class A
Matisse Fantasy	2300	Pre	Y	-	6L,2T	N	N	-	Line stage
Matisse Reference	3500	Pre	Y	-	MM/MC,5L,2T	N	N	-	
McIntosh MC7100/2	1095	Pwr	N	100	-	-	-	-	
McIntosh C712	1295	Pre	N	-	6L, 2T	Y	Y	-	
McIntosh C38	2095	Pre	N	-	MM, 5L, 3T	Y	Y	-	Multi-room, balanced out
McIntosh MC7150	2295	Pwr	N	150	-	-	-	-	
McIntosh C39	2795	Pre	Y	-	MM, 10L (6 Vid)	Y	Y	-	Two zone, THX compatible
McIntosh C40	2795	Pre	N	-	MM, 6L, 3T	Y	N	-	Balanced in/out
McIntosh MC7106	2995	Pwr	Y	100	-	N	N	-	Six channel THX amp
McIntosh MC7300	3195	Pwr	N	300	-	N	N	-	
McIntosh MC275	3595	Pwr	N	75	-	N	N	-	Classic valve amp
McIntosh MC2600	5395	Pwr	N	600	-	N	N	-	
McIntosh MC1000	9595	Pwr	N	100	-	N	N	-	Monoblocks
Meridian 501	595	Pre	N	-	MM,4L,T	Y	N	33,9,34	MC option, system handset
Meridian 555	595	Pwr	N	60	-	N	N	33,9,32	Stereo
Meridian 562	625	Pre	N	-	MM,8L,T,6D	N	N	33,9,34	Digital main out. MC option
Meridian 551	695	Int	N	55	MM,4L,T	-	-	33,9,34	MC option
Meridian 501V	745	Pre	Y	-	MM,4L,T	Y	N	33,9,34	As 501, plus video switching
Meridian 562V	825	Pre	Y	-	MM,8L,T,6D	N	N	33,9,34	As 562, plus video switching
Meridian 601	2750	Pre	N	-	MM,4L,T	Y	Y	-	DSP tone control, MC option

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Metaxas Ikarus II	1350	Int	N	40	MM/MC,3L,1T	N	N	40,7,40	
Metaxas Charisma	1525	Pre	N	-	MM/MC,3L,2T	-	N	36,6,29	Separate PSU
Metaxas Iraklis	1625	Pwr	N	50	-	-	-	43,18,37	
Metaxas Marquis	2250	Pre	N	-	MM/MC,3L,2T	-	N	29,7,45	Separate PSU
Metaxas Solitaire	2350	Pwr	N	130	-	-	-	52,19,42	
Metaxas Opulence	5500	Pre	N	-	MM/MC,3L,2T	-	N	39,7,45	Separate mains isolated PSU
Metaxas Soliloquy	5990	Pwr	N	100	-	-	-	52,19,42	Pair monoblocks
Michell Iso	412	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Argo	715	Pre	N	-	3L,1T	N	N	33,7,19	2 pairs outputs
Michell Iso HR	879	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Alecto Stereo	1150	Pwr	N	50	-	-	-	32,20,36	
Michell Argo HR	1339	Pre	N	-	3L,1T	N	N	36,8,22	2 pairs outputs
Michell Alecto Mono	1989	Pwr	N	100	-	-	-	32,20,36	
Michi RHC-10	795	Pre	N	-	5L	-	-	47,8,34	Passive
Michi RHB-05	995	Pwr	N	100	-	-	-	47,8,36	
Michi RHQ-10	995	Pre	N	-	MM,MC	-	-	47,8,34	Phono equaliser
Michi RHA-10	995	Pre	N	-	5L	-	Y	47,8,34	Active
Michi RHB-10	1650	Pwr	N	200	-	-	-	47,19,37	
Ministrel Ultra Linear	899	INT	N	30	3L,1T	N	N	-	Low feedback hybrid
Mission PSX-R	300	-	N	-	-	-	-	22,8,36	Outdoor PSU
Mission Cyrus III	500	Int	N	50	MM,5L,1T	Y	N	22,8,36	PSX-R outdoor PSU option
Monrio ADN	595	Pre	N	-	MM/MC	N	N	-	Phono preamp
Monrio Primus	895	Pre	N	-	6L,1T	N	N	-	Line only preamp
Monrio MC-25	995	Pwr	N	80	-	-	-	-	Dual mono construction
Monrio Cento	1495	Pwr	N	135	-	-	-	-	Dual mono construction
Monrio MC-205	1595	Int	N	80	6L,1T	N	N	-	Inc pre-out sockets
Moth 30 Passive	149	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 RIAA	199	Pre	N	-	MM/MC	N	N	5,10,35	
Moth 30 Series Power	239	Pwr	N	30	-	-	-	5,10,35	
Moth 30 Active	249	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 RIAA 100VA	299	Pre	N	-	MM/MC	N	N	5,10,35	
Moth 30 Integrated	320	Int	N	30	8L,T	N	N	8,18,35	
Moth 30 Active 100VA	349	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 Mono/40	459	Pwr	N	40	-	-	-	5,10,35	2x monoblocks
Moth 30 Stereo/60	549	Pwr	N	60	-	-	-	5,15,35	2x monoblocks
Moth 30 Mono/100	879	Pwr	N	100	-	-	-	5,15,35	2x mono, separate PSU
Mus-Fid A1 Final Edition	399	Int	N	40	MM/MC,3L,1T	N	N	41,6,25	Separate PSU, limited edition
Musical Fidelity E200	599	Pre	N	-	5L,2T	Y	Y	44,12,35	Optional phono/DAC module
Musical Fidelity E100	599	Int	N	7					

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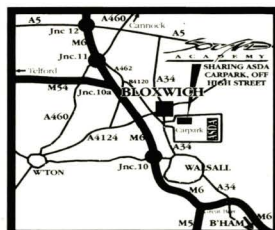
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Key to amplifiers
Price - typical retail, to nearest pound.
Power - output power in watts, per channel, RMS.
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.
A/V - includes Dolby Surround or Pro Logic decoder and amplification.

Type - Int - integrated, Pre - preamplifier, Pwr - power amplifier.
Headphone - Y - yes, N - no.
Remote - Y - yes, N - no.
Size - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to cassette decks
Price - typical retail, to nearest pound.
Type - T - twin transports, allowing tape to tape dubbing, sequential play etc; S - Single transport, AR - auto-reverse.
Dolby - B (10dB noise reduction), C (20dB), S (24dB). B is standard for prerecorded material.

Heads - 2 - combination record/play heads; 3 - independent record/play heads, allowing real time off tape monitoring.
Size - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Onix OA401	400	Pwr	-	50				75,23,37	With internal supply for OA24
Onix OA21S	430	Int	N	50	MM/MC,3L,1T	N	N	75,23,37	
Onix OA31	480	Int	N	60	MM/MC,4L,1T	Y	N	43,77,33	
Onix OA601	699	Pwr	-	70				75,46,36	Regulated PSU
Onix OA801	849	Pwr	-	190				75,46,36	2x monoblocks, massive PSU
Onkyo A801	200	Int	N	40	MM,3L,2T	Y	N	46,12,33	
Onkyo A803	260	Int	N	60	MM/MC,3L,2T	Y	Y	46,12,33	
Onkyo A-911	350	Int	N	70	MM,3L,2T	Y	Y	28,13,33	Mini component, 4ohm rating
Onkyo A850	370	Int	N	60	MM/MC,3L,2T	Y	Y	46,15,35	
Orelle SC-200	400	Pre	N	-	6L,1T	N	N	44,7,28	MM/MC option
Orelle SP-150	499	Pwr	-	75				44,7,28	MOSFET, vdH wiring
Papworth PPA6	0	Pre	N	-	6L	N	N	25,13,33	Bi-mono valve
Papworth PPA6/P	0	Pre	N	-	MM,MC,6L	N	N	25,13,33	Bi-mono valve
Papworth TVA50	1425	Pwr	N	50				43,19,33	Tube stereo
Papworth M100	2645	Pwr	N	100				25,17,38	Tube monoblock
Papworth M200	3825	Pwr	N	200				46,20,31	Tube monoblock
Philips FA930	200	Int	N	65	MM,2L,3T	Y	Y	44,14,30	
Pioneer A-103	130	Int	N	30	MM,3L,2T	Y	N	42,11,31	
Pioneer A-203	150	Int	N	45	MM,3L,2T	Y	N	42,11,31	
Pioneer A-303R	200	Int	N	45	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-300X	230	Int	N	40	MM,3L,2T	N	N	42,13,36	
Pioneer A-400	280	Int	N	60	MM/MC,3L,2T	Y	N	42,13,36	
Pioneer A-400X	300	Int	N	50	MM/MC,4,2	Y	N	42,13,36	
Pioneer A-503R	300	Int	N	70	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-602	350	Int	N	80	MM/MC,3L,3T	Y	N	42,17,44	
Pioneer VSA-701S	500	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic
Pioneer VSA-D802S	600	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic, DSP
Project Model 7	259	Int	N	40	MM,3L,2T	N	N	-	
PS Audio 6.1	799	Pre	N	-	4L,1T	N	N	43,6,19	Outboard PSU
PS Audio Phono Link	799	Pre	N	-	MM/MC	N	N	43,6,19	Outboard PSU
PS Audio 5.6	1090	Pre	N	-	MM/MC,3L,2T	N	N	43,6,19	Outboard PSU
PS Audio 100 Delta	1499	Pwr	-	120				42,15,35	
PS Audio 200 Delta	2279	Pwr	-	200				42,15,45	
PS Audio 200b Delta	2490	Pwr	-	200				42,15,45	
PS Audio 250 Delta	2980	Pwr	-	250				42,15,45	Monoblocks
QED Vector One	199	Pre	N	-	4L,1T	N	N	-	
QED C-300CD	259	Pre	N	-	MM/MC,4L,1T	N	N	-	
QED Vector Reference	299	Pre	N	-	4L,1T	N	N	-	
QED C-300PA	329	Pre	N	-	MM/MC,4L,1T	N	N	-	
Quad 306	350	Pwr	N	70				33,7,21	Stereo power amp
Quad 34	398	Pre	N	-	MM,2L,T	N	N	33,7,21	Optional MC phono input
Quad 77	595	INT	N	70	2L,T	-	-	33,6,30	System remote £279
Quad 606	690	Pwr	N	140				33,14,24	Stereo power amp
Quad 66	863	Pre	N	35	MM,4L,2T	N	Y	33,8,26	Variable inputs, inc R/C
Rega Brio	229	Int	N	30	MM,3L,1T	N	N	43,7,15	
Rega Elex	398	Int	N	50	MM,3L,1T	N	N	43,7,25	
Rega Elicit	730	Int	N	70	MM/MC,3L,1T	N	N	43,7,25	Full dual mono
Roksan ROK-L2	995	Pre	N	-	4L,1T	N	N	43,8,33	
Roksan ROK-S1	1495	Pwr	N	50				-	
Roksan ROK-L1	2250	Pre	N	-	4L,1T	N	N	43,8,33	
Roksan ROK-M1	4500	Pwr	N	120	4B,11,34	N	N	-	Pair monoblocks
Rose RV-23	450	Pre	N	-	MM,2L,1T	N	N	33,9,26	Tube, zero feedback
Rose RV-23S	525	Pre	N	-	MM/MC,2L,2T	N	N	33,9,26	Tube, separate PSU
Rose RP-190 (Dual Mode)	550	Pwr	N	75				33,9,30	Low feedback monoblock (x2)
Rotel RC970BX	150	Pre	N	-	3L,2T	Y	N	44,8,29	
Rotel RA930AX	175	Int	N	30	MM,3L1T	Y	N	44,9,31	
Rotel RA935BX	225	Int	N	50	3L,2T	Y	N	44,10,35	Separate listen/rec selectors
Rotel RB970BX	225	Pwr	N	60				44,8,29	
Rotel RA960BX2	325	Int	N	60	MM/MC,3L,2T	Y	N	44,9,35	Separate listen/rec selectors
Rotel RC980BX	350	Pre	N	-	MM/MC,3L,2T	Y	N	44,7,33	
Rotel RA980BX	425	Int	N	100	MM/MC,3L,2T	Y	N	44,12,34	Separate listen/rec selectors
Rotel RB980BX	450	Pwr	N	120				44,12,33	
Rotel RC990BX	500	Pre	N	-	MM/MC,3L,2T	Y	Y	44,7,33	
Rotel RB990BX	750	Pwr	N	200				44,12,38	
Sansui AU-X117	170	Int	N	30	MM,3L,1T	Y	N	-	
Sansui AU-X3172	275	Int	N	40	MM,3L,1T	Y	N	-	
Sansui AU-X417R	280	Int	N	45	MM,3L,2T	Y	N	-	
Sansui AU-X517R	450	Int	N	60	MM/MC,3L,2T	Y	Y	-	
Sansui AU-Alpha 607	1300	Int	N	90	MM/MC,2L,1T	Y	Y	-	
Sansui AU-Alpha707	1500	Int	N	90	MM/MC,4L3T	Y	Y	-	Built in BS DAC
Sentec PP9 RIAA MM	500	Pre	N	-	MM	N	N	5,12,23	Phono step-up - MM
Sentec PP9 RIAA MC	600	Pre	N	-	MC	N	N	5,12,23	Phono step-up - MC
Sentec SC9	800	Pre	N	-	4L,2T	Y	N	34,7,15	
Sentec PA9	1000	Pwr	N	60				20,8,30	Monoblocks
Shearpe Phase II	549	Int	N	50	4L,2T	N	N	-	
Shearpe Phase 1 Pre	1099	Pre	N	-	MM/MC/4L,2T	N	N	-	
Shearpe Phase 1 Power	1199	Pwr	-	80				-	Dual mono
Sherwood AI 2210	60	Int	N	30	MM,3L,1T	Y	N	-	
Sherwood AI 1110	100	Int	N	55	MM,4L,1T	Y	N	-	
Sherwood AI 5010	170	Int	N	70	MM,3L,2T	Y	N	-	
Sherwood AM/AVP8500	800	-	Y	230		Y	Y	-	A/V Pre/power amp
Sirius Control Unit	720	Pre	N	-	6L,2T	N	N	23,5,19	Passive preamp
Sirius 7B	2492	Pwr	N	200				30,23,19	1x monoblock
Sonic Link DM20	349	Int	N	25	MM,3L,1T	Y	N	23,8,43	
Sonic Link DM20 Gold	598	Int	N	30	MM/MC,3L,1T	Y	N	23,8,43	
Sonic Link DM30	725	Int	N	25	MM/MC,3L,1T	N	N	23,8,43	
Sony TAF211B	150	Int	N	30	MM/2L	Y	N	43,14,31	Source direct
Sony TAF244B	200	Int	N	40	MM/2L	Y	N	43,14,31	MOSFET power stage

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Sony TAF444E	250	Int	N	50	MM,3L,2T	Y	N	43,15,38	
Sony TAF542E	300	Int	N	90	MM/MC,3L,2T	Y	N	43,15,38	UK optimised sound
Sony TA-AY570B	400	Int	Y	70	MM,4L,5T	Y	N	43,16,36	Dolby Pro Logic
Stemfoort Audio SF60	549	Int	N	60	4L,1T	N	N	43,8,35	Passive line amplifier
Stemfoort Audio SF100	849	Int	N	100	4L,1T	N	N	43,8,40	Passive line amplifier
Synergy 3080	0	N	15	MM	N	N	-	-	
Teac A-X1030	180	Int	N	40	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X3030	220	Int	N	60	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X5030	260	Int	N	75	MM/MC,3L,2T	Y	N	44,16,36	
Technics SU-VZ220	150	Int	N	40	MM,2L,1T	Y	N	43,13,32	A/B speaker select
Technics SU-VZ320	190	Int	N	50	MC/MM,3L,2T	Y	Y	43,13,32	
Technics SU-A600	200	Int	N	40	MC/MM,3L,2T	Y	N	43,13,32	
Technics SU-A700	250	Int	N	45	MC/MM,3L,2T	Y	Y	43,13,32	
Technics SU-A800	330	Int	N	55	MC/MM,3L,2T	N	Y	43,14,37	
Technics SU-A900II	400	Int	N	90	MC/MM,3L,2T	N	Y	43,14,37	
Technics SU-C2000	700	Pre	N	-		N	Y	45,13,35	
Technics SE-A2000	1050	Pwr	-	100		-	Y	45,19,44	Meters, R-Core, MOS AA
Tesseract TAADA	1500	Pre	N	-	MM/MC	N	N	-	
Tesseract TALA	1500	Pre	N	-	5L,1T	N	N	-	
Tesseract TAHA	1800	Pre	N	-	MC	Y	N	-	
Tesseract TAP-A	5300	Pre	N	-	MM,3L,2T	N	N	-	
Tesseract TAMP-60	7350	Pwr	-	60		-	-	-	2x Monoblocks
Thule IA50	599	Int	N	50	4L,1T	N	N	-	Fully balanced operation
Thule IA100	899	Int	N	100	4L,2T	N	N	-	Fully balanced operation
Triangle TE60	549	Int	N	60	5L,1T	Y	N	-	
Triangle TE60SE	649	Int	N	70	MM/MC,4L,1T	Y	N	-	
Triangle Nemo Allion 02	1550	Int	N	80	5L,2T	N	N	-	
Tube Tech Seer Line	575	Pre	N	-	5L,1T	N	N	35,8,25	
Tube Tech Seer Phono	649	Pre	N	-	MM,4L,1T	N	N	35,8,25	
TT Unisis Power Amp	1099	Pwr	N	30		N	N	35,17,27	Power amp to match Unisis
Tube Tech Prophet	1199	Pre	N	-	4L,1T	N	N	35,8,25	Two box pre, separate PSU
TT Unisis Super Line	1399	Int	N	30	4L,1T	N	N	35,17,27	Line level version of Unisis
Tube Tech Unisis	1399	Int	N	30	MM,3L,1T	N	N	35,17,27	
Tube Tech Genesis	2599	Pwr	N	100		N	N	35,15,27	2x monoblocks
Tube Tech Synergy	3900	Int	N	150	5L,1T	N	Y	47,18,47	
Woodside SC27 Line	705	Pre	N	-	2L,1T	N	N	-	
Woodside SC27 MM	881	Pre	N	-	MM,2L,1T	N	N	-	
Woodside ISA230 Disc	899	Int	N	30	MM,2L,1T	N	N	-	



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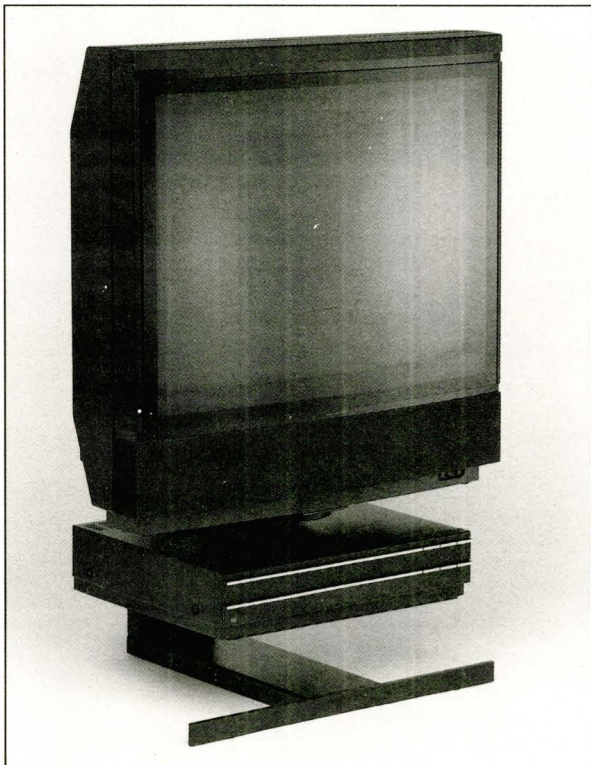
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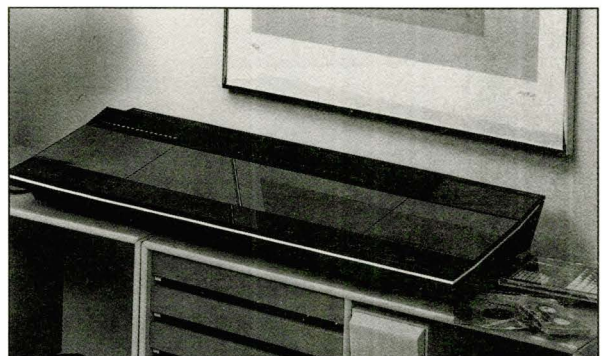
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Beosystem Overture £1800 ex Remote & WB



Beocentre 9300 £1500 ex Remote & Speakers

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Key to cassette decks
 Price - typical retail, to nearest pound.
 Type - T - twin transports, allowing tape to tape dubbing, sequential play etc; S - Single transport, AR - auto-reverse.
 Dolby - B (10dB noise reduction), C (20dB), S (24dB). B is standard for prerecorded material.

Heads - 2 - combination record/play heads; 3 - independent record/play heads, allowing real time off tape monitoring.
 Size - width x height x depth in cm.
 Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.



Key to compact disc players, transports and DACs
 Price - typical retail, to nearest pound.
 DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma, M - MASH, Hybrid - combines multibit and single bit.
 Outputs Digital: Opt - optical (usually Toslink), El - electrical (usually coaxial S/PDIF).

Remote Control - Y - yes, N - No.
 Size - width x height x depth in cm.
 Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Model	Price	Type	Dolby NR	Dolby HX Pro	Heads	Size	Special
CASSETTE DECKS							
Harman-Kardon DC5500	599	T	B,C	Y	2	45,13,35	
Harman-Kardon TD4600	699	S	B,C,S	Y	2	45,13,35	
Harman-Kardon DC5700	699	T	B,C	Y	2	45,13,35	Both transports record
Harman-Kardon TD4800	1299	S	B,C,S	Y	3	45,13,35	
JVC TD-W106BK	120	T	B	N	2	44,13,24	Twin, one recording deck
JVC TD-W208BK	170	T	B,C	Y	2	44,13,33	Twin, one recording deck
JVC TD-X372BK	170	S	B,C	Y	2	44,13,33	
JVC TD-W308BK	200	T,AR	B,C	Y	2	44,13,33	Twin, one recording deck
JVC TD-V562BK	220	S	B,C	Y	3	44,13,33	Cassette stabiliser
JVC TD-W708BK	250	T,AR	B,C	Y	2	44,13,33	Twin record/play
JVC TD-V662BK	270	S	B,C	Y	3	44,13,33	Dual capstan
Kenwood KX-3060	170	S	B,C	Y	2	44,12,37	Tape path stabiliser
Kenwood KX-W4060	180	T	B,C	Y	2	44,13,30	Computer controlled recording
Kenwood KX-W6060	200	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-5 60S	235	S	B,C,S	Y	2	44,12,30	Auto bias
Kenwood KX-W8 60	260	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-7060S	400	S	B,C	Y	3	44,13,30	Auto tape calibration
Marantz SD-53	200	S	B,C	Y	2	43,14,30	D-bus
Marantz SD-415	210	T	B,C	Y	2	43,14,30	D-bus, mic mixing
Marantz SD-63	269	S	B,C	Y	3	43,14,30	D-bus
NAD 602	200	S	B,C	Y	2	-	Play Trim
NAD Monitor 6100	299	S	B,C	Y	2	-	Play Trim, remote cntrl, Dyneq
Nakamichi DR-3	400	S	B,C	N	2	43,10,32	
Nakamichi DR-2	600	S	B,C	N	3	43,10,32	Diffused resonance transport
Nakamichi DR-1	850	S	B,C	N	3	43,10,32	Manual azimuth calibration
Nakamichi CR-7E	1995	S	B,C	N	3	44,14,30	Auto tape calibration, R/C
Nakamichi Dragon	2350	AR	B,C	N	3	45,14,30	Auto azimuth correct
Onkyo TA201	200	S	B,C	Y	2	46,12,13	
Onkyo TA-RW313	250	T	B,C	Y	2	46,12,31	
Onkyo KR-609	350	AR	B,C	Y	2	28,12,31	Mini component
Onkyo TA250	350	S	B,C	Y	3	46,12,31	
Onkyo K-W606	370	T,AR	B,C	Y	2	28,12,32	Mini component
Onkyo K-611	430	AR	B,C	Y	3	28,12,32	Mini component
Pioneer CT-S330	170	S	B,C	Y	2	42,13,28	Audio tape setup, FLEX
Pioneer CT-W503R	200	T,AR	B,C	Y	2	42,13,25	Auto NR, FLEX
Pioneer CT-S430S	200	S	B,C,S	Y	2	42,13,28	Auto tape setup, FLEX, Dolby S
Pioneer CT-W603RS	230	T,AR	B,C,S	Y	2	42,13,25	Auto tape setup, FLEX, Dolby S
Pioneer CT-W803RS	300	T,AR	B,C,S	Y	2	42,13,25	Twin record, mic i/p
Pioneer CT-S630S	300	S	B,C,S	Y	3	42,13,38	Auto tape setup
Pioneer CT-M601R	380	AR	B,C	Y	2	42,14,38	Six tape record/play, r/cntrl
Pioneer CT-S830S	500	S	B,C,S	Y	3	42,14,38	Slant Z transport mech
Pioneer CT-95	1000	S	B,C,S	Y	3	44,15,38	Copper plated chassis
Sansui D-X117HX	220	S	B,C	Y	2	-	
Sherwood DS1150	80	S	B,C	N	2	-	
Sherwood DS1010C	100	S	B,C	Y	2	-	Mic input
Sherwood DD1030C	100	T	B	N	2	-	
Sherwood DS3010C	120	S	B,C	Y	2	-	
Sherwood DD3010C	150	T	B,C	Y	2	-	
Sony TCFX211B	100	S	B,C	N	2	43,12,29	
Sony TCK 215B	130	S	B,C	Y	2	43,12,31	Tape calibration
Sony TCK311B	130	S	B,C	Y	2	43,12,31	Auto calibration
Sony TCW445B	150	T	B,C	Y	2	43,12,31	Full logic control
Sony TCK415B	180	S	B,C	Y	3	43,12,31	UK optimised sound
Sony TCWR545B	200	T	B,C	Y	2	43,12,29	Auto calibration
Sony TCWR645S	250	T	B,C,S	Y	2	43,12,31	UK optimised sound
Sony TCK511S	250	S	B,C,S	Y	3	43,12,31	UK optimised sound
Sony TCK611S	300	S	B,C,S	Y	3	43,12,30	UK optimised sound
Teac V-600	150	S	B,C	Y	2	-	Fine bias
Teac W-700R	220	T,AR	B,C	Y	2	44,15,29	
Teac V-1010	250	S	B,C	Y	3	44,15,29	Fine bias
Teac V-3010	350	S	B,C	Y	3	44,15,36	Copper chassis, remote
Teac V-2020S	380	S	B,C	Y	3	44,15,29	Tape calibration
Teac W-6000R	450	T,AR	B,C	Y	2	44,15,33	Pitch control, remote
Teac R-90 S	500	AR	B,C	Y	3	49,15,36	Remote control
Teac V-8000S	700	S	B,C,S	Y	3	48,15,36	Direct drive, tape cal, remote
Technics RS-TR232	180	T,AR	B,C	Y	2	43,14,29	Play transport unidirectional
Technics RS-BX404	180	AR	B,C	Y	2	43,13,29	Mic inputs, auto tape cal
Technics RS-TR333	200	T,AR	B,C	Y	2	43,14,29	
Technics RS-BX646	230	S	B,C	Y	3	43,13,30	Auto tape cal, remote ready
Technics RS-TR515	250	T,AR	B,C	Y	2	43,14,29	Musical Fidelity reverse
Technics RS-BX747	300	S	B,C	Y	3	43,13,30	Fine bias adj, THC lo-red base
Technics RS-TR979	380	T,AR	B,C	Y	2	43,13,28	Both decks record, quick rev
Yamaha KX-650	260	S	B/C	Y	3	-	
Yamaha KX-W952	500	T	B,C	Y	2	-	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
Arcam Delta 270	800	Hybrid	2E	-	43,9,28	Convertible to 250 transport
Audiomeca Kreatura	1199	MB	E	Y	25,14,39	Heavily modified CDM
Aura CD50	400	BS	E	Y	43,7,34	
Aura CD50CHR	450	BS	E	Y	43,7,34	Chrome finish
AVI S2000 MCII	799	BS	-	-	31,25,9	Low noise clock system
AVI S2000MC	1149	MB	E	Y	31,25,9	20 bit Burr Brown DACs
Cams CD200 Mk II	150	1bit	-	Y	42,9,29	
Cambridge Audio CD200	150	MB	N	Y	42,9,29	Can play in reverse order
Denon DCD-615	180	MB	E	Y	44,11,29	Digital attenuator
Denon DCD-1290	330	MB	O	Y	44,13,32	UK specified components
DPA Renaissance	895	MB	E,O	Y	-	
Dual CD1135RC	140	MB	E	Y	42,8,28	Var. headphone out
Dual CD1150RC	150	MB	E	Y	-	Var. headphone out
Dual CD1000RS	170	BS	E	N	-	Remote control via CR9000RS
Dual CD1180RC	180	BS	E	Y	44,9,29	Var. headphone out
Dual CD1001	180	BS	E	Y	44,12,25	Headphone out
Eclipse CD101	80	MB	-	Y	36,8,29	
Eclipse CD420	100	MB	-	Y	42,8,29	
Goodmans Delta 700	110	MB	N	Y	-	
Goodmans GCD360R	120	MB	N	Y	-	
Grundig CD210	120	BS	E	Y	36,8,30	30 mem, random repeat
Grundig CD1	140	BS	E	Y	44,9,30	30 track memory, auto-space
Grundig CD2	190	BS	E	Y	44,9,30	
Grundig CD3	240	BS	E	Y	44,9,30	FTS, display off, fade, DAC7
Harman-Kardon HD7225	230	BS	-	Y	45,10,33	
Harman-Kardon HD7325	299	BS	E,O	Y	45,10,33	
Harman-Kardon HD7425	349	MB	E	Y	45,10,33	
Harman-Kardon HD7525	449	MB	E	Y	45,10,33	
Harman-Kardon HD7625	549	MB	E	Y	45,10,33	
Harman-Kardon HD7725	799	MB	E,O	Y	45,10,33	
Jadis JS-1	8068	MB	-	-	-	
JVC XL-V174BX	140	1bit	-	Y	44,10,28	
JVC XL-V274BK	160	1bit	-	Y	44,10,28	
JVC XL-Z674	300	1bit	-	Y	44,11,28	
JVC XL-M408BK	300	1bit	-	Y	44,13,32	Six disc
JVC XL-Z1050TN	500	1bit	E	Y	45,11,34	
JVC XL-MC100	800	1bit	-	Y	36,37,38	100 disc player
Kenwood DP-2060	160	1bit	-	Y	44,10,26	Central mechanism
Kenwood DP-R4060	200	1bit	-	Y	44,12,38	Five disc carousel
Kenwood DP-3060	200	1bit	-	Y	44,10,26	High precision master clock
Kenwood DP-M6060	250	1bit	-	Y	44,12,36	Multiplex CD 6+1 disc
Kenwood DP-5060	250	1bit	O	Y	44,12,31	D.R.I.V.E.
Kenwood DP-7060	380	1bit	O	Y	44,12,31	D.R.I.V.E.
Krell KPS20i	3278	-	E	Y	-	Balanced out, Bit String conv
Krell CD-DSP Mk II	5000	-	-	Y	42,13,28	Digital inputs facility
Krell CD DSPII 5000	5000	MB	2E	Y	42,13,28	Has digital in, balanced out
Krell KSP20i	9950	-	E	Y	-	Balanced out, top loader
Linn Mimik	798	DS	E	Y	32,8,33	BNC digital
Linn Karik	1497	DS	E,O	Y	32,8,33	BNC digital
Luxman D500X's	3750	MB	O	Y	44,12,39	Top loading
Marantz CD-53	200	BS	E	Y	43,9,30	New transport, DAC, circuit
Marantz CD-63	250	BS	E,O	Y	42,9,30	As CD-53
Marantz CD-52 II SE	300	BS	E	Y	42,12,28	Selected passive components
Marantz CD-72SE	600	BS	E,O	Y	42,12,28	As CD-52, 4V output
Marantz CD-10	1200	BS	E,O	Y	46,14,36	Twin DAC-7, heavy build
Mclntosh MCD7008	1995	MB	E	Y	-	Seven disc multiplayer
Meridian 506	795	DS	E,O	N	33,9,34	Recently improved sound
Meridian 606	1350	1bit	3E,O	N	-	
Meridian 508	1350	DS	E,O	N	33,9,34	
Metaxas PHOS	1750	BS	E,O	Y	42,16,42	
Micro-Seiki CD-M2DC	3695	MB	E	Y	-	
Micro-Seiki CDM2000X	4689	MB	E	Y	-	
Micromega Stage 1	450	BS	E	Y	43,28,88	Upgradable
Micromega Stage 2	600	BS	E	Y	43,28,88	Upgradable
Micromega Stage 3	800	BS	E	Y	43,28,88	Upgradable
Micromega Trio	6000	BS	E	Y	34,48,31	AES/Toslink digital output
Mission DAD7	900	MB	E	Y	22,8,36	
Mission Discmaster	1900	MB	E	Y	22,8,36	Two box, inc Dacmaster DAC
Musical Fidelity E600	599	BS	E	Y	44,12,35	Balanced XLR output
Musical Fidelity FCD	1499	BS	2E,O	Y	49,12,33	XLR balanced out, tube o/p sta
NAD 501	180	BS	-	N	-	
NAD 502	220	M	E	Y	-	
NAD Monitor 5000	309	M	E	Y	-	
Naim CD3	898	MB	-	Y	32,6,30	1 box
Naim CD1	1677	MB	-	Y	43,16,30	One box, no digital output, to
Naim CD5	3254	MB	-	Y	43,16,30	Two box, no digital output, to
Nakamichi MB-4S	299	MB	-	Y	43,10,27	Multi-CD, 16 x 4 oversampling
Nakamichi CD4	380	MB	E	Y	43,10,32	
Nakamichi MB3	650	MB	-	Y	43,10,38	Multi CD, 18x8 oversampling
Nakamichi MB2	850	MB	E	Y	43,10,38	Multi-CD, 20x8 oversampling
NVA CD Tube	1100	1bit	E	Y	-	
NVA T.E.S.	2000	BS	E	Y	-	
NVA T.T.S	3200	BS	E	Y	-	
NVA T.L.S	3300	BS	E	Y	-	
Onix CD33	999	BS	-	-	43,8,33	DAC7
Onkyo DX710	200	1bit	O	Y	46,11,31	
Onkyo DX703	240	1bit	O	Y	46,11,31	
Onkyo C-711	290	1bit	O	Y	28,8,30	Mini component

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
Aiwa XC-300	150	1bit	O	Y	-	
Aiwa DX-M100	150	1bit	O	Y	-	Midi size
AMC CD6	349	BS	E,O	Y	-	
ARC CD1	3278	-	-	Y	-	'Bit String' conversion
Arcam Alpha One	300	DS	E	Y	43,8,29	

Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory

Audiolab 8000A	450	Int	N	60	MM,MC,1T,3T	Y	N	45,8,36	Preout/main in
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Naim CD5	3254	MB	-	Y	43,16,30	Two box, no digital output, to
Nakamichi MB-4S	299	MB	-	Y	43,10,27	Multi-CD, 16 x 4 oversampling
Nakamichi CD4	380	MB	E	Y	43,10,32	
Nakamichi MB3	650	MB	-	Y	43,10,38	Multi CD, 18x8 oversampling
Nakamichi MB2	850	MB	E	Y	43,10,38	Multi-CD, 20x8 oversampling
NVA CD Tube	1100	1bit	E	Y	-	
NVA T.E.S.	2000	BS	E	Y	-	
NVA T.T.S	3200	BS	E	Y	-	
NVA T.L.S	3300	BS	E	Y	-	
Onix CD33	999	BS	-	-	43,8,3	

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Key to compact disc players, transports and DACs
Price - typical retail, to nearest pound.
DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma, M - MASH, Hybrid - combines multibit and single bit.
Outputs: Digital: Opt - optical (usually Toslink), El - electrical (usually coaxial S/PDIF).

Remote Control - Y - yes, N - No.
Size - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



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Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
Onkyo DX-C110	350	1bit	0	Y	46,12,43	
Onkyo DX750	350	1bit	0	Y	46,11,31	
Orelle CD-480	400	MB	E	Y	44,10,28	DC coupled
Orelle CD260 II	900	MB	E	Y	44,10,32	Audiophile components, DC cpld
Philips CD710	120	MB	-	Y	-	16 bit continuous technology
Philips CD740	130	MB	E	Y	-	Hybrid 5-bit DAC
Philips CD720	130	MB	-	Y	-	16 bit Continuous Calibration
Philips CDC745	199	BS	E	Y	-	Multi-disc tray
Philips CD750	199	BS	E	Y	-	Selected BS DAC, differential
Pioneer PD-77	100	1-bit	E,O	Y	44,13,33	Satin gold finish
Pioneer PD-103	140	1-bit	-	N	42,11,28	Display off
Pioneer PD-203	160	1-bit	-	Y	42,11,28	As 103, variable output & remo
Pioneer PD-S503	200	1-bit	-	Y	42,11,29	Legato Link
Pioneer PD-M603	250	1-bit	-	Y	42,11,30	Six disc
Pioneer PD-S703	300	1-bit	0	Y	42,13,27	SPM, Legato Link , twin PSU
Pioneer PD-M703	300	1-bit	-	Y	42,13,30	Six disc, DSP soundfield cntrl
Pioneer PD-DM802	450	1-bit	-	Y	42,14,31	Dual magazine 12-disc
Pioneer PD-S901	499	1-bit	E,O	Y	42,13,33	SPM, Legato Link, Twin DAC
Pioneer PD-TM3	500	1-bit	-	Y	42,18,35	Triple magazine, 18-disc
Pioneer PD-F100	600	1bit	-	Y	42,19,40	100 disc, Legato Link
Pioneer PD-95	2500	1-bit	E,O	Y	44,16,34	Balanced out, Legato, SPM
Quad CD67	825	DS	E	Y	33,8,26	For use with 66 system
Roksan ATT-DP2P	1495	DS	E	Y	46,12,35	Player, four level isolation
Rotel RCD940BX	230	MB	-	Y	44,10,32	
Rotel RCD-945AX	230	BS	E	Y	44,10,32	
Rotel RCD-965BX	300	BS	E	Y	44,10,32	Audiophile components
Rotel RCD-965BX D	375	BS	E	Y	44,10,32	Discrete output
Rotel RCD-965BX LED	425	BS	E	Y	44,10,32	Discrete & slit foil caps
Sansui CD-270	180	BS	N	N	-	
Sansui CD-117K II	200	MB	N	N	-	
Sansui CD-X217i	200	MB	E	N	-	
Sansui CD-X317	250	BS	E,O	Y	-	
Sansui CD-X617	350	BS	E,O	Y	-	
Sentec Diana	1100	MB	E,O	N	12,5,23	20 bit
Sherwood CD3020R	130	BS	Y	N	-	
Sherwood CDC5030	200	1bit	N	Y	44,10,38	Five disc carousel
Sony CDP-M302	130	1bit	N	Y	36,10,33	Mid-size, full remote control
Sony CDP-312	150	1bit	-	Y	43,10,29	Digital servo
Sony CDP-C325M	230	1bit	N	Y	36,10,39	Mid size, 5-disc player
Sony CDP-C345	230	1bit	-	Y	43,13,39	Five disc player
Sony CDP-715E	250	1bit	0	Y	43,11,30	UK optimised sound
Sony CDP-915E	300	1bit	0	Y	43,11,36	UK optimised sound
Sony CDP-CX100	800	1bit	0	-	43,13,38	100 disc autochanger
Teac CD-P3500	200	BS	E	Y	44,12,28	
Teac CD-P4500	280	BS	E	Y	44,12,29	Digital attenuator
Teac VRDS-7	600	BS	E,O	Y	45,15,34	Twin BS
Teac VRDS-10	770	BS	E,O	Y	45,15,34	Twin DAC7, balanced output
Teac VRDS-20	1300	BS	E,O	-	50,15,34	Twin DAC7, balanced output
Teac X-1	2500	MB	-	Y	46,14,40	Balanced out, 4x20bit
Teac X-1S	3500	MB	0	Y	46,14,40	Balanced out, 4x 20bit
Technics SL-PG360A	140	M	N	Y	43,10,29	Remote control capable
Technics SL-PG440A	170	M	N	Y	43,10,29	4-DAC
Technics SL-PG560A	180	M	0	Y	43,11,30	Selected audio parts
Technics SL-PS620A	200	M	0	Y	43,12,29	
Technics SL-PS740A	250	M	0	Y	43,13,29	Centre tray
Technics SL-PS840	420	M	0	Y	43,13,34	Advanced MASH converter
Technics SL-P2000	1000	M	0	Y	45,13,33	THCB base, R-Core transformer
Wadia 16	7395	MB	-	-	-	Glass, plastic, BNC & AES/EBU
Yamaha CDX-670	290	BS	E,O	Y	-	
Yamaha CDC-635	300	BS	-	Y	-	
Yamaha CDX870	330	BS	0	Y	-	
Yamaha CDX-1000	599	BS	E,O	Y	-	
YBA 2	2999	MB	E,O	Y	43,10,33	Outboard power supply

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD TRANSPORTS						
Micromega Duo CD2-1	2500	-	E,O	Y	34,9,31	Top loading, AES/EBU out
Orelle CD10-T	799	-	E	Y	44,10,32	Isolated PSU, silver wiring
Pink Triangle Cardinal	750	-	-	-	46,8,36	Upgradable transport & player
PS Audio Lambda tr	1990	-	E	Y	38,8,34	AT&T, AES/EBU optional
Roksan ATT-DP2	1295	-	E	Y	46,12,35	Four level isolation
Roksan ATT-DP2A	1490	-	-	Y	46,12,35	AT&T optical
Teac P-700	900	-	E,O	Y	23,14,40	Half width, anti-resonance cha
Teac P-2	3500	-	E,O	Y	23,14,49	
Teac P-2S	4300	-	E,O	Y	23,14,49	Gold plate circuit boards
Theta Data Basic	1997	-	E	Y	42,8,34	AT&T, AES/EBU option
Theta Data II NTSC	3290	-	E	Y	42,12,40	AT&T, AES/EBU option
Theta Data II PAL	3490	-	E,O	Y	42,12,40	AT&T, AES/EBU balanced in
Wadia 20	4370	-	-	-	-	Glass, plastic, BNC, AES/EBU
Wadia 7	9995	-	-	Y	35,16,46	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
D/A CONVERTERS						
Arcam Black Box 50	450	Hybrid	E,O	N	43,7,28	Two inputs, sync lock
Arcam Black Box 500	750	BS	E,O	Y	43,9,28	7 inputs, sync-lock
Audio Alchemy DAC-in-the-box200	600	MB	E	-	-	
Audio Note DAC1	600	MB	E,O	Y	-	
Audio Note DAC3	1650	MB	E/O	Y	-	
Audio Research DAC2	3940	MB	-	-	48,14,26	20bit, 8x o/s
Audiolab 8000DAC	800	BS	-	-	45,8,36	Balanced AES/EBU input
Audiomeca Elixir	699	BS	E,O	Y	25,39,9	
AVI S2000MD	549	MB	-	-	31,25,9	16 bit, optical & elec i/p
Beard DAP-2 DAC	999	BS	E,O	Y	-	Hybrid tube
Beard DAP-1	1250	MB	-	-	-	
Counterpoint DA-11E	1495	-	E,O	Y	49,6,27	Optional AT&T & AES/EBU balanc
Counterpoint DA-10E	1675	-	E,O	Y	-	Interchangeable DACs, optional
DPA Little Bit II	450	BS	E,O	-	-	
DPA Bigger Bit	695	BS	E,O	-	-	
DPA PDM256	2995	-	-	-	-	Unique DPA DX64 DAC
DPA PDM10924	5995	-	-	-	-	Unique DPA DX128 DAC
EMF Audio Crystal	500	BS	-	-	-	
Krell Studio 2	3198	MB	-	-	42,13,27	AT&T in
Krell Studio	4450	MB	-	-	42,6,32	AT&T in
Krell Reference 64	14900	MB	-	-	42,13,39	AT&T in
LFD DAC3	2699	MB	-	N	48,7,37	Optional balanced output
Linn Numerik	1075	MB	-	-	32,8,33	CD sync link with Kark
Meridian 563	695	DS	3E,O	N	33,9,34	
Metaxas Mas DAC	2800	MB	E,O	Y	26,15,45	External PSU, 20 bit
Micromega Microdac	349	BS	E,O	-	22,5,15	Coax/optical
Micromega DAC	600	BS	-	-	43,28,88	AES/EBU input
Micromega Duo BS2	600	BS	-	-	8,28,9	AES input
Micromega T-DAC	800	BS	-	-	22,28,88	Four inputs
Micromega Duo Pro 2	1350	BS	-	-	34,48,31	AES input
Mission DAC5	300	BS	-	-	7,11,29	Outboard DAC, matches DAD5
NVA Dacon	320	BS	E	N	-	
Orelle DA-188	379	MB	-	N	22,7,23	DC coupled, optical & coax in
Orelle DA-180	599	MB	E	N	44,7,28	2 outputs, twin transformers
Perception DAC	695	MB	-	-	-	
Pink Triangle Ordinal	790	BS	E,O	-	23,8,35	Interchangeable DAC & filter
Pink Triangle DaCapo	1450	BS	E,O	-	46,8,35	Unique discrete DAC
Pink Triangle DC	1500	-	-	-	46,8,35	Massive battery PSU for DaCapo
PS Audio DigiLink II	688	MB	-	-	38,8,16	
PS Audio SuperLink 2	1230	MB	-	-	38,8,16	
PS Audio UltraLink 2	2650	MB	-	-	38,6,20	AT&T input option
PS Audio Ref Link	5490	MB	-	-	38,8,36	AT&T input
QED Positron	89	-	-	-	-	Upgrade PSU for Digit
QED Digi Plus	139	BS	E	N	-	
QED Digit Reference	299	BS	-	-	-	Combined 2x Positron/Digit
Roksan ATT-DA2	549	DS	-	N	22,10,33	DAC 4 inputs, optional AT&T
Sentec Diana	993	MB	E,O	-	-	
Teac D-700	600	MB	E,O	-	23,14,40	Matches P-700, 4x20bit
Teac D-2	2500	MB	-	-	23,14,49	18 bit, balanced output
Theta Pro-Prime II	1800	BS	E	-	42,5,23	
Theta Probasic II	2299	MB	-	-	42,5,29	
Theta Pro Gen III	5690	MB	-	-	42,8,34	AT&T input option
Theta Pro Gen V	8500	MB	E	N	42,8,34	
Wadia 12	1530	MB	E,O	N	-	Balanced and AT&T input
Wadia 15	3790	MB	E,O	Y	35,9,41	Software upgradable
Wadia 64.4	4750	MB	E,O	N	35,8,28	Balanced output
Wadia 9	12790	MB	E,O	Y	44,9,36	Digital volume, separate PSU
Woodside DAC2	509	MB	E,O	-	-	
Woodside DAC1	909	MB	E,O	-	-	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD TRANSPORTS						
Arcam Delta 250	750	-	2E, 0	Y	43,9,28	BNC out. Has sync lock input
Audiolab 8000CDM	1250	-	E,O	Y	45,8,36	Precision master clock
Audiomeca Damnation	875	-	E,O	Y	29,10,32	
Audiomeca Kreatura	999	-	E,O	Y	25,14,39	Heavily modified CDM
Audiomeca Mephisto	1999	-	E,O	Y	43,15,33	Integral platter, layer suspen
Counterpoint DA-11E	1495	-	E,O	Y	-	
DPA T1 Transport	895	-	-	Y	-	'Deltran' clock locking (with
Jadis JCDT	8000	-	-	Y	-	Top load
Krell MD-20	4999	-	E,2O	Y	42,13,28	Top load, AT&T optical out
Krell MD-10	7990	-	2E,O	Y	42,13,28	
Krell KPS 20T	8550	-	E,O	Y	-	AT&T, AES/EBU balanced in
Krell DT-10	9090	-	2E,O	Y	42,13,28	Front loader
Meridian 200	895	-	E,O	Y	32,32,10	
Meridian 500	975	-	E,O	Y	32,33,9	
Meridian 602	1750	-	E,O	Y	32,33,10	
Micromega Drive 1	600	-	E,O	Y	43,28,88	Upgradable, AES/EBU out
Micromega Drive 2	900	-	E,O	Y	43,28,88	Upgradable, AES/EBU out
Micromega T-Drive	1200	-	E	Y	22,28,88	Tray loading, AES/EBU out
Micromega Duo CD3-1	1350	-	E,O	Y	34,9,31	Top loading, AES/EBU out

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
Audiolab 8000A 450 Int N 60 MM,MC,1T,3T Y N 45,8,36 Preout/main in



Key to digital recorders
 Price - typical retail, to nearest pound.
 Type - MD - MiniDisc - DCC - Digital Compact Cassette, DAT - Digital Audio Cassettes.
 Digital In & Out - E - Electrical (usually coaxial S/PDIF), O - optical, (usually Toslink).

DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma. Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Dig. In	Dig. Out	DAC Type	Size	Special
DIGITAL RECORDERS							
JVC XM-D1BK	900	MD	E, O	E, O	BS	18,5,13	
Marantz DD-82	399	DCC	E, O	E, O	MB/BS	42,15,34	DAC7 output
Meridian CDR	4500	CD-R	E, O	E	BS in/	-	
Nakamichi 10007	0	DAT	E, O	E, O	MB in/	-	
Philips DCC300	179	DCC	E	Y	BS in/	36,11,30	
Philips DCC600	199	DCC	E	Y	BS in/	44,12,30	
Pioneer D-07	1150	DAT	E, O	E, O	-	44,14,38	96kHz record, Legato Link
Sharp MD-M11E	450	MD	-	Y	-	8,3,11	Recorder, title generator
Sony MBS501	800	MD	E, O	E, O	BS	43,9,35	Sample rate converter
Sony DTC80ES	800	DAT	E, O	E, O	BS	43,11,55	SBM
Technics RS-DC8	700	DCC	E, O	E, O	BS	43,12,35	

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Aiwa HP-V141	7	Ear	5	16	Bass resonator ducts
Aiwa HP-A160	7	Opn	45	32	Banded, 3.5/6.3mm
Aiwa HP-JB33	8	Opn	18	16	Vertical ear fit, ultra light
Aiwa HP-V143	9	Ear	5	16	Bass resonator ducts
Aiwa HP-A260	9	Opn	54	32	Banded, bass resonator ducts
Aiwa HP-V145	10	Ear	5	16	Carrying case included
Aiwa HP-V147	10	Ear	5	16	Bass resonator ducts
Aiwa HP-X201	13	Slid	230	-	Dual plug
Aiwa HP-A360	13	Opn	65	40	Banded, bass resonator ducts
Aiwa HP-X301	20	Slid	230	-	3m lead, dual plug
Aiwa HP-VX303	25	Slid	230	-	In-line controls, dual plugs
Aiwa HP-X705	40	Slid	130	-	Dual plug, 2m ext cable
AKG K2	23	Opn	70	200	Mini
AKG K33	25	Opn	90	50	
AKG K44	42	Opn	90	50	
AKG K135	46	Opn	160	150	
AKG K141	74	Opn	225	600	
AKG K240 Monitor	82	Opn	240	600	
AKG K270	112	Slid	250	75	
AKG K280 Parabolic	117	Opn	250	75	
AKG K400	118	Opn	250	120	
AKG K270 Studio	121	Slid	250	75	
AKG K500	138	Opn	250	120	
AKG K340	191	Opn	380	400	
AKG K1000	646	Opn	270	120	
Audio Technica ATH-309	36	Opn	140	30	
Audio Technica ATH-M4X	39	Opn	140	30	
Audio Technica ATH-909	60	Opn	200	600	
Audio Technica ATH-01	80	Opn	200	600	
Audio Technica ATH-910	90	Slid	200	600	
Audio Technica ATH-900	245	Opn	240	32	
Beyer DT211	33	Opn	120	40	
Beyer DT311	49	Opn	124	40	
Beyer DT331	59	Opn	210	40	
Beyer DT411	69	Opn	120	250	
Beyer DT431	89	Opn	210	40	
Beyer DT511	99	Opn	200	250	
Beyer DT990	119	Opn	200	600	
Beyer DT531	129	Opn	245	250	
Beyer DT100	135	Slid	350	600	
Beyer DT801	159	Slid	250	250	
Beyer IRS790	179	Opn	270	-	Cordless infra-red
Beyer DT811	179	Opn	245	250	
Beyer DT770 Pro	185	Slid	250	600	
Beyer IRS890	199	Opn	270	600	
Beyer DT990 Pro	199	Opn	230	600	
Beyer DT901	199	Slid	280	250	
Beyer DT911	219	Opn	275	250	
Grado Prestige SR60	90	Opn	-	40	
Grado Prestige SR80	125	Opn	-	40	
Grado Prestige SR100	175	Opn	-	40	
Grado Prestige SR200	230	Opn	-	40	
Grado Prestige SR300	320	Opn	-	40	
Grado Signature HP3	410	Opn	-	40	
Grado Signature HP2	510	Opn	-	40	
Grado Signature HP1	615	Opn	-	40	
Jacklin Float Model 1	75	Opn	400	200	
Jacklin Float Model 2	99	Opn	400	200	
Jacklin Float ELS	399	Opn	600	8	Electrostatic
JVC HA-M3	6	Slid	33	32	1.2m dual plug lead
JVC HA-F15	9	Opn	6	16	Mini 1.2m, 3.5/6.3mm plug
JVC HA-X55	12	Slid	45	32	2m dual plug lead
JVC HA-D410	15	Slid	90	32	2m, 3.5/6.3mm plug
JVC HA-X77	16	Slid	40	32	2m dual plug lead
JVC HA-F35	16	Opn	6	32	Mini 1.2m, 3.5/6.3mm plug
JVC HA-X99	17	Slid	50	32	2m dual plug lead
JVC HA-D510	20	Slid	110	32	3m, 6.3/3.5mmjacks
JVC HA-D610	25	Slid	120	32	3m, 6.3/3.5mmjacks
JVC HA-D690	40	Slid	220	32	3m, 6.3/3.5mmjacks
JVC HA-D710	55	Slid	210	32	3m, 6.3/3.5mmjacks
JVC HA-D910	65	Slid	220	32	3m, 6.3/3.5mmjacks



Key to headphones
 Price - typical retail, to nearest pound.
 Type - Opn - open back, vented or velocity type; gives less environmental isolation, but is usually more natural feeling in extended use. Slid - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - Infra red cordless. Ear - in-ear model.

Weight - without cable.

Impedance - in ohms.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
JVC HA-D1000	250	Slid	340	32	5m, 6.3/3.5mmjacks
Kenwood KH-535	15	Ear	-	32	3.5mm plug
Kenwood KH-757	20	Ear	-	32	3.5mm plug
Kenwood KH-1000	20	Opn	30	32	2m OFC lead
Kenwood KH-959	25	Ear	-	32	3.5mm plug
Kenwood KH-2020	40	Slid	210	32	2.5m OFC lead
Kenwood KH-5000	70	Slid	280	32	2.5m OFC lead
Koss HP/1	6	Opn	35	27	
Koss HP/3	7	Ear	5	27	
Koss HP/5	11	Ear	12	28	
Koss HP/6	15	Opn	75	92	
Koss HP/7	20	Opn	55	90	
Koss TD60	29	Slid	150	27	
Koss TD65	45	Slid	150	100	
Koss MAC5	45	Opn	100	60	
Koss TD75	59	Slid	330	150	
Koss Porta Pro Jnr	59	Opn	65	60	
Koss Porta Pro 1	65	Opn	65	60	
Koss MAC7	65	Slid	160	60	
Koss Porta Pro 2000	95	-	-	-	
Koss Pro 480	115	Clid	250	100	
Koss Pro 4AA	129	Slid	425	230	
Koss JCK200	195	Slid	240	100	Cordless infra-red
Koss JCK300	350	Slid	240	100	Cordless infra red
Koss ESP950	1995	Opn	350	-	Electrostatic
Maxell EB125	4	Ear	15	32	Stereo ear buds
Maxell HP-100	4	Ear	3	32	Replaceable pads, 1m lead
Maxell HP-200	5	Opn	30	32	Replaceable pads, 1m lead
Maxell EB225	8	Ear	44	21	Stereo ear buds, minder case
Maxell HBS150	8	Ear	25	32	Water resistant
Maxell HP-400	8	Ear	4	32	With pouch, 6/3/3.5mm fit
Maxell EBS325	9	Ear	13	32	Water resistant
Maxell EB425	10	Ear	13	32	Stereo ear buds, minder case
Maxell HP-700	10	Opn	56	22	Adjustable locking headband
Maxell HP-500	13	Opn	45	32	2.7m lead, 6.3/3.5mm fit
Maxell HP-1000	15	Opn	95	32	2.7m lead, digital ready
Maxell HP-2000	20	Opn	140	32	Volume control digital ready
Maxell HP-3000	30	Sed	120	32	Volume control digital ready
Nakamichi SP7	70	Opn	150	45	
Pioneer SE-5	16	Opn	60	30	2m OFC cable
Pioneer SE-15	20	Opn	65	30	2m OFC cable
Pioneer SE-32	23	Opn	94	40	2.5 OFC cable
Pioneer SE-52	25	Opn	104	40	2.5 OFC cable
Pioneer SE-15V	30	Opn	65	30	5m OFC cable
Pioneer SE-330D	35	Slid	165	35	3m cable, bass boost duct
Pioneer SE-400D	37	Slid	185	35	3m cable, dual bass horn
Pioneer SE-500D	48	Slid	175	35	3m cable, dual bass horn
Pioneer SE-700D	60	Slid	180	35	3m cable, dual bass horn
Ross RE-233	5	Opn	25	8	Micro
Ross RIH-150	6	Ear	5	16	Inner ear headphone
Ross RE-235	6	Opn	5	16	Personal stereo
Ross RE-234	6	Opn	5	16	Personal stereo
Ross RE-229	6	Opn	35	8	Folding
Ross RE-2030	6	Opn	5	8	Personal stereo
Ross RMH-300	7	Opn	51	8	Lightweight
Ross RE-280	7	Ear	10	16	Vertical inner ear
Ross RE-246	7	Opn	5	16	Micro stereo phones
Ross RE-223	7	Slid	155	8	Stereo/mono
Ross RMH-500CD	9	Opn	48	16	Lightweight
Ross RIH-360CD	9	Ear	16	16	Vertical inner ear
Ross RE-2060CD	9	Opn	5	16	Inner ear headphone
Ross RMH-310TV	10	Opn	51	8	For video and TV
Ross RIH-550	10	Ear	5	16	Inner ear, with volume control
Ross RIH-460CD	12	Ear	16	16	Vertical inner ear, volume pot
Ross RDH-200CD	13	Slid	150	8	Closed back
Ross RDH-100CD	15	Slid	144	8	CD headphone
Ross RDH-300CD	17	Slid	155	8	CD headphone
Ross RDH-400CD	22	Slid	186	8	Digital headphone
Sennheiser HD16	8	Opn	45	32	Mini, 1.2m lead, dual plug
Sennheiser HD36	11	Opn	62	32	Mini, 1.2m lead, dual plug
Sennheiser HD56	13	Opn	72	32	Mini, 1.2m lead, dual plug
Sennheiser Vegas	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser Manhattan	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser HD440 II	35	Opn	125	60	3m lead, 3.5/6.3mm
Sennheiser HD60TV	36	Opn	118	32	6.8m lead (inc vol control)
Sennheiser HD320	45	Opn	120	60	3m lead, 3.5/6.3mm
Sennheiser HD330	60	Opn	120	100	3m lead, 3.5/6.3mm
Sennheiser HD340	70	Opn	120	100	Single sided cable
Sennheiser HD25 SP	80	Slid	115	85	Monitoring headphone
Sennheiser HD535	90	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD545 Reference 110	90	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser Set 90/UK	130	Ear	40	-	Mono, infra-red cordless
Sennheiser HD565 Ovation	130	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD265 Linear	130	Slid	260	150	Closed back
Sennheiser HD25	145	Slid	140	70	Closed back

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.

Choosing a good hi-fi dealer is the most vital step in acquiring the system that is right for you. This unique directory gives full information on dealers able to help in your area.

DEALER Directory


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
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
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
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
Rotel, Sony, Tannoy, Technics, equipment and accessories. Demonstration facility. In-house service department. Ring or come in and see a family run firm and let us know you saw us in Hi-Fi Choice. Please see entry under Suffolk. 'Free Installation by experts'.


UNIVERSITY AUDIO, 1-2 Peas Hill, Cambridge. (0223) 354237. Mission-Cyrus, Arcam, Rotel, Denon, Meridian, Ruark, ATC, AVI, Quad, Linn. 3 dems, 1 single speaker. Home trial, free install, Service Department Visa, Access, Amex, Credit. Open 9-5.30. 

CHESHIRE


ASTON AUDIO, 4 West St, Alderley Edge. (0625) 582704. For the very best in hi-fi separates and home cinema. Wide range of specialist audio, interest free credit. Visa, Access. Home trial. 

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
CONGLETON HI-FI, 1/1a Duke St, Congleton, Cheshire, CW12 1AP. (0260) 297544. Acoustic Energy, Arcam, B&W, Denon, Epos, Kef, Linn, NAD, Nakamichi, Onix, Royd, Target, Yamaha, etc. Superbly appointed single speaker demo facilities. 3 listening rooms with one dedicated to home cinema. No appts nec, home trial facilities, free installation. 2 year guarantee on all equipment. Access, Visa. Credit facilities available on request. Open Mon-SAT, closed Weds. 

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SWIFT HI-FI, St Annes Parade, Wilmslow. (0625) 526213. Aura, B&W, Denon, Kenwood, Marantz, NAD, Pioneer, Rotel, Systemdek, Tannoy, Revolver, JPW. Open 9:30am-6:00pm dem room. No pressure! 

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GILSON AUDIO LTD, 172 Borough Road, Middlesbrough. (0642) 248793. Exposure, Arcam, Mission, Cyrus, Denon, Marantz, NAD, Rotel, Pioneer, Audiolab, Tannoy, Teac, Yamaha. Demonstration facilities in main shop and 2 dem. rooms, 1 AV room, appt nec, home trial facilities, free install on request, service department. Access, Visa, HP. 10-5 - 6 days. 

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DEFINITIVE AUDIO, Cornwall, Near St Austell, PL26 6R7. (0726) 844039. For audio components/systems which actually work! Impulse, Micromega, OVA, Audio Innovations, Audio Note, Voyd, Systemdek, JPW, Silver Custom Design, DNM. Demonstration by appointment only. Demonstrations throughout Cornwall, Free Installation. Service Facilities.

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HI-FI EXPERIENCE, Lion House, 227 Tottenham Court Road, London W1P -HX. Tel Help Line 071-580 3535 24 hour, fax 071-436 4733. Agencies include: Arcam, Audiolab, Bang & Olufsen, Castle, Celestion, Chord, Cyrus, Denon, Heybrook, Harman, IMF, KEF, Marantz, Mission, Musical Fidelity, Meridian, Nakamichi, Nad, Pioneer, Quad, Rotel, Shearman, Tannoy, TDL, Yamaha. 8 listening rooms, 3 years guarantee. Free delivery and simple installation (M25 periphery), home cinema specialist.

INFIDELITY, 9 High Str, Hampton Wick, Kingston-upon-Thames. (081) 943 3530. For full details see entry under SURREY.

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ORANGES & LEMONS, 61-63 Webbs Road, Battersea SW11. Tel 071-924 2040/3665. Juicy fruit from London's newest, freshest hi-fi/home cinema retailer. Telephone demonstrations or just pop in. All the usual, ie friendly and efficient service, free home installation, credit cards, plus all the very best from: Arcam, Chord Co, Epos, Meridian, Mission, NAD, Naim, Roksan, Rotel, Royd with more to come. The innovative Audio/Visual retailer.

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Kenwood, Nakamichi, Celestion, Denon, Monitor Audio, Marantz, NVA, Sony ES, Yamaha. Appts preferred. Installations available. Access, Visa, Standard credit facilities. Mon-Sat 9.30-6.30.

STUDIO 99, 79-81 Fairfax Road, Swiss Cottage, London NW6. 071-624 8855, Fax 071-624 5315. Naim, Meridian, Quad, Mission/Cyrus, Rega, KEF, Arcam, Epos, Acoustic Energy, Yamaha, Nakamichi, NAD, Sonus Faber, B&O etc. Single speaker dem room, AV demos. Multiroom. Service dept. Visa/Access credit facilities. 10-7 Mon-Fri, 10-6 Sat.

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ZEBRA, 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. Audio lab, Arcam, KEF Reference, Lexicon, Meridian, Micromega, Panasonic, Pioneer, REL, Rotel, Sony, Tannoy, and large range of AV equipment. S2 Air Conditioned Demo Rooms. In a more casual environment. Service department. The UK's leading home cinema centre. Mon-Sat 9.30-6.00. Access, Visa, Switch & instant credit up to £1000 subject to status.

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AUDIO COUNSEL, 14 Stockport Road, Cheadle, Cheshire OL1 3LQ. Tel: (0161) 428 7887. Linn, Naim, Rega, Arcam, Rotel, Royd, Mission, Micromega, Marantz, Shahinian, Celestion, Nakamichi, Dynavector. Free installation. Record club. Major credit cards and credit facilities. Open Tuesday-Saturday 10.00 to 5.30, 8pm on Thurs.

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WEST MIDLANDS

AMADEUS SOUND & VISION, 10 Boldmere Road, Sutton Coldfield, West Midlands. 021-354 2311. Audio Innovations, aura, B&O, B&W, Castle, Marantz, Micromega, Musical Fidelity, Nakamichi, Harman Kardon, QED. Single speaker demo, appts preferred, service available, installations, B&O link install, home trials. Access, Visa, interest free credit available subject to status. 9.30-6pm, 6 days.

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AUDIO IMAGES, 7 All Saints Rd, South Lowestoft, Suffolk NR33 0DL. Tel: 0502 582853. For full details see our main entry under Suffolk.

BASICALLY SOUND, The Old School, School Rd, Bracon Ash, Norfolk NR14 8HE. (0508) 570829. Audio Alchemy, Arcam, Micromega, Naim, Denon, Spondor, Audiolab, Sound Organisation, Epos, Rotel, Royd, Heybrook, TDL, Nakamichi, etc. 2 comprehensive dem

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RAF-FORDS, 6 South Parade, Summertown, Oxford, OX2 7JR. Tel 0865 511241. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Service depts, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat.

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LYON AUDIO, 16 Peartree Business Centre, Peartree Road, Stanway, Colchester, Essex CO3 5JN. (0206) 560259. Mission, Arcam, Denon, Rotel, KEF, Rogers, NAD, Tannoy, Yamaha, Dual, Michel, Castle. Dem facilities.

Mon-Sat 9-6. Installations. Access, Visa, Instant credit. Service dept.

PRO-MUSICA 6 Vineyard St, Colchester, Essex. Tel (0206) 577519. Roksan, Naim, Rega, Micromega, Arcam, Creek, Onix, Rotel, Denon, Ruark, Royd, Epos, Sound Organisation, Sound Factory, Chord Company, Audio Tec, Audio Technica, Mana Acoustics, Shahinian, Dynavector, Neat. Open 10-6 Mon-Sat. **BADA**
RAYLEIGH HI-FI, 44a High Street, Rayleigh, Essex. (0268) 779762/747571. 216 Moulsham St, On-the-Parkway, Chelmsford. (0245) 265245. 132-134 London Road, Southend-on-Sea. (0702) 435255. A&R, Audiolab, Cyrus, Denon, Epos, Linn, Marantz, Meridian, Mission, Naim, Quad, Rega, Roksan, Royd. 0% finance. Excellent audio visual range, home cinema Dolby Pro-Logic, multi-room specialist. **BADA**

GLOUCESTERSHIRE

AUDIO EXCELLENCE, 58 Bristol Road, Gloucester. (0452) 300046. Great Hi Fi carefully selected and demonstrated by friendly and enthusiastic staff. Closed Mon. **BADA**

AUDIO T 40-42 Albion Street, Cheltenham, Gloucestershire GL52 2RQ. Tel: (01242) 583960 Fx (01242) 226435. Great hi-fi from Arcam, Audiolab, Aura, Denon, Epos, Linn, Marantz, Meridian, Mission, Quad, Rotel, Technics, Yamaha & many more. Mon-Fri 10-6, Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. Listening room. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

HUTCHINSONS, 295-297 High Str, Cheltenham, Glos. GL50 3HL. (0242) 573012. Pioneer reference point, Technics, Dual, NAD, Wharfedale, Celestion, Marantz, Aiwa, Kenwood, Sennheiser. No appts necessary, free install, service dept. Instant credit up to £1000. Open Mon-Sat 9.15-5.30.

HAMPSHIRE

AUDIO SOUTH for further details see Surrey entry.

AUDIO T, 4 Feathers Lane, Basingstoke, Hampshire RG21 1AS. Tel (01256) 24311, Fx (01256) 24430. Great hi-fi from Arcam, Denon, Linn, Meridian, Mission, Naim, Rotel, Technics, Yamaha & many more. Mon-Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & install. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. Listening room. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

HAMPSHIRE AUDIO LTD, 2-12 Hursley Rd, Chandlers Ford, Hants SO53 2FU. (0703) 252827/265232. 3 hi-fi and 2 home cinema/Dolby surround sound demo studios. Thurs late eve, closed Mon (except in Dec). 2-year guarantee, service dept on site, large free car park, junctions 4 (M27/M3), 5 (M27), 12 (M3), 13 (M3) all within 3 miles. Est 1969. **BADA**

JEFFERIES HI-FI 29 London Road, Portsmouth, PO2 0BH. Tel (0705) 663604. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, Dynaudio, KEF, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, Quad, Rega, REL, Rotel, Royd, Ruark, Sennheiser, Sony, Top Tape, Yamaha. 2 dem rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

HEREFORDSHIRE

ENGLISH AUDIO, 37 Whitecross Road, Hereford HR4 0DG. (0432) 355081. Arcam, Audion, Audio Technica, Chord, Cyrus Centre, Denon, Exposure, Heybrook, JPW, KAR, KEF Reference, Marantz, Michi, Micromega, Mission, Musical Fidelity, Moth, NAD, Nakamichi, Orelle, Pink Triangle, Rogers, Rotel, Ruark, SME, Stax, Systemdek, Tannoy, TDL, Yamaha and others. Single Speaker Dem room. Home trial. Free install. Service dept. Access, Visa, Credit arranged. Open Mon-Sat 10am-6pm. **BADA**

HERTFORDSHIRE

ACOUSTIC ARTS LTD, 101 St Albans Rd, Watford, Herts. (0923) 245250. Fax (0923) 230798 Adcom, AMC, Apogee, Audiolab, Audio Research, B&W, Bose, Celestion, Chord, Classe, Denon, KEF, Magneplanar, Marantz, Martin Logan, Michell, Micromega, Orelle, PS Audio, Professional Moitor, Roksan, SME, Sonus Faber, Sonic Link, TDL, Tannoy, Theta, Thorens, Wilson. 4 demonstration rooms. Purpose built AV studio. Credit available. 100 yards from Watford Junction station. Open Tues-Sat 10-6.00. **BADA**

AUDIO FILE, 27 Hockerill St, Bishops Stortford, Herts CM23 2DW. (0279) 506576. 9.30-5.30 open 6 days, 9.30-8pm Thursdays. Linn, Naim, Quad, Cyrus, Arcam, Roksan, Denon, Epos, KEF, Marantz, ProAc, Rega, Yamaha. 0% credit. **BADA**

HALEY AUDIO Ltd, 328 Ware Road, Hailey, Hertford SG13 7PG. Tel (0992) 442425, fax (0992) 448387. Enjoy choosing your system in one of our three listening rooms. Relax with coffee or something from the bar. Demonstrations include Lexicon CP3 with THX surround sound with the guaranteed deepest, tightest bass available. Choose your hi-fi (top valves and MOSFETS), LD, CDI etc in a realistic domestic environment. Brands include; REL, AC Magnum, CR Devs, Rotel, Celestion, Micromega, Lumley Reference, Acoustic Energy, Royd, JPW, Sonic Link, Harmon, etc. We deliver anywhere in the UK for home audition, or mail order. Access, Visa etc.

STUDIO 82 (Harpenden) Ltd, 82 High Street, Harpenden, Herts AL5 2SP. (0582) 764246, Fax (0582) 467022. Arcam, ATC, Audiolab, Aura, AVI, Bang & Olufsen, Blaupunkt, Bose, B&W, Castle, Chord Co, Denon, Epos, Harbeth, Marantz, Mission, NAD, Naim Audio, Nakamichi, Panasonic, QED, Quad, Roberts Radio. Quiet single speaker dem room. Appts nec. Home trial, free install. Service Dept. Visa, Access & finance terms. Open 9-5.30pm (Mon-Sat). **BADA**

HUMBERSIDE

ZEN AUDIO FIDELITY George St, Hull. Tel 0482 587397 - Evening (0964) 670849. Audiolab, Audio Innovations, Aura, B&W, Cabletalk, DPA, Heybrook, JPW, KAR, Micromega, Michell, Harmon Kardon, Impulse, Ruark, Totel, Sugden, Comfortable Listening Room, Home Trial facilities, free installations - personal, friendly service.

KENT

ASHFORD SOUNDCRAFT HI-FI, 40 High Street, Ashford. Seeking music lovers, male or female any age, to share common interest in, musical Pro-aktiv Hi-Fi Systems, Multi Room or Home Cinema. Attractive unusual equipment in unusual setting, your place or ours, we guarantee lasting pleasure. Open Mon-Sat, Appointment Service or just pop in. Tel: 0233 624441. **BADA**

JOHN MARLEY HI-FI CENTRES, 2 Station Rd, West Canterbury. (0227) 769329. Also at Dover - (0304) 207562. Arcam, Aura, B&W, Heybrook, JPW, NAD, Pro-Ac, Pioneer, Rotel, Ruark, Tannoy, TDL, Technics. Dem and home trial facilities. Mon-Sat 9-5.30 closed Thurs. Free install. Credit to £1,000. Access, Visa, Credit charge. Service dept.

KIMBERLEY HI-FI, 193 Broadway, Bexleyheath, Kent. (081) 304 3272. Pioneer, Technics, Kenwood, Denon, NAD, Aiwa, Tannoy, Mission, Wharfedale, B&W. Separate dem room, no apt nec. Free installation. Service Dept. Instant credit facilities. 9.30-5.30. No early closing.

V J HI-FI, 29 Guildhall St, Folkestone. (0303) 256860. Mission, Kenwood, Tannoy, Marantz, Sony, Rogers, Denon, Musical Fidelity, Quad, Yamaha. Dem and home trial facilities, free local install. No appts necessary, service dept. Amex, Diners, Visa, Access, Int free credit, instant credit. Mon-Sat 9-6. **BADA**

V J HI-FI, 119 High Street Margate. (0843) 226977. For full details see our above entry. **BADA**

LANCASHIRE

HELEN KOCZUR, 161 Yorkshir Street, Rochdale, Lancashire. (0706) 42107. Harman Kardon, Quad, Revox, Aura, Teac, JBL, Tannoy - including Definition Range - B&W, KEF, Castle, Canon, Bose, Nakamichi, Grundig large screen TVs. Two demo rooms, service dept, home installations and free delivery. Mon-Sat 9-5.30 Closed Tuesdays. Visa, Access, Credit facilities.

NORMAN AUDIO, 131 Friargate, Preston, Lancs PR1 2EE. Tel (0772) 253057. Fx (0772) 562731. Marantz, Pioneer, Yamaha, Audiolab, Arcam, Mission, Cyrus, B&W, KEF. Send for catalogue. Home cinema demo room. No appointment nec, home trial facilities, free installation. Instant credit subject to status. Open 9.30-5.30, late night Wed till 8pm. **BADA**
NORMAN AUDIO, also at 216 Church Street, Blackpool, Tel (0253) 295661, Fx (0253) 295722. **BADA**

LEICESTERSHIRE

LEICESTER HI-FI CO, 6 Silver Walk, St Martins Square, Leicester LE1 5EW. Tel: (0533) 539753. Fax (0533) 626097. Acoustic Energy, Arcam, Marantz, Micromega, Mission/Cyrus, Musical Fidelity, Nakamichi. Exposure, Rogers, Roksan, "and oodles more". 2 Dem rooms, home trial arranged, free install, service dept, Credit facilities, Access, Visa, Diners, Amex, 6 days 9.30-5.30. **BADA**

LISTEN INN, 6 Hotel Street, Leicester. (0533) 623754 (Fax) 0533 623758. Linn, Arcam, Royd, Heybrook, Creek, Neat, Mission, Cyrus, Audiolab, Quad, Denon, etc. 2 Dem Rooms. **BADA**

SOUND ADVICE, The Factory, Duke St, Loughborough LE11 1ED. (0509) 218254. Shahinian, Rega, Naim, Linn, Royd, Yamaha, Rotel, Arcam, Nakamichi, JPW. 3 demonstration areas, no appts necessary, free installation, service department. Lombard credit charge, Access, Visa. Mon-Fri 9.30-6.00, Sat 9.30-5.30.

STEREO SHACK, 1-3 Guildhall Lane, Leicester. Tel 0533 530330. Aiwa, A.R., Lene, Kenwood, Jamo, Mission, NAD, Phillips, Pioneer, Rotel, AV Speciality. Free Install Open 9.30 - 5.30 6 days. Credit available.

LINCOLNSHIRE

BOSTON HI-FI CENTRE, 65a Wide Bargate, John Adams Way, Boston, Lincs PE21 6SG. (0205) 365477. Denon, Quad, Nakamichi, Arcam, Onyoko, Marantz, NAD, Castle, Tannoy, Rogers, etc. Separate demo studio. Home trial. Free installation. Access, Visa. Tues-Sat 9-5pm.

STAMFORD HI-FI CENTRE, 9 Red Lion Square, Stamford, Lincs PE9 2AJ. (0780) 62128. Pioneer, Technics, Marantz, Cyrus-Mission, Rotel, NAD, Yamaha, Kenwood, Quad, plus all major speaker manufacturers. Expert advice, comparator demonstrations, on two floors, part exchange Hi-Fi purchased for cash. No appointments necessary, home trial facilities, free installation, service department. Mastercard, Visa & credit charge, finance available. Mon-Sat 9-5.30pm, closed Thursdays.

SUPERFI, 271A High Str, Lincoln LN2 1JG. (0522) 520265. See main entry under Nottinghamshire for full details.

LONDON

AUDIO T, 190 West End Lane, West Hampstead, London NW6 1SQ. (0171) 794-7848, Fx (0171) 431-3570. Great hi-fi from Arcam, Audiolab, Aura, B&W, Denon, Epos, Linn, Marantz, Meridian, Mission, Rotel, Micromega, Nakamichi, Yamaha & many more. Mon-Sat 10-6. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. 2 listening rooms. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

BILLY VEE SOUND SYSTEMS, 248 Lee High Road, Lewisham, London SE13 5PL. 0181-318 5755/0181-852 1321. Arcam, Denon, Marantz,

Denon, Epos, Royd, Marantz, Mission, Monitor Audio, Nakamichi, Naim, Quad, Rotel, Rega, Tannoy, Teac. Open 10-5pm. Dem room. Closed Thur.

SHROPSHIRE

AVON HI-FI, 12 Barker Street, Shrewsbury, Shropshire SY1 1QJ. (0743) 355166. NAD, Quad, B&W, Kenwood, Aiwa, Bose, Nakamichi, Onkyo. Dem room. Home trial. Free install. Service dept. Access, Visa. £1000 instant credit. Mon, Tues, Wed, Fri, Sat 9-5.30.
CREATIVE AUDIO, 9 Dogpole, Shrewsbury. (0743) 241924. Arcam, Audiolab, Celestion, Cyrus, Denon, Epos, Kef, Meridian, Mission, Naim, Quad, Rega, Roksan, Rotel, Ruark, Tripod. Dem room. Home trial and free installation. One of the best ranges of quality hi-fi outside London. Credit to £1000, instant low-cost finance to £15,000, Amex, Access, Visa, Switch. Specialist service dept. Tues-Sat 9.30-5.30.

SOMERSET

MIKE MANNING AUDIO, 110 Middle Street, Yeovil, Somerset BA20 1NE. (0935) 79361, Fax (0935) 32923, Mobile(0850) 325965. Naim, Roksan, Pink Triangle, A+R (Arcam), ATC, AVI, NAD, Pioneer, Rotel, Denon, etc. Dedicated listening lounge, for relaxed and unpressured demonstrations. Appts not usually nec. but best to phone first. Home trial facilities on request, free installation, service department. Instant credit, Access & Visa, etc. 9-5.30 closed Mondays.

STAFFORDSHIRE

GRANGE HI-FI LTD, 153 Branston Rd, Burton-on-Trent, Staffordshire DE14 3DQ. (01283) 33655. Albany, Audio Innovations, Arcam, Castle, Denon, JPW, Marantz, Moth, Pink Triangle, Rotel, Rogers, Systemdek, SME, Tannoy, TDL, Yamaha. Home cinema and hi-fi demo rooms, appts nec on Sat, Free Install. Service dept Access, Visa, interest free credit available, subject to status. 9.00-5.30pm. Closed for lunch 12.00-12.30. **BADA**

SUFFOLK

AUDIBLE DIFFERENCE, Near Diss, Norfolk — see main entry under Norfolk.
AUDIO IMAGES, 7 All Saints Rd, Pakefield, South Lowestoft, Suffolk NR33 6JL. Tel/Fax: 0502 582853. Quad, Triangle, Arcam, Castle, Rotel, Moth, JPW, Finlux, Audio Innovations, plus the amazing Rothwell range. Separate demo room, no appts nec. 10-6.30 Tue-Thur, 7pm Fri, 6pm Sat.
BASICALLY SOUND, The Old School, School Rd, Bracon Ash, Norwich. (0508) 570829. For full details see entry under Norfolk. **BADA**

BURY AUDIO, 47 Churchgate St, Bury St Edmunds, Suffolk, IP33 1RG. Tel (0284) 724337. Arcam, Castle, Heybrook, LFD, Marantz, Meridian, Monitor Audio, Michell, Musical Fidelity, Orelle, Pink Triangle, Proac, Quad, Rotel, Ruark, Target, van den Hul, etc. Single Speaker Room. No appointments necessary. Home trial fac. Free installation. Access, Visa, Switch. 9.30-6pm Mon-Sat. Closed Wed.
EASTERN AUDIO, 41 Bramford Rd, Ipswich. (0473) 217217. Established nearly 20 years. Easy parking, dem room. Mon-Sat 9.30-6. Quad, Arcam, Marantz, Meridian, Denon, Nakamichi, Audiolab, Technics, NAD, TDL, Celestion, Mission and B&W. **BADA**

FENWAY 71 The Rookery Centre, Newmarket Tel (0638) 663166. Contact Mark Pearson for Bose, Pioneer, QED, Rotel, Sony, Tannoy, Technics, equipment and accessories. Demonstration facility. In house service department. Ring or come in and see a family run firm. Please see entry under Cambridgeshire. 'Free installation by experts'.

SURREY

AUDIO SOUTH, 24 (The Woolmead) East Str, Farnham, Surrey GU9 7TT. (0252) 714555. Audio Note, Deltac, JPW, Marantz, Rotel, Teac, etc. AV specialist. Dem room and evening

appointments available. Home trial facilities. Free installation. Access, Visa. 10.30-6 Mon-Sat.

INFIDELITY, 9 High Str, Hampton Wick, Kingston Upon Thames, Surrey. Tel: (081) 943 3530. Arcam, Creek, Epos, Heybrook, Micromega, Naim Audio, Roksan, Rega Research, Shaninian, TEAC. Single speaker listening room. Appts pref, free installation, service dept. Major credit cards. Closed Mon, Tue-Fri 10.30-7, Sat 10-6. **BADA**

PJ HI-FI - the Hi-Fi Shop, 3 Bridge St, Guildford, Surrey GU1 4RY. (0483) 504801/304756. 9-6 Mon-Sat. Linn, Meridian, Arcam, Quad, Revox, Rotel, NAD, Nakamichi, Marantz, Yamaha, Deltac, Rega, Audiolab, Mission/Cyrus. **BADA**

RIVERSIDE HI-FI, 422 Richmond Road, East Twickenham. TW1 2EB. Tel: (081) 892 7613. Fax: (081) 892 7749. See main entry under Middlesex. **BADA**

ROGERS HI-FI, 13 Bridge Street, Guildford, Surrey GU1 4RY. (0483) 61049. Aiwa, Creek, Denon, JPW, Marantz, Micromega, Rogers, TEAC, Pioneer, Systemdek, Tannoy. Demonstration facilities available, no appointment necessary. Free installation. Service department. Access/Visa. Instant credit up to £1,000 subject to status. Monday-Saturday 9.30-6pm, later by appointment.

SPALDINGS HI-FI, 352-4 Lower Addiscombe Rd, Croydon, Surrey CRO 7AF. 081-654 1231/2040. Linn Naim, Quad, Meridian, Audiolab, Mission, Marantz, Denon, Ruark, Tannoy, Arcam. 3 dem rooms including AV room. Service dept, free install, home trial facilities, appointments advisable. Access, Visa, Amex, Interest free credit, instant credit. Mon-Sat 9-5.45. Tues-8. Closed Wed. Service dept. **BADA**

SURBITON PARK RADIO, 48 Surbiton Rd, Kingston-Upon-Thames, Surrey. (081) 546 5549. Quad, Castle, Dual, Denon, Kenwood, Mordaunt-Short, Rotel, Pioneer, QED, B&W, Tannoy. Demo facilities. Access, Visa. 9.30-5.00 Mon-Sat. Service dept.

ZEBRA 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. See main entry under London.

SURREY HI-FI, 45 High St Godstone, Surrey RH9 8LS. (Just off M25). (0883) 744755. Musical Fidelity, Quad, JPW, Audiolab, Bose, Tube Technology, Sennheiser, van den Hul cables. For full product listing and directions to Surrey hi-fi please see our advert in the Dealer Guide.

SUSSEX (EAST)

JEFFRIES HI-FI, 69 London Road, Brighton BN1 4JE. (0273) 609431. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, KEF, Kinshaw, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, Rega, REL, Rotel, Royd, Ruark, Sennheiser, Shaninian, Sony, Top Tape. 2 dem rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

JEFFRIES HI-FI, 4 Albert Parade, Green Street, Eastbourne BN21 1SD. (0323) 31336, Fax (0323) 416005. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, Dynaudio, KEF, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, REL, Rotel, Royd, Ruark, Sennheiser, Sony, Top Tape, Yamaha. Two demonstration rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

THE POWERPLANT, 66 Upper North Street, Brighton BN1 3FL. (0273) 775978. Cyrus, Roksan, Micromega, Epos, Rega, Arcam, Audiolab, ATC, Theil, Rotel, Audionote etc. Single speaker demonstration room, home trial available, no appts required, service dept, free installation. Access, Amex, Visa, Interest free credit, instant credit. Tue-Sat 10-6pm. **BADA**

SUSSEX (WEST)

AUDIO DESIGNS, 26 High Street, East Grinstead, West Sussex RH19 3AS. (0342) 314569. Arcam, Audiolab, Cyrus, Epos, Linn, Marantz, Naim, Rotel, Mission, Sony.

Comfortable listening room. Installation and service dept. Access, Visa and credit facilities. 9.30-6:00 Mon-Sat, late Tue. **BADA**

BOWERS & WILKINS LTD, (Est. 1945) 1 Becket Buildings, Littlehampton Rd, Worthing. (0903) 2 64141. 1 minute from A24 & A27. Free local parking. Aura, B&W (inc. Matrix), Castle, Denon, Mission, Nakamichi, Quad, Teac, Technics, Thorens, and many more in 4 Dem Rooms. Systems, Hi-Fi and Home Cinema. Service Dept., Installations. Open 6 days a week. Access, Visa, instant credit to £1000 subject to status.

CHICHESTER HI-FI, 7 St Pancras, Chichester, W. Sussex PO19 1SJ. Tel: (0243) 776402. Linn, Naim, Rega, Creek, Nakamichi, A&R, Denon, Roksan etc. Tues-Sat, 10-1, 2-5.15 (closed Mon). **BADA**

TYNE & WEAR

RED RADIO SHOP AND HI-FI CENTRE, 11 Olive Street (Off Park Lane), Sunderland, Tyne & Wear SR1 3PE. 091-567 2087. Castle, Denon, JVC, Kenwood, Mordaunt-Short, Michell, Pioneer, Teac, Tannoy, TDL, TV, video, stylii, cartridges, components, accessories, portables etc. Audio/visual dem room with cinema sound. On site repair service, interest free credit. 9am-5.30pm daily.

WARWICKSHIRE

FRANK HARVEY HIFI, 163 Spon Street, Coventry, Warwickshire, CV1 3BD. Tel 0203 525200. Arcam, Mission, Cyrus, Musical Fidelity, Marantz, Rotel, NAD, Tannoy, Yamaha, KEF. Open 9.30-5.30 closed Thursday. **BADA**

SOUNDS EXPENSIVE, 12 Regent Str, Rugby. (0788) 540772. Arcam, Audiolab, Quad, Meridian, Marantz, Mission, Celestion, KEF, Rotel, Ruark, Rotel, Heybrook. IMPROVE YOUR IMAGE. BE SEEN WITH US. appts required, no service dept, free install, home trial facilities. Access, Amex, Visa, Diners, Instant credit. Open 9-5.30pm Mon-Sat. **BADA**

WILTSHIRE

THE AUDIO EXCHANGE, 52 Morse Str, Swindon, Wiltshire SN1 5QP. (0793) 539008. Acoustic Energy, Audio Innovations, Cerwin Vega, CR Developments, Heybrook, Impulse, Micromega, Michell, REL, Sequence, Sugden. AV and single speaker demo room. Home trial facilities, free installation, service dept. 10-6 Mon-Sat.

AUDIO T, 60 Fleet St, Swindon, SN1 1RA. (01793) 538222, Fax (01793) 487260. Great hi-fi from Arcam, Denon, Linn, Marantz, Meridian, Mission, Naim, Rotel, Technics, Yamaha & many more. Mon-Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. 2 listening rooms. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

WORCESTERSHIRE

COLORAMA HI-FI, 27 Kingfisher Walk, Kingfisher Centre, Redditch, Worcs B97 4EY. (0527) 597260. Aura, Nad, Onkyo, Kenwood, Denon, TDL, Polk Audio, B&W, Tannoy, Full Pro-Logic products. In-store integrated dem facilities. No appts required, service dept. Access, Visa. Open 9-5.30, closed Thur.
SPAINS HI-FI, 2&2a New Road, Bromsgrove, Worcestershire. Tel: (0527) 872460. B&W, Denon, Kef, Kenwood, Marantz, Mission, Nad, Pioneer, Rotel, Sony, Tannoy and more. Comfortable listening lounge for hi-fi and AV equipment. Free installation. Access & Visa, interest free credit.

WEST MIDLANDS AUDIO, 158 Ombersley Road, Worcester WR3 7HA. (0905) 58046. Audiolab, Arcam, Naim Audio, Rega, Kef, Roksan, Epos, Quad, Nakamichi, Absolute Sounds and lots more. 4 demo rooms for budget & high-end audio. Dedicated DSP room. Appointments required. Free install, service dept. Access, Visa, Amex, Diners, Switch. Chartered Trust. Mon-Sat 9.00-5.30 late evenings by appt.

YORKSHIRE (NORTH)

HARROGATE HI-FI, 15 Commercial Str, Harrogate, N Yorks. (0423) 504274. Alchemist, Albany, Ruark, Cabasse, Tannoy, Lumley Reference, Orelle, Celestion, NAD, Onkyo, Rotel, Yamaha. Single speaker dems, home cinema dems. Appts required, service dept, free install, home trial. Access, Amex, Visa, Int free credit, instant credit. Open 10-6pm closed Mon. **BADA**

SCARBOROUGH HI-FI CENTRE, 14 Northway, Scarborough, N. Yorks YO11 1JL. (0723) 374547. Alchemist, Lumley Reference, Nad, Rotel, Onkyo, Mission, Celestion, Orelle, Marantz, Tannoy, Ruark. Dem room, home dems. Appts required, service depart, free install, home trial. Access Visa Int free Credit, Amex, Diners. Open 10-6 Mon to Sat. **BADA**

SOUND ORGANISATION YORK, 2b Gillygate, York YO3 7EQ. Tel: (0904) 627108. Closed Mondays. Linn, Naim, Rega, Creek, Meridian, Arcam, Denon, Royd, Rotel and other well chosen makes. "You can't go wrong — we won't let you". **BADA**

VICKERS HI-FI, 24 Gillygate, York. (0904) 629659. Audiolab, Harman-Kardon, Marantz, Musical Fidelity, Pink Triangle, Quad, Systemdek, Tannoy, Technics, & lots more. 3 demonstration studios (2 by appointment) superb showrooms, 2 year guarantee on all hi-fi products. Appts as above, home trial facilities, free installation, service department. Qualified and experienced staff, over 25 years experience. 12 months interest free credit. 10.30-5.30 Mon-Sat.

YORKSHIRE (SOUTH)

HI-FI STUDIOS, Sunnyfields, Doncaster, DN5 85A. (0302) 781387. Stemfoort, Ruark, Absolute SOUNDS, Impulse, Proac, Martin-Logan, Sugden, Conrad-Johnson, SME, Michell Gyrodek, Teac CD and tape, REL, Project, CR Developments, Art Audio valves, Keswick Audio Research, Yamaha DSP Home Cinema, Harbeth, Systemdek, Audio Innovations, Ortofon, Goldring. Home cinema Pro-Logic demonstrations, listening room, dems, home trial, free delivery and install, 2 year guarantee. Access, Visa. 10-8pm Mon-Fri, 10-6 Sat. Phone for further info. & FREE fact pack.

YORKSHIRE (WEST)

AUDIOVISION (BRIGHOUSE) LTD, 5 Bethel Street, Brighouse, W Yorks HD6 1JR. (1 mile from junction 25, M62) (0484) 713996. Yorkshire's experts for the entire range of Technics hi-fi separates and systems, Panasonic Nicam TV, satellite, audio, VCRs and camcorders, Philips widescreen TV, CDI and Laserdisc players and Yamaha cinema DSP separates. Also, Castle Acoustics, Mordaunt-Short, Bose, TDL, Cerwin Vega and Aiwa hi-fi separates. Hi-fi, home cinema and Dolby ProLogic surround sound systems on continuous demonstration. Free specialist advice and expert installation. In store service dept, Access, Visa, Credit charge. Mon-Sat 9-5.30.

ASTON AUDIO, 19 Crossgate, Otley, Leeds, LS21 1AA. (0943) 467689. Naim, Mission Cyrus, Arcam, Audiolab, Meridian, TDL, Micromega, Quad, B&W, Nakamichi, Denon. Home Cinema, dem rooms, int free credit, Visa, Access. Open Tues-Sat 9-6pm. **BADA**

HUDDERSFIELD HI-FI CENTRE, 4 Cross Church St, Huddersfield. (0484) 544668. B&W, Cyrus, Kenwood, Denon, Rotel, Arcam, Musical Fidelity, Quad, Audio Lab, Marantz, Mission, etc. Dem facilities — appointment reqd. Mon-Sat 9-5.30, Thurs 9-8. Closed Wed. Free installation, credit facilities. Access, Visa.

IMAGE HI-FI, 17 The Springs, Wakefield, WF1 1QE. (0924) 200272. Arcam, Linn, Meridian, Mission, Quad, Rotel, Etc. 2 Listening Rooms - Free Parking, DeL & Instal Mon-Sat 9.30-5.30 pm **BADA**

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DEALER Directory

NORTHERN IRELAND

BELFAST

LYRIC HI-FI, 161/163 Stranmillis Road, Belfast. (0232) 381296, Fax (0232) 661115. Linn, Naim, Rega, Arcam, Castle, Denon, Rotel, Royd, Epos, Shahinian, Sehring etc. Free delivery and installation, service dept, 3 single speaker demo rooms, interest free credit available. Open Mon-Sat 10-6, Late night Thurs, closed all day Wednesday.

ZEUS AUDIO, 2-4 Grt Victoria Str, Belfast BT2 7BA. (0232) 332522. Audio Innovations, Pink Triangle, Roksan, Marantz, Tannoy, Rotel, Micromega, Meridian, Mission Cyrus etc. Open Mon-Sat 10.00-5.30. Late night Thursday.

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COUNTY DOWN

ASTON AUDIO, Unit 8, Kings Road Shopping Centre, Kings Road, Belfast. Tel: 0232 402220. Akai, Aiwa, Technics, JVC, Mitsubishi, Samsung, Toshiba, Panasonic, and many more. Demos available, Open Mon-Fri 10-8pm Sat 10-5pm

SCOTLAND

ABERDEEN

HI-FI EXCELLENCE, 293 Union Grove, Aberdeen, AB1 6TD. Tel (0224) 322520. Aiwa, Audio Innovations, Denon, Impulse, Infinity, Musical Fidelity, Rotel, Roksan, TDL. 2 large single speaker dem rooms. Appts necessary after 6.00pm. Home trial facilities. Free Installation, Service Department. Various offers. 3 Yr guarantee. Open 10-6.00pm 6 days.

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THE SOUND FOUNDATION, 22 Nelson St, Kilmarnock, Ayrshire, KA1 1BA. Tel: (0563) 74185, fax (0563) 74186. Stockists of Proac, Castle, Audio Innovations, Harman Kardon, Sugden, Pink Triangle, Rotel etc. Open Monday to Saturday 9.30 - 5.30, late night Thursday till 7pm. Home dems and delivery installation service available. Credit facilities also available. Contact Kevin for more information and directions.

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IN HI-FI, Galloway House, 8-10 Bakers Place, Corner of St Stephen St, Stockbridge, Edinburgh EH3 6SY. 031-225 8854. Arcam, Castle, Cyrus, Marantz, Meridian, Mission, Quad, Rogers, Sony, Yamaha, and other good brands. Full home cinema demonstration lounge. 2 hi-fi demo lounges. No appts required, service dept, free install, home trial facilities. Access, Amex, Visa, instant credit. Open Mon-Sat 9.30-6pm.

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MUSIC MILL, 72 Newhaven Rd, Edinburgh EH6 5QG. Tel 031-555 3963. The only stockist of the full range of Micromega in Scotland. Plus: DPA, Stand unique, Alchemist, Royd, Proac, Audio Innovations, Lumley Reference. Tube Technology, DNM, B&W, Systemdek, Nottingham Analogue, Nakamichi, Rehdeko, Dali, Crimson, Harmon Kardon, Goldring, Plus DNM Cables, Tiny Tubes + Designer Hi-Fi furniture. Mon-Sat 10-6 by appt. Closed Wednesdays. All major credit cards accepted. Contact Fraser or Mark. Phone for Directions, more information & product evenings. Car parking available.

GLASGOW

STEREO STEREO, 278 St. Vincent Street, Glasgow G2 5RL. Tel: 041-248 4079, Fax: (0555) 820358. All of our products are stocked on the basis of how well they perform and not on what the reviewers say this month. From individual components to complete systems. Multiroom and AV. If you are confused or would just like good advice, Listen to the equipment before deciding. Give Alan or Ian a call. 3 demonstration rooms. Free installation with deliveries throughout Scotland. Interest free credit. Mon-Sat 10-6, closed Tues.

HIGHLANDS

THE MUSIC STATION, 49 Church St, Inverness IV 1DR. Tel: (0463) 225 523. Beyer Dynamic, Celestion, Denon, Jamo, Kef, Kenwood, Marantz, Mission, Musical Fidelity, Pioneer, Rotel, Sony. Listening room service dept, free delivery to local area, part exch, full range of credit facilities.

STIRLING

STIRLING AUDIO, 19 Barton Str, Stirling, Scotland FK8 1HF. (0786) 479958. Linn, Mission, Cyrus, Marantz, Arcam, TDL, Heybrook, Tannoy, Aiwa, Audio Innovations. Dem room. No appts necessary, service dept, free installation, home trial. Access, Visa, Int free credit, instant credit. Mon-Sat 10-5.30, closed Wed.

TAYSIDE

J.D. BROWN, 28-36 Castle St, Dundee DD1 9NZ. (0382) 26591. Rotel, Denon, Pioneer, Technics, Aiwa, Mission, Castle, Mordaunt-Short, Monitor Audio, Bose, Infinity. All equipment ready for demonstration. No appt nec, free installation, service dept. Open 9.30-6pm six days a week, (close 5pm Sat).

WALES

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ACTON GATE AUDIO, 4 Ruabon Rd, Wrexham (0978) 364500. Audio Visual specialists. Aiwa, Arcam, AMC, Bose, B&W, Beard, Canon, Celestion, Castle, Cyrus, Jamo, Marantz, Michell, Mordaunt-Short, Musical Fidelity, NAD, Nakamichi, Micromega, Quad, Radford, Rotel, Rogers, Rega, Ruark, Spendor, Tannoy, Wharfedale, UKD, Yamaha DSP member. Demonstration room, installation service. Easy parking and motorway access. Access, Visa etc.

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AUDIO EXCELLENCE, 134 Crwys Road, Cardiff. (0222) 228565. Great Hi Fi carefully selected and demonstrated by friendly, enthusiastic staff. Closed Mon.

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AUDIO EXCELLENCE, 9 High St, Swansea. (0792) 474608. Great Hi-Fi carefully selected and demonstrated by friendly, enthusiastic staff. Closed Mon.

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I&H GRIFFITHS & SONS, 313 High St, Bangor LL57 1YA. (0248) 370655. Aura, Yamaha, Tannoy, Teac, Sony, B&W, SVC, Rotel. Demos available, no appts nec, home trial facilities, free installation, service dept. Access, Visa, Lombard credit charge. Mon-Sat 9-5.30, Wed 9-1. Audio Visual Specialists.

PETERS HI-FI Victoria Buildings, Mostyn Avenue, Craig-y-don, Llandudno. (0492) 876788. Single speaker dem room. Open 9-5.30. Closed Wed. See Cheshire branch for details.

To advertise in this section
call Jennifer Phillips on
071-917 7643



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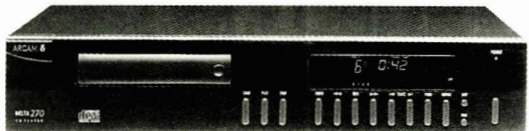
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CLONEY Audio

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Telephone: 01 - 2888477/2889449.

HI-FI CHOICE BUYER'S GUIDE



Key to headphones
 Price - typical retail, to nearest pound.
 Type - Opn - open back, vented or velocity type; gives less environmental isolation, bias usually more natural feeling in extended use. Std - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - infra red cordless. Ear - in-ear model.

Weight - without cable.

Impedance - in ohms.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Sennheiser IS450	150	-	160	-	Infra-red cordless - hi-fi
Sennheiser Set 180/UK	150	Ear	43	-	Stereo infra-red cordless
Sennheiser IS550	180	-	170	-	Infra-red cordless
Sennheiser HD 580 Precision	190	Opn	260	300	Flagship model
Sennheiser Charleston	225	Opn	210	140	3m lead, dual plug, leather tr
Sennheiser IS850	830	-	330	-	Digital audiophile infra-red
Sennheiser HE60/HEV70	998	Opn	260	-	Electrostatic with energiser
Sennheiser Orpheus	9652	Opn	365	-	Electrostatic, valve energiser
Sony MDR-E505	8	Ear	-	-	Supplied soft case
Sony MDR-E515EX	8	Ear	5	-	1m lead, mini plug
Sony MDR-007 Mk II	8	Opn	36	-	2m, 3.5/6.3mm plug
Sony MDR-009	10	Opn	40	-	2m, 3.5/6.3mm plug
Sony MDR-W07L	11	Ear	13	-	1m mini plug
Sony MDR-A009	12	Opn	-	-	-
Sony MDR-E515V	12	Ear	5	-	1m lead, mini plug
Sony MDR-V50	13	Std	-	-	-
Sony MDR-E525	15	Ear	5	-	1m lead, mini plug
Sony MDR-24	15	Opn	-	-	7m, 3.5/6.3mm plug
Sony MDR-25	16	Opn	-	-	-
Sony MDR-W12L	16	Ear	-	-	1.2m mini plug
Sony MDR-008TV	17	Opn	-	-	5m, 3.5/6.3mm plug
Sony MDR-E535	18	Ear	5	-	1.2m lead, mini plug
Sony MDR-44	18	Opn	-	-	7m, 3.5/6.3mm plug
Sony MDR-009TV	19	Opn	-	-	5m, 3.5/6.3mm plug
Sony MDR-35	20	Opn	-	-	-
Sony MDR-CD30	20	Std	-	-	2m, 3.5/6.3mm plug
Sony MDR-E747MP	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-CD50	20	Std	180	24	2m, 3.5/6.3mm plug
Sony MDR-5747	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-P1TV	22	Std	-	-	5m, 3.5/6.3mm plug
Sony MDR-A22L	22	Ear	-	-	1.2m mini plug
Sony MDR-CD250EX	28	Std	-	-	3m, 3.5/6.3mm lead
Sony MDR-CD450	45	Std	260	24	3m, 3.5/6.3mm plug
Sony MDR-IF210	50	IR	170	-	Extra h/phone w/o transmitter
Sony MDR-CD550	60	Std	270	45	3m, 3.5/6.3mm plug
Sony MDR-D33	70	Std	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-IF210K	80	IR	170	-	Seven meter range infra red
Sony MDR-D55	90	Std	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-CD750	90	Std	290	45	3m, 3.5/6.3mm plug
Sony MDR-D77	120	Std	140	45	1.5m, 3.5/6.3mm plug
Sony MDR-610k	190	IR	470	-	Seven meter range infra-red
Sony MDR-CD1000	200	Std	330	45	1.5m, 3.5/6.3mm plug
Stax SR34	169	Opn	170	-	Electrostatic
Stax SR Gamma	239	Opn	300	-	Electrostatic
Stax SR84	259	Opn	160	-	Electrostatic
Stax SR Lambda	349	Opn	325	-	Electrostatic
Stax Gamma Pro	399	Opn	300	-	Electrostatic
Stax Lambda Pro	449	Opn	325	-	Electrostatic
Stax Lambda Sig	549	Opn	325	-	Electrostatic
Technics RP-HT77	30	Std	150	32	3m lead
Technics RP-HT86	40	Std	150	35	3m lead
Technics RP-HT116	60	Std	190	35	3m lead
Technics RP-F10	100	Std	300	32	3m lead
Technics RP-F30	180	Std	340	32	3m lead
Vivanco SR35 Micro	12	Ear	4	18	For personal stereos
Vivanco SR65 Mini	13	Opn	30	32	For portable CD players
Vivanco SR25 Micro	14	Ear	4	18	Includes case
Vivanco SR45 Micro	15	Ear	4	18	Including volume control
Vivanco SR474	32	Opn	110	36	Soft ear cushions
Vivanco SR606	40	Opn	225	32	3.5/6.3mm plug
Vivanco SR808	55	Opn	250	30	3.5/6.3mm plug
Vivanco SR909	70	Opn	285	600	Remote control lead, all plugs
Vivanco IR900	70	Opn	235	-	Infra-red cordless
Vivanco SR10001/1FL	110	Opn	265	100	In-front localisation
Vivanco SR9001s	120	Opn	280	-	Infra-red cordless

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Acoustic Energy Aegis 1	452	2x Pt	86	8	150	21,39,26	Stand mount, metal cone
Acoustic Energy Aegis 2	799	2x Pt	86	8	200	33,106,26	Floor, reflex, metal cone
Acoustic Energy AE1	870	2x Pt	88	8	200	26,30,18	Metal dome/cone, solid enc.
Acoustic Energy AE2	1175	2x Pt	91	6	200	24,40,32	Twin bass, metal cone
Acoustic Energy AE3	1650	3x Pt	87	4	250	37,27,63	Simplified metal dome/cone
Advent Mini	99	-	88	8	120	16,28,14	Bookshelf/stand mount
Advent Baby 2	149	2x	89	8	75	26,39,15	Bookshelf/stand mount
Advent Graduate	219	2x	89	8	210	28,44,17	Bookshelf/stand mount
Advent Prodigy	299	-	89	8	300	24,68,20	Floor standing, free space
Advent Legacy 2	349	-	90	8	500	38,67,22	Floor standing, free space
Advent Laureate	499	-	90	8	500	21,80,29	Floor standing, free space
Advent Heritage	579	-	90	8	600	25,89,31	Floor standing, free space
Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
Allison AL105	170	2x	90	4	150	24,37,21	Boundary, stand mount

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
 Allison AL100 100 2x 90 4 150 33,24,19 Boundary, stand mount



Key to loudspeakers
 Price - typical retail, to nearest pound.

Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic bass/ESL or ribbon top.

Sens - output at given power input level.
 Impedance - in ohms. Power - maximum recommended amplifier output.
 Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

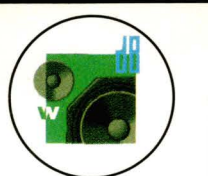
Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Allison MS200	220	-	90	4	75	13,25,14	Boundary, stand mount
Allison AL110	220	-	90	4	150	24,40,23	Floor standing, free space
Allison AL115	280	-	90	4	150	28,51,26	Boundary, stand mount
Allison CD6	300	-	90	4	150	29,29,29	Cuboid, wall mount
Allison CD7	380	-	90	4	150	24,70,24	Floor standing, free space
Allison AL120	420	-	90	4	200	28,61,29	Floor standing, free space
Allison CD8	550	-	90	4	200	27,73,27	Floor standing, free space
Allison AL125	650	-	90	4	200	28,78,29	Open space, free standing
Allison AL130	800	-	90	4	200	32,95,34	Open space, free standing
Allison I.C. 10	2500	-	87	6	200	48,102,27	Floor standing, free space
Allison I.C. 20	5500	-	87	6	400	53,122,31	Floor standing, free space
AMC WM50	120	-	86	8	60	19,28,7	Ceiling mount
AMC WM75	160	-	86	8	80	22,30,9	Ceiling mount
AMC WM100	210	-	86	8	100	26,36,10	Ceiling mount
Apogee Grand	0	Ribbon	86	-	-	71,194,86	Three way ribbon, active sub
Apogee Centaur Minor	1345	Hybrid	88	4	100	30,88,20	Ribbon/dynamic
Apogee Ribbon Wall	1750	Hybrid	89	-	-	27,120,7	Ribbon/dynamic
Apogee Centaur	2300	Hybrid	88	4	150	33,102,25	Ribbon/dynamic
Apogee Slant 6	2400	Hybrid	88	-	-	-	Ribbon tweeter, dynamic bass
Apogee CDD Subwoofer	3490	Hybrid	87	-	-	63,38,55	Active moving coil sub
Apogee Stage Sub	3645	MC	86	-	-	58,25,42	Active moving coil sub
Apogee Slant 8	3700	Hybrid	88	-	-	-	Ribbon treble, dynamic mass
Apogee Caliper Sig	3998	Ribbon	87	-	-	58,127	Two way
Apogee Stage	4100	Ribbon	86	-	-	55,82,5	Two way
Apogee Centaur Major	4980	Hybrid	88	4	200	40,141,27	Ribbon/dynamic
Apogee Studio Grand	14900	Hybrid	87	-	-	63,160,55	Three way ribbon, active sub
AR M.5	139	2x	88	6	-	18,21,15	Boundary, bookshelf mount
AR Pi One	149	-	90	8	60	19,32,17	Stand mount, boundary siting
AR Fun Partner	170	-	90	6	75	27,15,20	Utility model
AR Pi Two	199	-	90	8	100	27,44,2	Stand mount, boundary siting
AR M1	199	-	88	8	100	28,27,20	Boundary, bookshelf mount
AR Pi Three	219	-	89	8	100	21,51,22	Stand mount, boundary siting
AR Active Partner	230	Active	-	-	-	19,27,15	Utility model
AR Rock Partner	240	-	90	8	100	24,37,22	Utility powered (active)
AR M2	299	-	90	8	125	24,42,36	Boundary, bookshelf mount
AR Subwoofer 1MS	300	-	90	4	180	30,21,48	Compact subwoofer
AR M3	349	-	90	8	125	24,55,40	Boundary, bookshelf mount
AR Powered Partner	350	Active	-	-	15	19,27,15	Stand mount, free space
AR Pi Four	399	-	88	8	125	25,57,27	Stand mount, free space
AR M4	429	-	88	8	150	20,72,40	Floor standing, free space
AR M5	799	-	90	8	175	22,92,27	Floor standing, free space
AR M6	899	-	90	8	200	22,106,27	Floor standing, free space
Arcom Delta 2	300	2x Pt	88	8	75	22,38,28	Stand mount, walnut or black
ATC SCM10	995	2x IB	80	8	300	18,38,26	Minimum 100wpc, non-boundary
ATC SCM20	1461	2x IB	83	8	300	31,72,34	Minimum 100wpc, non-boundary
ATC SCM20 Tower	1999	2x IB	83	8	300	24,103,34	Floor standing SCM20
ATC SCM50	3218	3x Pt	85	8	150	31,72,43	To special order only
ATC SCM100	3683	3x Pt	88	8	-	40,84,53	To special order only
ATC SCM50A	4497	Active	-	8	350	31,72,48	With crossover and amplifiers
ATC SCM100A	5006	Active	-	8	350	40,84,59	With crossover and amplifiers
ATC SCM200A	10995	Active	91	8	850	83,73,440	With cross over and amplifiers
ATC SCM300A	11995	Active	94	8	850	88,92,47	With cross over and amplifiers
Audio Note AN-KB	499	-	90	8	100	28,46,23	Free space, stand mount
Audio Note AN-K/SP	699	-	90	6	100	28,46,23	Free space, stand mount
Audio Note AN-J/B	799	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-J/SP	999	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-E/B	1299	-	94	8	150	36,84,28	Free space, stand mount
Audio Note AN-E/SP	1599	-	94	8	150	26,84,28	Free space, stand mount
Audio Vector 2X	850	2x	89	8	120	17,90,22	Black ash
Audio Vector 3X	1200	3x	89	8	150	19,98,52	Black ash
Audio Vector 5X	2300	4x	91	8	200	24,110,34	Black ash
Aura SP-50	400	Pt	87	4	120	21,40,24	Carbon fibre bass unit
B&O Beovox RL1000	215	3x	86	8	60	32,40,13	Simplified RL6000
B&O Beovox CX50	285	2x IB	89	6	100	12,21,21	
B&O Beovox CX100	395	2x IB	89	6	200	12,32,21	
B&O Beovox RL6000	435	3x	87	8	100	41,54,18	Simplified RL7000
B&O Beovox 4500	450	2x Pt	87	8	90	45,38,8	
B&O Beovox RL7000	665	3x	88	8	200	50,70,24	Twin bass
B&O Beolab 4500	1125	Active	-	-	45	45,38,8	Attaches to wall, display
B&O Beolab 6000	1350	Active	-	-	80	20,110,21	Column, two amps, shielded
B&O Beolab 8000	2025	Active	-	-	100	15,132,15	Column, two built in amps
B&O Beolab Penta 3	2375	Active	-	-	150	22,165	



Key to loudspeakers
 Price - typical retail, to nearest pound
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Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
B&W DM640i	900	3x Pt	91	4	200	24,97,41	Floor standing
B&W Matrix 804	1495	Pt	89	8	200	26,92,26	Matrix enclosure
B&W Matrix 803 S2	1945	Pt	90	8	250	26,101,34	Matrix enclosure
B&W Matrix 802 S3	2445	Pt	90	8	500	30,104,37	Matrix enclosure
B&W Matrix 801 S3	3500	Pt	87	8	600	44,100,56	Floor, studio monitor
B&W Silver Signature	4500	Pt	88	8	120	25,45,24	External crossover
Bose XL1000	115	Pt	-	8	50	29,19,17	
Bose XL2000	160	Pt	-	8	70	36,23,18	
Bose XL3000	180	Pt	-	8	90	47,29,23	
Bose 101 M'ble Monitor	190	-	-	4	60	13,23,15	Black finish
Bose XL4000	220	Pt	-	8	100	57,32,30	
Bose VS100	250	-	-	8	-	23,15,15	
Bose 151 Environmental	270	-	-	6	60	24,14,16	Waterproof/suitable for extrem
Bose 161 Freestyle	275	-	-	6	60	25,14,16	
Bose 201 Ser III	290	-	-	8	60	38,20,25	Direct/reflecting technology
Bose C'puter RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Video RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Roomate II	300	Active	-	-	60	24,14,16	Self powered AC/12V DC
Bose 301 VM	380	-	-	8	75	24,43,27	Direct/reflecting technology
Bose 305	430	2x	-	8	100	23,45,28	Tall stand mount, boundary
Bose A'mass AM3 II	500	-	-	4-8	50	36,20,20	Acoustimass technology
Bose 401	500	-	-	4	100	30,30,76	Direct/reflecting technology
Bose SE-5 Ser II System	760	-	-	4-8	100	90,100,18	
Bose A'mass AM511	760	-	-	4-8	200	49,35,19	Acoustimass direct/reflecting
Bose A'mass AM7	830	-	-	4-8	100	35,49,19	Acoustimass direct/reflecting
Bose 601 MKIII	880	-	-	8	200	32,31,76	Direct/reflecting technology
Bose 901 V1	1650	1x	-	8	-	33,53,32	Direct/reflecting technology
Boston Acoustics HD5	139	2x	89	8	50	25,16,18	Bookshelf, black
Boston Acoustics 325	139	-	90	4	50	17,17,5	Wall/ceiling white flush mount
Boston Runabout	169	-	89	8	50	22,15,16	White indoor/outdoor system
Boston Acoustics HD7	169	2x	90	8	75	36,23,18	Bookshelf, black
Boston Satellites	170	2x	89	8	-	-	Satellite speakers
Boston Acoustics 350	179	-	90	4	50	24,17,6	Wall/ceiling white flush mount
Boston Acoustics 335	179	-	90	8	50	18,9	Wall mount, round
Boston Acoustics HDB	199	-	90	8	75	46,29,20	Stand/shelf, black
Boston 360 Ser II	209	-	89	8	60	22,15,7	Wall/ceiling, white, flush mou
Boston Acoustics HD9	249	2x ABR	90	8	100	62,32,25	Stand/shelf mount
Boston Acoustics 380	249	-	90	8	75	31,24,8	Wall/ceiling white flush mount
Boston Acoustics Voyager	299	-	89	8	60	26,16,17	White indoor/outdoor, metal
Boston Acoustics SW10	449	Sub	-	-	100	34,17,42	Powered subwoofer
Boston SubSat Six	450	Sat/sut	89	8	100	-	Passive subs and two satellite
Boston SubSat 7	549	-	89	8	125	-	PAssive sub & 2 satellites
Boston Lynfield 300L	1499	-	83	8	250	23,34,28	Stand mount, black
Boston Lynfield 500L	4449	-	85	5	350	122,23,47	Free stand, separate bass/top
Canon S-C10	130	2x	87	6	87	34,15,15	Shielded, nr omnidirectional
Canon SV-15	130	2x	86	8	50	24,17,17	Utility - wide dispersion
Canon S-30	180	2x Pt	90	6	75	25,31,28	Wide imaging stereo
Canon S-B20	200	Sub	87	8	100	39,48,27	Free standing, passive
Canon V-100	210	2x Pt	90	4	75	25,33,17	Corner mount, wide dispersion
Canon S-35	250	2x	90	6	75	27,23,24	Wide Imaging Stereo
Canon V-SB100	250	Sub	88	6	150	37,34,21	Subwoofer for V100
Canon S-60	350	2x	89	8	100	31,25,25	Near omnidirectional
Canon S-50	350	2x Pt	89	8	75	25,31,25	Wide imaging stereo
Canon S-70	700	2x Pt	87	6	100	25,78,25	Wide imaging stereo
Castle Trent II	199	Pt	89	8	60	20,34,18	Shelf/stand, nine finishes
Castle Durham 900	279	Pt	90	8	85	22,40,23	Shelf/stand, nine finishes
Castle York	399	Pt	89	8	100	26,43,22	Stand mount, stands inc
Castle Severn	499	Pt	87	8	110	23,77,20	Free standing, 9 finishes
Castle Chester	699	Horn	90	8	100	23,91,25	Quarter wave, nine finishes
Castle Howard	999	3xHorn	90	8	125	26,104,41	Quarter wave, nine finishes
Castle Winchester	1499	3x	90	8	150	42,108,23	9 finishes, quarter wave
Celestion 1	109	-	86	8	50	16,27,21	
Celestion CSC	129	-	89	6	75	33,13,15	
Celestion 3 MKII	129	-	88	8	75	21,31,18	Integrated LF/baffle moulding
Celestion CS135	139	-	86	8	90	52,19,34	
Celestion CS2	149	-	86	8	60	16,29,22	
Celestion CS4	169	-	87	8	75	18,33,23	
Celestion 5 MkII	169	-	89	8	90	25,35,21	Larger version of Celestion 3
Celestion 9	269	-	89	8	100	21,50,25	
Celestion 15	389	-	89	8	100	21,100,23	
Celestion SL6Si	429	2x	84	8	120	20,38,27	Compact stand mount, free spac
Celestion CS6	449	-	88	8	100	19,85,31	
Celestion CS8	499	-	88	8	120	19,100,31	
Celestion 100	539	-	84	8	120	21,42,26	
Celestion SL12si	629	-	86	8	150	20,53,29	
Celestion SL600si	820	-	82	8	120	20,37,24	Aerolam lightweight enclosure
Celestion 300	1099	-	84	8	120	21,97,33	
Celestion 700SE	1435	-	82	8	120	20,37,24	
Cerwin Vega VS8	250	2x	94	6	100	28,51,29	Bookshelf
Cerwin Vega SA1-6	300	Sat/sut	95	-	125	22,25,32	3 box satellite/subwoofer
Cerwin Vega VS10	350	3x	95	6	125	33,70,29	Floor standing
Cerwin Vega VS12	550	3x Pt	97	4	250	42,81,38	Floor standing
Cerwin Vega DC10	550	3x Pt	96	-	200	29,94,35	Floor standing
Cerwin Vega DC12	650	3x Pt	98	-	300	36,98,35	Floor standing
Cerwin Vega VS15	700	3x Pt	102	4	400	46,90,47	Floor standing
Cerwin Vega DC15	850	3x Pt	100	-	500	44,103,46	Floor standing
Cerwin Vega 1515	1300	6x Pt	103	4	600	44,135,46	Floor standing, hi sensitivity
Chord Sys Audio 905	249	2x	89	8	70	27,15,19	Black Ash



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LOUDSPEAKERS							
Clements 300Si	395	-	89	4-8	90	24,36,36	Compression line
Clements 600Si	595	-	88	4-8	100	24,81,36	Compression line
Clements Reference 1	995	-	86	8	100	20,43,29	Ribbon tweeter
Clements Reference 7	1995	-	88	4.5	200	25,114,4	Ribbon tweeter
Dali 102	250	-	88	6	100	21,32,26	
Dali 104	400	-	93	4	120	86,22,27	
Dali 400	700	-	93	4	180	24,97,34	
Dali Skyline 1000	1600	-	88	-	120	-	
Dali Skyline 2000	2200	-	88	4	120	51,160,45	
Dawn Audio Chorus BS	482	2x IB	89	8	-	26,38,21	Bookshelf
Dawn Audio Chorus FS	698	2x IB	89	8	-	26,88,21	Floor standing
Dawn Audio Symphony	1995	3x IB	91	8	-	34,113,32	Floor standing
Denon SCM2	80	IB	87	6	70	19,28,20	UK designed & built
Denon SC-E313	160	Pt	88	8	100	22,75,23	UK designed & built
ECA SERVO A 2	1850	2x Pt	80	8	150	22,102,30	True ribbon tweeter
Epos ES11	395	Pt	87	8	75	20,38,25	Free space, stand mount
Epos ES14	595	Pt	87	8	100	23,49,29	Free space, stand mount
Faraday FS1	245	2x	87	8	75	27,46,25	Matt black or granite effect
Faraday SG	345	2x	89	4	75	27,26,25	Matt black or granite effect
Faraday Siren	445	2x	90	4	80	27,25,46	Matt black or granite effect
Faraday FS10	795	3x	91	4	100	27,25,93	Matt black or granite effect
Fullers Sultan	399	2xPt	91	8	50	24,51,30	3 finishes
Fullers Sultan H.E.	439	2xPt	98	8	90	24,51,30	High sensitivity, 3 finishes
Fullers Pharaoh 1	649	2xPt	88	8	60	20,30,20	Curved sides, various finishes
Fullers Sphinx	839	3x	89	8	70	25,91,30	Floor standing, var finishes
Fullers Pharaoh 2	1200	3xPt	88	8	80	39,100,31	Pharaoh 1 with added bass encl
Fullers Pharaoh 3	2499	4xPt	88	8	150	46,118,45	Pharaoh - bass & subbass encls
Gale Reference Monitors	100	2x	88	8	70	-	Bookshelf, black finish
Gale Model 2	150	2x	88	8	70	-	Bookshelf, black finish
Gale Model 4	200	2	88	8	75	-	Bookshelf, black finish
Gamma Acoustics Epoch	1499	-	-	-	-	27,95,36	
Genelec 1019A	1572	Active	-	-	28	23,31,25	
Genelec Blamp 1031A	2068	Active	-	-	104	25,39,29	
Genelec Triamp S30	3055	Active	-	-	108	32,50,32	
Genelec Triamp 1037A	4982	Active	-	-	191	40,68,30	
Genexxa GX330	80	-	-	6	50	35,21,24	
Genexxa GX650	140	-	90	8	60	23,76,26	
GLL Arena	89	-	87	6	70	26,23,14	
GLL Maxim	119	-	86	6	100	10,26,17	
GLL Mezzo	159	-	88	6	100	21,36,25	
GLL Magnum	199	-	86	6	100	25,42,29	
Goodmans Active 75	65	Active	-	-	80	-	
Goodmans M100	80	2x	86	8	75	17,26,20	Bookshelf, close to wall
Goodmans HT100	100	-	86	8	60	25,53,20	
Goodmans HT170	150	-	92	8	100	25,70,22	
Grundig MBX310	80	3xPt	-	4	70	18,42,29	3 drivers, 2 way
Grundig BX1	160	2x Pt	-	4	60	23,40,30	16 litre
Grundig BX2	230	3x Pt	-	4	80	24,49,33	22 litre
Grundig BX3	350	2x Pt	-	4	120	24,107,34	53 litre, 3 drivers, 2 way
Harbeth BBC LS3/5A	675	IB	82	10	30	30,19,18	Free standing
Harbeth HL-P3	699	IB	83	8	45	31,19,18	Free standing, shielded, biwir
Harbeth BBC LS5/12A	1195	Pt	81	8	100	30,18,23	Free standing, biwire
Harbeth HL Compact 7	1295	Pt	86	8	120	52,27,32	Shielded, biwire
Harbeth HL-5	1495	Pt	86	8	100		



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LOUDSPEAKERS							
Jamo Sat 160	100	2x IB	90	8	50	14,20,88	Shelf/wall mount, with wall br
Jamo D115	100	-	91	4-8	75	24,42,22	
Jamo Cornet 30.4	100	2x Pt	88	8	55	20,32,23	Black ash - Mahogany E20 extra
Jamo Sat 200	110	2x	90	8	50	15,22,88	Stereo passive sub
Jamo Sat 300	120	2x	90	8	50	15,21,8	Use with SW500
Jamo Cornet 40.4	140	2x Pt	89	8	60	20,32,23	Black ash - Mahogany E20 extra
Jamo Studio 180	150	3xPt	92	4	80	22,50,26	
Jamo Artina	150	2xPt	90	8	50	29,25,8	Small, flat wall speaker
Jamo Sat 500	150	2xPt	90	8	50	16,21,14	Satellites for SW500
Jamo D135	150	-	94	4-8	90	28,52,25	
Jamo Converta	150	2x Pt	90	8	50	9,25,24	Lamp-like appearance
Jamo Cornet 60.4	180	2x Pt	90	8	80	23,42,27	Black ash - Mahogany E20 extra
Jamo D165	190	-	94	4-8	100	28,52,25	
Jamo SW160 System	200	-	90	8	-	20,34,48	Subwoofer, adjustable
Jamo Art	200	2x Pt	88	8	60	35,40,9	Shape and size of shallow 20 i
Jamo Classic 4	230	2xPt	90	4	100	20,47,25	
Jamo D265	300	3xPt	95	4	150	44,68,32	
Jamo Classic 6	300	2xPt	90	4	100	20,84,29	Inc spiked feet
Jamo BX100A	300	3x Pt	91	8	100	32,55,28	Floor or stand mount
Jamo 307	300	2x Pt	87	6	70	18,31,27	Stand mount
Jamo Cornet 90-4	330	3xIB	91	4	140	26,87,27	
Jamo 407	350	2x Pt	88	4	80	22,41,29	Stand mount
Jamo Graphic	350	2x Pt	88	8	60	39,44,8	Wall mount
Jamo Atmosphere	380	2x Pt	88	8	60	27,37,16	Wall mount, doubles as lamp
Jamo Cornet 100-4	400	3xIB	91	4	200	32,95,27	
Jamo Classic 8	400	3xPt	90	4	150	23,90,29	Inc spiked feet
Jamo Silhouette	400	-	90	5	80	25,122,17	
Jamo D365	400	-	96	4-8	200	46,78,35	
Jamo BX150A	400	3x Pt	92	8	150	38,63,31	Floor mount
Jamo SW500 System	430	2x	90	8	140	41,38,53	Passive stereo subwoofer
Jamo BX200A	450	3x Pt	93	8	250	29,17,13	Floor mount
Jamo 477	500	2x Pt	88	4	100	19,77,29	Floor standing
Jamo 507	700	3x Pt	88	4	150	22,91,37	
Jamo 707	900	3x Pt	90	4	200	24,104,39	
Jamo Oriol	6000	3x	87	6	300	40,178,30	Floor standing, coupled cavity
JBL Control One	115	2xPt	87	4	150	24,156,14	Shielded, wall mountable
JBL 4208	449	-	89	8	300	29,45,23	
JBL L1	479	2x Pt	87	8	200	25,40,20	Asymmetric, time aligned
JBL HTS-1	629	-	-	-	150	-	
JBL L3	699	2x Pt	89	8	200	30,86,24	Asymmetric, time aligned
JBL HTS-2 system	800	-	-	4	150	-	
JBL HTS-3	999	-	-	-	180	-	
JBL L5	1299	3x Pt	90	6	300	26,45,33	Asymmetric, time aligned
JBL Ti 1000	1500	2x IB	89	4	150	20,30,13	Asymmetric, double wall
JBL L7	1699	4x Pt	89	4	200	117,25,45	Asymmetric, time aligned
JBL Ti 2000	2000	3x IB	89	4	200	33,82,30	Asymmetric, double wall
JBL Ti 3000	2499	3x IB	90	6	200	46,105,35	Asymmetric, double wall
JBL i 5000	3499	3x IB	91	6	300	48,114,38	Asymmetric, double wall
Jordan Watts JHFLG	420	-	-	-	-	-	Flagship pottery colour
Jordan Watts JH200	510	1x IB	86	8	80	19,33,17	Bookshelf or stand mount
Jordan Watts JH400	820	1x IB	86	8	80	28,32,17	Marble finish available £970
Jordan Watts JH400M	970	1x	86	8	80	82,28,21	
J Watts JH1+1 Aspect	1730	2x	85	8	100	92,40,22	
J Watts JH1+1 Aspect K	2310	2x	85	8	100	92,40,22	
J Watts JH1+1 Aspect M	2745	2x	85	8	100	92,40,22	
J Watts Aspect JH1+1	2745	2xIB	85	8	100	90,93,23	Matt - alt finishes extra
Jordan Watts JH2K	3230	-	-	-	-	-	
J Watts Classic JH2KM	4250	2x	87	8	150	47,82,34	Line tweeter array
J Watts Classic JH5K	4875	2x IB	89	8	250	47,126,40	Floor stand, line array
J Watts Classic JH5KM	5860	2x	89	8	250	47,125,40	Line driver array
J Watts Classic JH10K	9340	2x IB	92	8	500	47,156,40	Floor stand, line array
Jordan Watts JH10KM	10495	2xIB	92	8	500	47,156,40	Line driver array
JPW Minim SGL SHD	50	2x	87	6	70	19,28,20	Shielded, single speaker
JPW Satellite SGL SHD	50	2x	85	8	70	13,24,11	Shielded, single speaker
JPW Satellite	80	2x	85	8	70	13,24,11	Shielded, single speaker
JPW Minim	80	2x	87	6	70	19,28,20	135mm bass, 14mm treble
JPW Minim Pair Solid	89	2x	87	6	70	19,28,20	Shielded
JPW Sonata Vinyl	100	2x	87	8	70	23,32,22	
JPW Sonata	120	2x	87	8	70	23,32,22	165mm bass, 14mm treble
JPW Subwoofer	130	1x	95	8	80	26,51,27	
JPW P1 Vinyl	150	2x	89	8	70	26,44,25	
JPW P1	170	2x	89	8	70	26,44,25	200mm bass, 19mm treble
JPW AP2	200	2x	89	8	80	26,44,25	200mm bass, 19mm treble
JPW AP3	230	2x	88	8	100	26,52,29	200mm bass, 19mm treble
JPW Ruby 1	500	2x	87	6	120	32,19,21	Alloy cones
JPW Ruby 2	700	2x	88	6	150	43,22,25	Alloy cones
JPW Ruby 3	1000	3x	87	6	150	75,19,22	Alloy cones
JPW Ruby 4	1300	3x	89	6	200	90,22,26	Alloy cones
JVC SPX220TBK	100	3x Pt	90	8	60	24,66,24	
JVC SPX550BK	130	3xPt	90	8	60	24,66,24	
JVC SPX770BK	150	3xPt	90	8	80	28,75,25	
JVC SPX990BK	230	3x Pt	91	8	100	31,86,27	
JVC SX-SW9	300	2xPt	90	6	100	-	Satellite subwoofer system
JVC SX911WD	660	3xPt	91	6	150	38,63,35	
JVC SX500	700	2xPt	90	6	180	27,45,28	

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice Directory*.
Audiolab 8000A 450 Int N 60 MM,MC,1T,3T Y N 45,8,36 Preout/main in

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
KAL Mini-Ref MkII	395	-	86	8	120	23,27,17	
KAL Mini-Tower	619	-	89	6	150	17,90,22	
KAL Compact Ref	650	-	89	8	140	23,36,27	
KAL Tunejal	795	-	89	8	150	23,100,27	
KAL Trans-double	1500	-	89	8	250	23,112,36	
KAL Warlock	1600	-	90	6	250	25,113,36	
KEF Coda 7	129	2xPt	91	6	70	18,30,25	Black ash finish
KEF K120	169	2x IB	87	8	80	21,34,25	Stand/bookshelf
KEF Q10	199	2x Pt	88	6	100	19,32,26	Uni-Q, shielded
KEF K140	239	2x IB	89	8	100	26,49,25	Stand/bookshelf
KEF 70S	299	2xIB	87	6	100	17,25,12	Uni-Q, shielded, AV surround
KEF K160	329	2x ABR	89	8	125	26,75,23	Floor standing
KEF Q30	349	2x Pt	88	6	125	19,73,30	Uni-Q, shielded, floor standin
KEF Q60	419	2x Pt	90	8	100	25,48,28	Uni-Q, bookshelf/stand
KEF Q50	499	3x Pt	90	6	150	19,83,30	Uni-Q, shielded, floor standin
KEF 101/3 Black	549	2x Pt	87	6	150	22,33,26	Uni-Q, Kube option
KEF Q80	569	2x ABR	89	8	125	25,86,27	Uni-Q floor standing
KEF LS3/5a	599	2xIB	82	11	30	19,30,16	Raymond Cooke Special Edition
KEF Q70	699	4xPt	90	6	175	19,105,30	Uni-Q, shielded, floor stand
KEF Q90	739	3x Pt	89	8	150	25,90,32	Uni-Q floor standing
KEF 102/2MS	749	3xCC	89	4	150	22,50,26	Uni-Q, shielded shelf/stand mt
KEF Model One	999	3xCC	89	4	150	23,86,30	Uni-Q, floor stand, shielded
KEF 103/4MS	1199	4xCC	91	4	200	22,90,31	Uni-Q, shielded, coupled cavit
KEF 103/4S	1249	4xCC	91	4	200	22,90,31	'Audiophile' 103/4
KEF Model Two	1499	4xCC	90	4	200	23,101,30	Uni-Q, floor stand, shielded
KEF 104/2	1595	5xCC	92	4	200	28,90,41	Floor standing, coupled cavity
KEF 104/2 REC	1799	5xCC	92	4	200	28,90,41	Raymond Cooke Special Edition
KEF Model Three	1999	5xCC	91	4	300	27,114,34	Uni-Q, floor stand, shielded
KEF 105/3	2295	6xCC	93	4	300	28,110,41	Uni-Q, coupled cavity bass
KEF 105/3S	2345	6xCC	93	4	300	28,110,41	Uni-Q, audiophile 105/3
KEF 107/2	3695	4xCC	90	4	300	33,116,45	Floor standing, Kube equaliser
KEF 107/2 REC	3999	4xCC	90	4	300	33,116,45	Raymond Cooke Special Edition
Kenwood LS-200G	200	Pt	89	4	60	21,35,30	European design
Kenwood LS-770G	260	Pt	88	4	110	27,48,26	European design
Kenwood LS-300G	300	Pt	82	8	60	21,35,30	European design
Kenwood LS-880G	360	Pt	86	4	160	28,51,26	Titanium tweeter
Kenwood LS-500G	500	Pt	87	4	100	22,44,28	European design
Kenwood LS-700G	1200	Pt	87	4	120	30,90,30	European design
Kenwood LS-1000G	1700	Pt	87	4	160	34,110,38	European design
Keswick Audio Aria	269	2x	88	8	70	21,42,27	Bookshelf
Keswick Audio Volante	499	-	90	8	85	21,85,27	Floor standing
Keswick Audio Figaro	799	-	86	8	125	19,28,27	Features solid timbers
Keswick Audio Alto	999	Sub	87	8	150	19,70,27	To match Figaro
Koss SA10	19	Active	-	-	-	-	High imp
Koss SA20	25	-	-	-	-	-	
Koss SA30	36	Active	-	-	-	-	High impedance
Linnaeum LFX Wood	649	Hybrid	90	-	-	16,22,18	Modified ribbon/dynamic
Linnaeum LSII	991	Hybrid	90	-	-	30,150,38	Modified ribbon/dynamic
Linnaeum LFX Corian	1399	Hybrid	90	-	-	16,22,18	Modified ribbon/dynamic
Linn Index	259	2x IB	87	8	-	21,44,24	30 watts minimum
Linn Tukan	398	2xIB	87	8	30	19,30,18	Multipurpose
Linn Keilidh Passive	595	2x IB	87	4	60	20,83,28	Floor standing, 60w min
Linn Keilidh Aktiv	1090	2x IB	-	-	-	20,83,28	



Key to loudspeakers
Price - typical retail, to nearest pound.
Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic

bass/ESL or ribbon top.
Sens - output at given power input level.
Impedance - in ohms. Power - maximum recommended amplifier output.
Size - width x height x depth in cm.
Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Mission 760i	130	2x Pt	89	6	75	18,30,20	Stand mount, boundary siting
Mission 73C	150	2x	90	8	75	16,20,43	TV top, shielded
Mission 760i SE	150	2x Pt	89	6	75	18,30,20	Stand mount, boundary siting
Mission 732	200	2x	89	8	100	41,21,31	Stand mount, boundary
Mission 780SE	270	2x pt	89	6	75	18,30,26	Stand mount, boundary siting
Mission 733	300	2x	89	8	100	84,21,31	Floor standing, boundary
Mission 751	300	2x Pt	89	6	75	19,32,27	Stand mount, boundary
Mission 734	430	3x	90	8	125	84,21,33	Floor standing, boundary
Mission 752	500	2x Pt	90	8	125	20,84,26	Floor stand, boundary
Mission 735	600	3x	90	8	150	106,21,33	
Mission 753	700	2x Pt	90	6	150	21,88,32	Floor stand, transverse folded
Modulus Subwoofer	1750	Active	-	-	250	49,45,45	Variable phase, high/low filter
MA Monitor 1 Gold	200	2x IB	88	8	70	16,24,16	Miniature stand/shelf mount
MA Monitor 7 Gold II	245	2x Pt	89	8	70	17,35,17	Stand/shelf mount
Monitor Audio MA100G	280	2x IB	89	8	120	16,24,16	As MA Monitor 1, shielded
Monitor Audio MA201	300	2xPt	90	8	100	22,41,27	Gold dome tweeter, pulp bass
MA Monitor 9 Gold II	350	2x Pt	88	8	100	21,37,21	Stand/shelf mount
Monitor Audio MA202	450	2xPt	90	8	100	22,89,29	Gold dome tweeter, pulp bass
MA Monitor 14 Gold II	500	3x	88	8	120	21,76,24	Floor/shelf standing
Monitor Audio Studio 2	600	2x	89	8	120	27,17,20	
Monitor Audio Studio 6	900	2x Pt	88	8	200	22,35,25	Stand/shelf mount, metal bass
Monitor Audio Studio 12	1000	2	90	8	200	92,17,20	Black - rosewood extra
MA Studio 20SE	2200	2x Pt	88	8	200	20,92,26	Floor stand, metal cone bass
Monitor Audio Studio 50	4000	2x	90	8	300	20,104,30	Floor stand, metal bass & mid
Mordaunt-Short M505	110	Pt	87	8	60	26,17,18	Bookshelf, wall positioning
Mordaunt-Short CS1	115	Pt	87	8	100	16,23,13	Shielded, Positec protected
Mordaunt-Short MS10	140	Pt	88	8	60	19,31,22	Alloy tweeter, MCS woofer
Mordaunt-Short HT30	150	Pt	90	8	120	25,43,29	Shielded, Positec protected
Mordaunt-Short SW1	150	Sub	90	8	100	24,58,26	Coupled cavity, matches CS1
Mordaunt-Short MS20	190	Pt	89	8	75	22,37,22	Alloy tweeter, MCS woofer
Mordaunt-Short MS30	270	Pt	90	8	100	25,43,28	Alloy tweeter, MCS woofer
Mordaunt-Short HT50	275	Pt	90	8	120	25,87,33	Positec, integrated subwoofer
Mordaunt-Short MS40	400	Pt	90	8	150	23,82,28	Alloy tweeter, MCS woofer
Mordaunt-Short MS50	530	Pt	90	8	200	25,87,33	Alloy tweeter, MCS woofer
NAD 800	149	Pt	90	6	60	20,32,24	10 litre enclosure
NAD 802	219	Pt	90	6	80	20,40,26	11.5 litre enclosure
Naim IBL Active	776	-	-	-	65	25,80,28	Boundary, floor standing
Naim IBL Passive	895	-	86	6	65	25,80,28	Boundary, floor standing
Naim SBL Active	1586	-	-	-	75	27,89,27	Boundary, floor standing
Naim SBL Passive	1708	-	88	6	75	27,89,27	Boundary, floor standing
Naim DBL Active	6991	-	-	-	200	65,120,40	Boundary, floor standing
Naim DBL Passive	7672	-	92	4	200	65,120,40	Boundary, floor standing
Neat Petite	595	2x	87	6	100	20,30,18	
Orelle Orator II	699	2xPt	91	8	100	27,40,30	Time aligned, bwire
Origen Live OL1B	289	-	89	8	100	20,30,19	
Origen Live OL2B	349	-	90	8	150	19,80,19	Floor standing
Origen Live OL-1AS	399	-	89	8	199	20,30,190	Floor standing
Origen Live OL-1A	399	-	86	8	150	20,30,19	
Origen Live OL-2AS	469	-	90	8	100	19,80,19	Floor standing
Origen Live OL-2A	469	-	86	8	150	19,80,19	Floor standing
Origen Live OL-1	499	-	86	8	150	20,30,19	
Origen Live OL-2	649	-	86	8	150	19,80,19	Floor standing
Origen Live OL3	975	3x	88	8	150	19,83,23	Floor standing
Origen Live Conqueror	1600	3x	89	8	150	23,87,23	Floor standing
Pentachord A	449	IB	87	8	80	21,28,20	Direct coupled
Pentachord B	499	IB	87	8	80	52,35,52	Active crossover, including el
Pentachord Pentode	695	IB	87	4	80	20,74,20	Active crossover, including el
Pentachord P'column	1579	2xIB	87	4	80	21,108,20	Including active crossover, lo
Philips Legend FB720	200	Pt	80	7	75	21,37,31	
Philips DSS930	1300	Active	-	-	75	22,58,33	Active digital loudspeaker
Pink Triangle Vertical	865	Hybrid	86	11	100	15,80,32	Ribbon hybrid
Pioneer CS-3030	120	3x Pt	90	8	120	27,54,24	Bookshelf
Pioneer CS-u3030	170	3x Pt	90	8	140	31,53,25	Bookshelf
Pioneer CS-7030	230	3x Pt	90	8	190	35,70,28	Bookshelf
Pioneer S-4UK	250	2x Pt	88	6	80	21,37,28	No crossover, UK optimised
Pioneer S-60	270	2x	87	4	80	22,47,28	Bookshelf
Pioneer CS-9030	280	3x Pt	92	8	220	39,75,29	Bookshelf
Pioneer S-80	370	2x	88	4	80	23,56,28	Bookshelf
Pioneer S-200	600	2x	89	4	120	26,90,34	Bwire, floor standing
Pioneer S-400	950	2x	89	4	160	27,96,38	Bwire, floor stand, shielded
Polk S4	200	2x Pt	91	8	100	24,39,18	Stand mount, free standing
Polk M3	200	2x Pt	89	8	100	17,29,21	Multi-app, including wall brac
Polk S6	300	2x ABR	91	8	125	26,54,20	Stand mount
Polk S8	450	2x ABR	90	8	150	29,64,22	Stand mount
Polk S10	600	2x ABR	91	8	200	32,74,26	Floorstanding
Polk LS50	800	2x Pt	89	8	250	27,83,29	Floorstanding
Polk LS70	1200	2x Pt	90	8	250	31,94,37	Floorstanding, biampable
Polk LS90	1700	3x Pt	90	8	250	31,94,37	Floorstanding, biampable
Posselt Alpha I	950	Pt	89	8	60	24,44,28	
Posselt Alpha II	1200	Pt	89	8	90	23,100,27	
Posselt Alpha III	1350	Pt	89	8	100	26,102,30	
Posselt Alpha IV	1500	Pt	89	8	135	27,104,31	
Posselt Albatros	2200	Hrn	93	6	200	31,186,32	Ultra sensitive
Proac Tablet 3	479	-	87	8	100	17,28,23	Stand mount
Proac Studio 100	699	-	87	8	150	20,40,25	Stand mount
Proac Tablette 3 Sig	779	-	87	8	100	16,28,23	Stand mount
Proac Response One S	999	-	87	8	100	18,30,23	
Proac Response Two	1634	-	88	8	150	23,45,28	

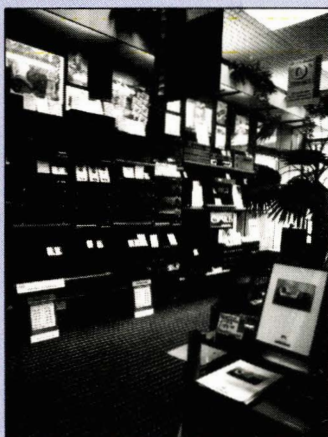


Key to loudspeakers
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bass/ESL or ribbon top.
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Model	Price	Type	Sens	Impedance	Power	Size	Special	
LOUDSPEAKERS								
Proac Studio 200	1850	-	89	8	250	23,115,28	Floor standing	
Prof Monitor Co TB1	481	2x Pt	90	8	150	20,40,25	Shielded version available	
Prof Monitor Co LB1	998	2x	89	4	300	18,53,25	Transmission line	
Prof Monitor Co AB1	1598	2x	89	6	400	26,79,43	Transmission line	
Prof Monitor Co MB1P	4681	2x	91	8	500	38,87,53	Transmission line	
Prof Monitor Co BB5P	6754	2x	91	4	600	43,104,79	Transmission line	
Quad ESL-63	2860	ELS	86	8	100	66,93,27	Panel, simulates point source	
Realistic Minimus 3.5	30	-	-	-	8	15	9,15,5	
Realistic Minimus 21	30	-	-	-	8	10	15,24,13	
Realistic M'mus 26	56	-	87	8	40	18,28,11		
Realistic Minimus Pro-7	60	2xPt	87	8	50	11,18,11	Revised design	
Realistic Minimus Pro-77	100	2xPt	86	8	55	14,22,11	Revised design	
Rega Kyte	198	2x	-	-	8	-	19,31,19	Stand/wall/shelf mount
Rega ELA	298	2x	-	-	8	-	17,72,20	Floor stand
Rega ELA Mk II	498	2x	-	-	8	-	30,80,20	Floor stand
Rega XEL	1040	2x	-	-	6	-	20,82,30	Floor stand
Rehdeko RK115	1200	Pt	104	8	-	-	34,42,28	
Rehdeko RK125	2300	Pt	102	8	-	-	34,61,28	
Rehdeko RK145	3400	Pt	102	8	-	-	39,66,29	
Rehdeko RK175	6500	Pt	106	8	-	-	50,96,37	
REL Strata	499	Sub	-	-	-	1kw	45,52,31	Active, internal amp
REL Stadium	795	Sub	-	-	-	1kw	58,52,36	Active, internal amps
REL Stentor	1495	Sub	-	-	-	1kw	59,56,37	Active, internal amp
REL Studio	2995	Sub	-	-	-	1kw	69,62,52	Active, internal amp
Revolver by Ram Beretta	100	2xPt	87	6	80	30,19,22	Bookshelf/stand mount	
Revolver by Ram Colt	149	2xPt	88	6	100	30,19,22	Bookshelf/stand mount	
Revolver by Ram Purdey	249	2xPt	88	6	120	75,19,22	Floor stand, with plinth	
Rogers LS1	199	2x	-	-	6	75	20,20,30	Stand required
Rogers LS2a/2	250	2x	86	8	100	23,36,21	Use about 30cm from wall	
Rogers LS4a/2	330	2x	88	8	-	-	Various finishes	
Rogers Studio 3	449	2x	85	8	45	19,30,16	Stand required	
Rogers ABC Subwoofer	499	1x	-	-	8	50	57,19,16	Passive subwoofer
Rogers LS3/5A	699	2xIB	-	12	50	31,19,16	Small broadcast monitor	
Rogers Studio 5	699	2x	-	-	8	100	25,25,48	Stand required
Rogers P20	750	2x Pt	88	8	150	26,42,30	Stand mount, stands available	
Rogers P22	832	2x Pt	88	8	150	26,85,30	Floor stand, sloping baffle	
Rogers Studio 7	899	2x	89	8	150	30,63,30	Stand required	
Rogers P24a	1268	3x	86	4	250	25,104,35	Internal bass, floor standing	
Rogers LS5/9	1531	2x	87	8	100	28,46,27		
Roksan Qjan 3	895	Pt	88	8	250	28,76,460	Floor standing, sprung tweeter	
Royd The Herald	198	Pt	86	8	100	31,20,18	Stand mount	
Royd The Minstrel	259	Pt	86	8	100	69,18,12	Side port., floor standing	
Royd Merlin	298	Pt	86	8	100	31,20,18	Veneered	
Royd The Sorcerer	595	Pt	86	8	120	31,20,18	Front port, near field monitor	
Royd The Abbot	665	Pt	90	8	120	81,20,30	Floor standing, free space	
Royd The Prior	978	Pt	90	8	150	96,37,26	Floor standing, free space	
Ruark Swordsman Plus II	299	2x IB	87	8	100	20,38,27	Near wall/stand mount	
Ruark Sabre II	385	2x IB	87	8	100	23,37,27	Wall/free, on stands	
Ruark Templar	479	2x IB	87	8	100	19,70,27	Wall or free, no stands reqd	
Ruark Talisman II	699	2x Pt	88	8	100	23,84,32	Free space, floor standing	
Ruark Broadsword II	849	2x IB	86	8	1			

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Arcam Delta 290 B Stock	£ 389.00
Arcam Alpha 6	£ 329.95
Arcam Delta 290P	£ 359.95
Arcam Delta 290 Inc remote	£ 479.95
Aura VA80	£ 279.95
Aura VA100 II Black	£ 349.95
Audiolab 8000C - II (Ex Dem)	£ 369.00
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Audiolab 8000M - II (Ex Dem)	£ 559.00

Audiolab 8000C - 94	£ 459.95
Audiolab 8000A - 94	£ 479.95
Audiolab 8000P - 94	£ 649.95
Audiolab 8000M - 94 (each)	£ 699.95
Audiolab 8000 PPA	£ 799.95
Cyrus PSXR	£ 299.95
Cyrus Power	£ 449.95
Cyrus III	£ 499.95
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Kenwood KA1060	£ 139.95
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Kenwood KA3020SE £ 199.95

Marantz PM44 Mkl SE £ 199 £ 149.00

Marantz PM44 Mkl SE	£ 199.95
Meridian A11 Pre	£ 624.95
Meridian 505 Pwr	£ 624.95
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Musical Fid A1 Ltd. Ed.	£ 399.95
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Musical Fid E100	£ 599.95
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Nad 310	£ 129.95
Nad 302	£ 179.95
Nad 304	£ 239.95
Pioneer A103	£ 129.95
Pioneer A203	£ 149.95
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Pioneer A400X	£ 299.95
Quad 306	£ 349.95
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Denon DF10 Ex Speakers	£ 999.95
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Aiwa ADF850	£ 229.95
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Kenwood KX3060	£ 169.95

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Pioneer CTW603RS	£ 229.95
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Sony TCK411 3-Head £ 199 £ 139.00
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Mission 751 (R/Wood add £29)	£ 299.95
Mission 752 (R/Wood add £79)	£ 499.95
Mission 753 (R/Wood add £99)	£ 699.95

Mission 760i £ 129 £ 99.00

Mission 760iSE £ 149.95

Mission 780SE £ 239.95

Mon Audio 1 Gold II (R/Wood + £20)	£ 199.95
Mon Audio 14 Gold II (R/Wood + £50)	£ 289.95
Mordant Short MS10	£ 139.95
Mordant Short MS20	£ 189.95
Nad 801	£ 99.95
Nad 804	£ 329.95
Pink Triangle Ventral	£ 899.95
Proac P.O.A.	

Quad ESL 63	£ 289.95
Quad Gradient SW63	£ 1699.95
Roksan Ojan 3	£ 895.95
Ruark Swordsman Plus II	£ 299.95
Ruark Sabre	£ 384.95
Ruark Templar	£ 479.95
Ruark Talisman II	£ 699.95
Ruark Paladin	£ 1099.95
Ruark Crusader II	£ 1499.95
Ruark Equinox	£ 1749.95
Systm 931	£ 299.95
Systm 935	£ 399.95
Systm 939	£ 699.95
Tannoy Profile 631	£ 149.95
Tannoy Profile 632	£ 199.95
Tannoy Profile 633	£ 319.95
Tannoy Profile 636	£ 419.95
Tannoy Profile 637	£ 499.95
Tannoy Profile 638	£ 599.95
TDL NFM	£ 119.95
TDL NFM2	£ 179.95

TDL RTL2 (black) Claim £30 Cable £ 299.95

TDL RTL3	£ 399.95
TDL RTL4	£ 649.95
TDL Studio 0.5	£ 499.95
TDL Studio 1	£ 699.95

TURNTABLES

Dual CS 435 inc. cart	£ 129 £ 99.00
Dual CS 503.2 inc. cart	£ 169 £ 135.00
Dual CS 505.4 inc. cart	£ 199 £ 159.00

Michell P.O.A.	
Nad 5120 inc. cart	£ 119.95
Nad 533 inc. cart	£ 199.95
Pink Triangle P.O.A.	

Project 0.5 inc. cart	£ 144.95
Project 1 inc. cart	£ 184.95
Project 6.1 ex cart	£ 379.95
Project 6.1 inc. cart	£ 434.95
Technics SL1210 II	£ 449.95

TUNERS

Arcam Alpha 5	£ 219.95
Audiolab 8000T	£ 699.95
Cyrus FM7	£ 399.95
Denon TU260L	£ 119.95
Denon TU380RDS	£ 189.95
Kenwood KT1060L	£ 119.95
Kenwood KT2060L	£ 149.95
Meridian 504	£ 624.95
Musical Fid E500	£ 499.95

Nad 402 £ 169.95

Pioneer F203 RDS	£ 129.95
Pioneer F303 RDS	£ 179.95
Pioneer F502 RDS	£ 249.95
Quad 66FM	£ 532.95

Quad 66FM (Ex Dem) £ 399.00

Rotel RT940AX £ 189.95

Rotel RT950BX £ 219.95

Sony STS311RDS £ 199 £ 159.00

Yamaha TX480L £ 139.95

CD PLAYERS

Aiwa XC300 £ 149 £ 119.00

Arcam Alpha One £ 299.95

Arcam Alpha 5+ inc Ixos 104 £ 469.95

Arcam Black Box 50	£ 449.95
Arcam Black Box 500	£ 749.95
Arcam Delta 250 Transport	£ 749.95
Arcam Delta 270	£ 799.95

Audio Alchemy DAC in the box Claim £20 CD Voucher £ 199.95

Audiolab 8000 CDM	£ 1249.95
Audiolab 8000 DAC	£ 749.95
Cyrus DAD7	£ 899.95
Denon DC D615	£ 179.95
Denon DC D825	£ 219.95
Denon DCM340 Multi	£ 299.95
Kenwood DP2060	£ 159.95
Kenwood DP3060	£ 199.95
Kenwood DPR4060 Multi	£ 199.95
Marantz CD10	£ 1199.95

Marantz CD52IIE £ 299 £ 229.00

Marantz CD10 Factory Re-packs £ 899.00

Marantz CD53 £ 199.95

Marantz CD63 £ 249.95

Marantz CD63SE £ 349.95

Meridian 563 DAC	£ 749.95
Meridian 506	£ 874.95
Meridian 500 Transport	£ 1094.95
Meridian 508	£ 1474.95
Musical Fid E600	£ 599.95
Musical Fidelity FCD	£ 1499.95
Nad 501	£ 179.95
Nad 502	£ 229.95
Nad 513 Multi	£ 269.95

Philips CD 710 (£30 CD Voucher) £ 119.95

Pink Triangle Cardinal Transport	£ 749.95
Pink Triangle Ordinal	£ 789.95
Pink Triangle Da Capo	£ 1449.95
Pioneer PD203	£ 159.95
Pioneer PDF100H Multi	£ 599.95
Pioneer PDM603 Multi	£ 249.95
Pioneer PD5503	£ 199.95

Pioneer PDS5703 £ 249.95

Pioneer PDS802	£ 349.95
Pioneer PDM703 Multi	£ 299.95
Quad 67	£ 824.95

Quad 67 CD (Ex Dem) £ 659.00

Roksan ATT/DP2 MkII Transport	£ 1294.95
Rotel RCD930AX	£ 299.95
Rotel RCD940BX	£ 249.95
Rotel RCD965BX	£ 299.95
Sony CDP715SE	£ 249.95
Sony CDPM302	£ 129.95

Teac CDP3500 £ 199 £ 149.00

Teac D700 Dac	£ 599.95
Teac P700 Transport	£ 899.95
Teac VRDST1 Transport	£ 499.95
Teac VRDS7	£ 599.95
Teac VRDS10	£ 769.95
Teac VRDS20	£ 1299.95
Technics SLPG360	£ 139.95
Technics SLPG560	£ 179.95
Technics SLPD667 Multi	£ 179.95
Technics SLPD86	

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System A

CD REPLAY FROM A QUALITY HI FI SEPERATES SYSTEM...

£349.⁰⁰

AIWA XC 300 CD PLAYER
Enjoyable, neatly styled, well equipped
WHAT HI FI? ****

MARANTZ PM44SEMK1 AMPLIFIER
Breathes life into most music
WHAT HI FI? 1993/4 AWARD WINNER ****

MISSION 760i SPEAKERS
SOUND WHAT HI FI? *****
BUILD WHAT HI FI? ****
COMPATABILITY WHAT HI FI? *****
VALUE WHAT HI FI? *****

RRP ~~£480.00~~

System B

CD REPLAY FROM A TRUE 'AUDIOPHILE' HI FI SEPERATES SYSTEM...

£499.⁰⁰

TEAC CDP3500 CD PLAYER
Expressive, confident, pacey, natural presentation
WHAT HI FI? ****

ROTEL RA960BXMKII AMPLIFIER
Detailed, aggressive presentation, good phono stage
HI FI WORLD Recommended

TDL RTL2 (BLACK) SPEAKERS
WHAT HI FI? *****
Enthralling, room-filling and rhythmic

RRP ~~£800.00~~

CASSETTE DECK

Sony TCWR635S
"Twin cassette with Dolby B Recording".

WAS £279 **£189.00**

AMPLIFIER

Rotel RA960BXMK2
"Detailed, aggressive presentation, good phono stage"

HI FI WORLD Recommended

WAS £299 **£199.00**

SPEAKERS

JPW Minim

"Fast, dry bass which never goes missing"

WHAT HI FI? *****

WAS £79 **£59.00 pair**

CASSETTE DECK

Technics RSBX501

"Crisp lively sound, lots of features".

WHAT HI FI? *****

£179.95

CASSETTE DECK

Sony TCK611S

"Best cassette player in 1993/4".

WHAT HI FI? AWARD WINNER 1993/4 *****

WAS £299 **£249.00**

CD PLAYER

Top Name CD Player!

"An absolute bargain at this price".

WAS £119 **£89.00**

SPEAKERS

Mission 760i

"Open and very exciting presentation"

WHAT HI FI? BEST BUY

WAS £129 **£99.00 pair**

CASSETTE DECK

Sony TCK411

"When used for making recordings, reproduction is faithful, 3 Head System".

WAS £199 **£139.00**

CASSETTE DECK

Aiwa ADF450

"Bargain Cassette Deck".

CLAIM £25 TAPE VOUCHER

£119.95

DAC

Audio Alchemy DAC-IN-THE-BOX

"Marvel of modern technology and sound".

WHAT HI FI? AWARD WINNER 1994/5 *****

CLAIM £20 CD VOUCHER **£199.95**

TUNER

Sony STS311 RDS

"1993/4 Best Tuner".

WHAT HI FI? AWARD WINNER 1993/4 *****

WAS £199 **£159.00**

CD PLAYER

Marantz CD63SE

"Stunning sound, exceptional value for money"

WHAT HI FI? *****

£349.95

CD PLAYER

Arcam Alpha 5+ CD

"Sound quality that will keep it in the best sellers list".

CLAIM IXOS 104 INTERCONNECT FREE

£469.95

HOME CINEMA

Yamaha

FREE CENTRE SPEAKER WITH SELECTED SYSTEMS

SAVE UP TO £149.00

SPEAKERS

TDL RTL2

(black)

"Enthralling, room-filling and rhythmic".

CLAIM £30 WORTH OF SPEAKER CABLE

£299.95 pair

AMPLIFIER

Marantz PM44SE MK1

"Powerful presentation yet clear and subtle, with well-balanced, natural character that breathes life into most music".

WHAT HI FI? AWARD WINNER 1993/4 *****

WAS £199 **£149.00**

SPEAKERS

Kef Reference 105/3
(black only)

"Clean, clear, controlled delivery with good bass depth and impact. Rich tone with impressive three dimensional sound staging".

SAVE £1000

WAS £2295 **£1295.00 pair**

CD PLAYER

Teac CDP3500

"Mixture of bitstream good manners and multi-bits healthy appetite for rock. Expressive, confident, pacey, natural constant presentation".

WHAT HI FI? ****

WAS £199 **£149.00**

EX DISPLAY HI FI BARGAINS

It's that time of year again. We're clearing out or replacing lots of demonstration and display stock at huge savings. Stocks are obviously limited, so you must be quick to get the best buys. Some products are being cleared never to be seen again, whilst others are simply demonstration stock rotation. Due to the complexity of handling so much product at so many of our branches we are asking you to phone 0732 458985 to check availability before making your journey. All products are new but on display - None are second hand - and sold with full instructions, accessories, packaging and manufacturers guarantees. If we still have the product you want in stock when you call we can arrange for it to be delivered to a convenient branch. This is a genuine, but limited offer - Act now to avoid disappointment.

	RRP	NOW
ARCAM		
Alpha 3 Amp	£ 199.00	£ 149.00
Alpha 6 Amp	£ 329.00	£ 269.00
Alpha 5 CD (Not+)	£ 449.00	£ 349.00
Delta 250	£ 749.00	£ 599.00
Delta 270	£ 799.00	£ 639.00
Delta 290	£ 479.00	£ 389.00
Delta 70.3	£ 649.00	£ 399.00
Black Box 3	£ 359.00	£ 149.00
Black Box 5	£ 399.00	£ 199.00
Black Box 50	£ 449.00	£ 359.00
AIWA		
ADF450	£ 119.00	£ 89.00
LCX10	£ 399.00	£ 299.00
LCX9	£ 349.00	£ 264.00
NSX340	£ 299.00	£ 224.00
ALBARRY		
AP 4	£ 349.00	£ 264.00

ALPHASON RACKS OLD RANGE ALL 1/2 RRP

AUDIOLAB		
8000A-91	£ 479.00	£ 379.00
8000C-91	£ 459.00	£ 369.00
8000M Each	£ 699.00	£ 559.00
8000P-91	£ 649.00	£ 519.00
AURA		
VA100 Mk 1	£ 329.00	£ 229.00
CD50	£ 399.00	£ 279.00
B&O		
BC7000	£ 800.00	£ 559.00
CD7000	£ 800.00	£ 559.00
RL1000	£ 215.00	£ 149.00
RL6000	£ 870.00	£ 609.00
Penta 3	£2375.00	£1664.00
LABLCS9000	£ 900.00	£ 629.00
Vox Cona	£ 200.00	£ 139.00
BC2500 inc Spkrs	£1700.00	£1189.00
BC9300 inc Spkrs	£1500.00	£1049.00
BG7000	£ 555.00	£ 389.00
B&W		
Centrale	£ 149.00	£ 104.00
Theatre	£ 299.00	£ 209.00
804	£1495.00	£1049.00
805	£ 894.00	£ 624.00
DM600	£ 189.00	£ 144.00
DM610	£ 249.00	£ 189.00
DM620	£ 429.00	£ 324.00
Team Solid	£ 139.00	£ 99.00
Solid Bass	£ 349.00	£ 244.00
Team Bass	£ 159.00	£ 104.00
Twin Bass	£ 229.00	£ 159.00
CASTLE		
Chester Mk1	£ 649.00	£ 399.00
CELESTION		
CEL1	£ 109.00	£ 69.00
DENON		
PMA450SE	£ 269.00	£ 214.00
PMA480	£ 219.00	£ 174.00
DRS610	£ 199.00	£ 139.00
DRS810	£ 299.00	£ 209.00
DRW760	£ 249.00	£ 199.00
DCD1290	£ 329.00	£ 229.00
D-250 Ex Spkrs	£ 929.00	£ 744.00
EXPOSURE		
EXP15MM	£ 724.00	£ 544.00
EXP17	£ 774.00	£ 579.00
EXP18	£ 749.00	£ 564.00
EXP20	£ 624.00	£ 469.00
EXP6	£ 499.00	£ 374.00
EXP4	£1799.00	£1349.00
GOODMANS (B Stock)		
GSA360	£ 109.00	£ 59.00
GCD360	£ 99.00	£ 59.00
GCD600	£ 109.00	£ 59.00
GCD650	£ 109.00	£ 69.00
GCD658	£ 169.00	£ 79.00

	RRP	NOW
GSP360	£ 54.00	£ 29.00
GSP600	£ 54.00	£ 29.00
GSP650	£ 59.00	£ 29.00
HEYBROOK		
Prima	£ 129.00	£ 89.00
JAMO		
Centre 100	£ 139.00	£ 99.00
SW150	£ 199.00	£ 139.00
JVC		
Adagio S50R	£ 499.00	£ 374.00
Adagio S60R	£ 599.00	£ 449.00
Adagio C33	£ 449.00	£ 339.00
UX-C7	£ 359.00	£ 269.00
UX-A4	£ 349.00	£ 264.00
W58CD	£ 499.00	£ 374.00
KEF		
705	£ 299.00	£ 239.00
Q60	£ 419.00	£ 199.00
101/2	£ 499.00	£ 249.00
102/2	£ 749.00	£ 349.00
103/4	£1199.00	£ 699.00
107/2	£3695.00	£1899.00
104/2	£1595.00	£ 799.00
105/3	£2295.00	£1199.00
KENWOOD		
KA1060	£ 139.00	£ 124.00
KA2060	£ 169.00	£ 154.00
KX3060	£ 169.00	£ 154.00
KXW4060	£ 179.00	£ 164.00
DP2060	£ 159.00	£ 144.00
DP3060	£ 199.00	£ 179.00
DPR4060	£ 199.00	£ 179.00
KT1060L	£ 119.00	£ 109.00
KT2060L	£ 149.00	£ 134.00
MARANTZ		
PM32	£ 139.00	£ 99.00
PM53	£ 249.00	£ 174.00
PM54SE	£ 299.00	£ 209.00
CD10	£1199.00	£ 849.00
SYS1010	£ 899.00	£ 629.00
SYS1020	£ 999.00	£ 699.00
PM44SE Mk1	£ 199.00	£ 124.00
CD52IIE	£ 299.00	£ 189.00
DD 82	£ 399.00	£ 179.00
SR 53	£ 269.00	£ 179.00
ST40L	£ 139.00	£ 99.00
MISSION		
7611	£ 179.00	£ 109.00
MONITOR AUDIO		
Monitor 7	£ 299.00	£ 209.00
Mon 201	£ 299.00	£ 209.00
Mon 202	£ 449.00	£ 314.00
SW200	£ 299.00	£ 209.00
MORDAUNT SHORT		
CS-1	£ 114.00	£ 79.00
Decoder	£ 299.00	£ 209.00
SW-1	£ 149.00	£ 104.00
MS10	£ 139.00	£ 94.00
MUSICAL FIDELITY		
A1 MkIII	£ 329.00	£ 199.00
CDTC	£ 549.00	£ 329.00
The Preamp	£ 219.00	£ 134.00
J1 MkII	£ 299.00	£ 179.00
NAD		
NAD306	£ 349.00	£ 244.00
NAD802	£ 229.00	£ 159.00
NAKAMICHI		
DR1	£ 849.00	£ 679.00
DR2	£ 599.00	£ 479.00
DR3	£ 399.00	£ 319.00

PARTINGTON SPEAKER STANDS & RACKS 1/2 RRP

PHILIPS		
DCC300	£ 179.00	£ 124.00
DCC600	£ 199.00	£ 139.00
DCC900	£ 199.00	£ 139.00

	RRP	NOW
PIONEER		
A203	£ 149.00	£ 129.00
A300X	£ 229.00	£ 194.00
A400X	£ 299.00	£ 254.00
CTS430S	£ 199.00	£ 169.00
CTS630S	£ 299.00	£ 254.00
A400	£ 279.00	£ 239.00
CTW503R	£ 179.00	£ 154.00
F203	£ 129.00	£ 109.00
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Project 6 inc cart	£ 435.00	£ 349.00
QLN		
Signature	£ 699.00	£ 299.00
REGA		
RB250	£ 94.00	£ 49.00
RB300	£ 146.00	£ 99.00
ROGERS		
LS2A/2	£ 249.00	£ 174.00
LS4A/2	£ 329.00	£ 229.00
ROKSAN		
ATT-DP2.P	£1495.00	£1049.00
ATT-DP2	£1295.00	£ 909.00
ROK-DA1	£ 494.00	£ 344.00
OJAN3	£ 899.00	£ 629.00
Tabriz	£ 230.00	£ 164.00
ROTEL		
RA930AX Mk1	£ 175.00	£ 114.00
RA935BX Mk1	£ 225.00	£ 124.00
RA940BX	£ 249.00	£ 139.00
RC945AX	£ 229.00	£ 129.00
RB970BX Mk1	£ 225.00	£ 169.00
RB980BX Mk1	£ 450.00	£ 299.00
RC970BX Mk1	£ 149.00	£ 119.00
RT930AX	£ 175.00	£ 99.00
RUARK ACOUSTICS		
Rhapsody	£ 799.00	£ 399.00

SENNHEISER HEADPHONES HD55, HD250II, HD480CLII, HD520II, HD530II, HD540II HD560II - 1/2 RRP

SONY		
TCK511S	£ 249.00	£ 149.00
CDP711	£ 249.00	£ 139.00
TCK411	£ 199.00	£ 124.00
STS311	£ 199.00	£ 144.00
TCK611S	£ 299.00	£ 224.00

STAX HEADPHONES 20% OFF RRP ON ALL DISPLAY MODELS

TDL		
RTL-1	£ 199.00	£ 149.00
TEAC		
V600	£ 149.00	£ 89.00
CDP4500	£ 279.00	£ 139.00
P700	£ 899.00	£ 629.00
TECHNICS		
SLPG440AK	£ 169.00	£ 119.00
SLPJ28AK	£ 149.00	£ 129.00
SLBD22ZK	£ 159.00	£ 119.00
THORENS		
TD280IV inc cart	£ 199.00	£ 159.00
WHARFEDALE		
Modus Cube	£ 69.00	£ 49.00
Modus Micro	£ 99.00	£ 69.00
Modus Mini	£ 129.00	£ 89.00
Modus Sub	£ 139.00	£ 99.00
YAMAHA		
AX380	£ 199.00	£ 159.00
AX570	£ 289.00	£ 234.00
KXW482	£ 249.00	£ 199.00
CDX645	£ 279.00	£ 224.00
CDX480	£ 199.00	£ 159.00
CDX870	£ 329.00	£ 264.00
NS10M	£ 259.00	£ 209.00
TX480L	£ 139.00	£ 114.00

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SEVENOAKS HIFI



Key to loudspeakers
 Price - typical retail, to nearest pound.
 Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic bass/ESL or ribbon top.

Sens - output at given power input level.
Impedance - in ohms. Power - maximum recommended amplifier output.
Size - width x height x depth in cm.
Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.



Key to receivers
 Price - typical retail, to nearest pound.
 A/V - minimum requirements - Dolby Surround/Pro-Logic circuitry.
 Power - watts (channel, both channels driven RMS 8ohms, 20Hz - 20kHz).
 Wavebands - FM, L - long wave, M - medium wave.
 Presets - number thereof.
 In/outputs - MM/MC - moving coil/moving magnet, L - line, T - tape, V - audio input or tape circuit with

video signal routing.
Remote - control.
Size - width x height x depth in cm.
Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Model	Price	Type	Sens	Impedance	Power	Size	Special	
LOUDSPEAKERS								
Spendor SP2/3	1100	2x	88	8	80	28,55,33	On stands, free space	
Spendor SP1/2	1430	3x	89	8	90	30,63,30	Stand mount, free space	
Spendor SP7/1	2000	2x	89	8	100	85,30,35	Floor standing	
Spendor SP100	2230	3x	90	8	100	37,70,43	Classic monitor, free space	
Spendor SP9/1	3300	3x	90	8	125	106,37,44	Floor standing monitor	
Spica TC50	649	IB	86	4	50	33,39,29	Free space, on stands	
Spica TC50SE	849	IB	86	4	50	33,39,29	Free space, on stands	
Spica TC50SEX	949	IB	86	4	50	33,39,29	Free space, on stands	
Spica Angelus	1295	IB	87	8	200	53,117,26	Free space, floor standing	
Tannoy 631	149	2xPt	87	6	70	19,34,15	Advanced 'silent' enc	
Tannoy 632	189	2xPt	88	8	90	51,43,27		
Tannoy 633	319	3xIB	89	8	100	29,75,28		
Tannoy Subsat3	399	3xPt	88	8	120	11,16,9	Subsat system with ICT tech	
Tannoy 636	419	3xIB	90	6	120	29,75,28		
Tannoy 637	499	3xIB	91	6	150	33,86,32		
Tannoy 625	595	Active	-	-	90	58,49,45	Servo, current drive subwoofer	
Tannoy 638	599	3xPt	91	6	175	33,96,32		
Tannoy D100	649	2xPt	89	8	120	25,36,22	6.5 inch Dual Concentric	
Tannoy D500	1470	3xPt	91	6	175	31,93,34	8 inch Dual Concentric	
Tannoy Sterling TW	1750	2x	93	8	150	48,70,31		
Tannoy D700	2100	3xPt	93	6	200	37,99,36	10 inch Dual Concentric	
Tannoy Edinburgh TW	2700	2x	95	8	180	66,102,42		
Tannoy GRFM TW	3500	2x	95	8	200	80,100,48		
Tannoy Canterbury 12^	5500	2x	94	8	200	58,90,43		
Tannoy Westminster TW	6000	2x	99	8	200	-		
Tannoy Canterbury 15^	7000	2x	96	8	250	68,110,48		
Tannoy Westminster Royal	13500	2x	99	8	200	98,139,56		
TDL Near Field Monitor	120	2x	88	8	70	18,30,17		
TDL RTL2	300	-	87	8	80	20,73,22	Reflex transmission line	
TDL RTL3	400	-	90	8	120	20,90,37	Reflex transmission line	
TDL Studio 0.5	499	-	85	8	75	20,62,30	Transmission line	
TDL Studio 1	699	2x	86	8	120	23,77,33	Transmission line bass	
TDL Studio 0.75m	749	2xTLS	85	8	100	29,67,31	Metal dome tweeter	
TDL Studio 1m	899	2TLS	86	8	120	23,77,34	Metal drivers	
TDL Reference Monitor	1999	-	87	8	350	30,119,47	Transmission line	
Teac LSX8	80	-	-	-	80	11,18,11		
Teac SW1	120	Sub	-	-	100	17,44,30	Coaxial, shielded	
Teac S300	150	2x Pt	-	-	100	17,24,17		
Technics SB-CS55	80	2x Pt	-	-	60	25,43,25	Shelf/stand, shielded	
Technics SB-CS75	100	3x Pt	-	-	60	27,49,25	Composite mica cone mid	
Technics SB-CS95	150	3x Pt	-	-	100	29,54,25	Composite mica cone mid	
Technics SB-EX2	180	2x Pt	-	-	100	24,48,29	Composite mica cone mid	
Technics SB-EX3	250	3x Pt	-	-	125	24,60,29	Mica diaphragms, separate LF b	
Technics SB-EX7	450	3x Pt	-	-	180	29,85,32	Mica diaphragms, separate LF b	
Technics SB-MX100D	2000	2x Pt	-	-	100	23,47,34	Floor standing, separate LF ba	
Technics SB-MX200D	4000	3x Pt	88	4	125	35,91,43	Mica bass/tweeter	
Totem Model One	995	Pt	87	4	120	17,31,23		
Triangle Titus E	265	-	90	8	75	20,25,32		
Triangle Comete E	399	-	91	8	100	22,28,40	Suits low powered valve amps	
Triangle Scapula E	625	-	91	8	150	84,22,22	Suits for low power valve amp	
Triangle Norma	775	-	93	8	150	26,84,25	Suits low power valve amp	
Triangle Alcante	999	-	92	4	200	22,100,22	Suits low power valve amp	
Triangle Icare	1350	-	92	8	250	99,22,28		
Triangle Calisto	1850	-	90	8	300	104,22,22		
Triangle Altair	2450	-	92	8	300	35,120,30	Proprietary tweeter	
Triangle Octant	3550	-	94	8	300	42,150,19	Ultra high sensitivity	
UKD Opera 1	450	Pt	88	8	75	20,33,25	Solid walnut, stand mount	
UKD Opera 2	550	Pt	88	8	100	23,35,34	Solid walnut, stand mount	
UKD Operetta	595	Pt	88	8	70	22,30,26	Solid mahogany, stand mount	
UKD Callas Mahogany	750	Pt	88	8	120	34,22,32	Solid mahogany, stand mount	
UKD Super Pavarotti	875	Pt	88	8	150	23,55,23	Solid mahogany, stand mount	
UKD Callas Walnut	895	Pt	87	6	150	34,22,32	Solid walnut, Focal drivers	
UKD Diva	1300	Pt	87	8	150	24,39,40	Solid walnut, stand mount	
UKD Caruso	1850	Pt	88	8	200	22,97,28	Solid walnut, floor standing	
Vandersteen 2Ce	1395	4x	88	7	160	41,101,27	Free standing, phase aligned	
Visonic David 5001	132	-	-	-	4-8	50	10,17,10	
Visonic Sub 4	154	-	-	-	4-8	100	36,49,31	
Visonic David 6001	163	-	-	-	4-8	60	13,20,12	
Visonic David 8001	228	-	-	-	4-8	80	16,25,17	
Wharfedale Centre Cube	49	Pt	87	8	75	14,13,12	Shielded centre speaker	
Wharfedale Modus Cube	59	Pt	87	8	75	14,17,12	Shielded	
Wharfedale CRS3	89	2x Pt	89	8	100	22,38,17	Stand/bookshelf mount	
Wharfedale Diamond 6R	109	Pt	89	8	100	16,27,22	Stand/bookshelf mount	
Wharfedale Modus Micro	109	2x Pt	86	8	75	14,23,12	Shielded	
Wharfedale Modus Centre	119	Pt	87	8	75	46,14,12	Shielded centre speaker	
Wharfedale Diamond V	129	Pt	87	8	100	18,26,20	Stand mount, near wall	
Wharfedale CRS5	129	2x Pt	89	8	140	26,48,20		
Wharfedale Modus Mini	139	ABR	86	8	75	14,39,12	Shielded two-way	
Wharfedale Modus One	159	2xPt	89	8	100	22,41,29	Stand/bookshelf mount	
Wharfedale Modus Sub-bass	179	Pt	88	8	200	57,23,38	Two channel double tuned sub-w	
Wharfedale Modus Three	199	2xPt	90	8	100	22,57,29	Stand/bookshelf mount	
Wharfedale CRS7	199	Pt	91	8	150	26,60,21		
Wharfedale Modus Five	259	3xPt	90	8	125	22,65,29	Stand/bookshelf mount	
Wharfedale CRS9	299	Pt	93	8	160	31,80,28	Floor standing, three way	
Wharfedale Modus Seven	339	3xPt	90	8	125	22,81,20	Floor standing	

Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory.

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Wharfedale Modus One-T	tree439	3xPt	90	8	150	22,109,29	Floor standing
Wilson X1 Grand Slam	0	3x	94	-	-	-	Three-way reference
Wilson WAP Puppy 5	5500	Sub	91	-	-	-	Passive sub for WATTs
Wilson WAP Puppy II	5600	Sub	91	-	-	25,53,35	Passive subwoofer for WATT
Wilson WATT III	7700	2x	91	-	-	27,31,36	
Wilson WHOW II	12500	Sub	98	-	-	88/65,36	Active subwoofer for WATT
Yamaha NS-C80	99	-	90	6	80	14,45,17	
Yamaha NS-E80	120	-	90	6	50	27,20,7	
Yamaha NS-C110	149	-	90	6	120	15,47,18	
Yamaha NS10M	250	-	90	8	100	21,38,20	
ZYP A1	199	IB	88	8	50	14,22,12	Wall mount
ZYP A1T	219	IB	88	8	50	14,22,12	Magnetically shielded
ZYP A2S	299	2xIB	88	8	50	22,14,12	Studio nearfield monitor

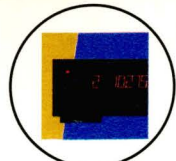
Model	Price	AV	Power	Wavebands	Presets	In/outputs	Remote	Size	Special
RECEIVERS									
Denon DRA-365RD	250	N	45	FM,M	24	MM,3L,1T	Y	44,12,32	System remote
Denon DRA-545RD	320	N	60	FM,M	24	MM,3L,2T	Y	44,12,32	RDS
Denon AVR-1000	520	Y	70	FM,M	16	MM,2L,2T	Y	44,15,33	Auto input balance
Dual CR9000RS	200	N	55	FM,M,L	30	MM,4L,2T	Y	44,14,30	System component
Grundig R210	150	N	50	FM,M,L	59	MM,5L	Y	36,12,30	Gain switch, remote
Grundig R2	250	N	50	FM,M,L	59	MM,5L	Y	44,14,30	RDS, Radio text, remote
Harman-Kardon HK3300	379	N	20	FM,M	-	MM,3L,2T	Y	45,13,35	
Harman-Kardon HK3400	499	N	35	FM,M	-	MM3L,2T	Y	45,13,35	
Harman-Kardon HK3500	699	N	50	FM,M	-	MM,4L,2T	Y	45,13,35	
Harman-Kardon HK3600	799	N	75	FM,M	-	MM,4L,2T	Y	45,13,35	
Harman-Kardon AVR-30	999	Y	50	FM,M	16	MM,3L,3T,6V	Y	45,13,35	Dolby Pro Logic
JVC RX-212XBK	200	N	50	FM,M,L	40	MM,3L,1T	Y	44,13,34	4ch surround
JVC RX-308BK	230	N	70	FM,M,L	40	MM,3L,1T	Y	44,13,34	4 channel surround
JVC RX-508VBK	350	Y	50	FM,M,L	40	MM,1L,3T	Y	44,13,34	5ch Dolby Pro Logic
JVC RX-808VBK	570	Y	70	FM,M,L	40	MM,1L,3T	Y	44,16,40	5ch Dolby Pro Logic
Kenwood KR-A4060	230	N	80	FM,M	20	MM,3L,2T	Y	44,13,33	RDS
Kenwood KR-V6060	350	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Kenwood KR-V7050	400	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Marantz SR-63	330	N	80	FM,M,L	30	MM,3L,1T	Y	43,14,34	
Marantz SR-73	599	Y	75	FM,M	30	MM,3L,3T	Y	43,15,38	Dolby Pro Logic
Marantz SR-82	899	Y	75	FM,M	30	MM,3L,2T	Y	43,17,43	Dolby Pro Logic, multi-room
NAD 701	259	N	25	FM,M	24	MM,2L,1T	Y	-	
NAD 705	329	N	40	FM,M	39	MM,2L,2T	Y	-	
Philips FR940	450	Y	100	FM,M,L	30	MM,4L,4T	Y	44,14,30	Dolby Pro Logic
Pioneer SX-203RDS	200	N	35	FM,M	30	MM,2L,2T	Y	42,14,29	RDS tuner
Pioneer SX-303RDS	250	N	50	FM,M	30	MM,2L,2T	Y	42,14,29	RDS tuner
Pioneer VSX-452	400	Y	50	FM,M	30	MM,2L,2T,2V	Y	42,14,35	Dolby Pro-Logic
Sansui RZ790	250	N	30	FM,M	30	MM,2L,2T	Y	-	
Sansui RZ-3500 II	370	N	30	FM,M	30	MM,2L,2T	Y	-	
Sherwood RX1010	120	N	30	FM,M	-	MM,2L,1T	N	-	
Sherwood RV5030R	330	Y	80	FM,M,L	-	MM,4L,4T	Y	-	Dolby Pro Logic
Sherwood RV6030R	400	Y	100	FM,M,L	-	MM,4L,4T	Y	-	



Key to systems
Price - typical retail, to nearest pound.
Sources - CD - compact disc, R - radio tuner, Tu - turntable, T - cassette tape.
V - video signal routing (composite and/or S-Video).
Power - output power in watts, per channel, RMS.

Size - main unit dimensions - width x height x depth in cm.

Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.



Key to tuners
Price - typical retail, to nearest pound.
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.
Presets - total number of presets on all bands.

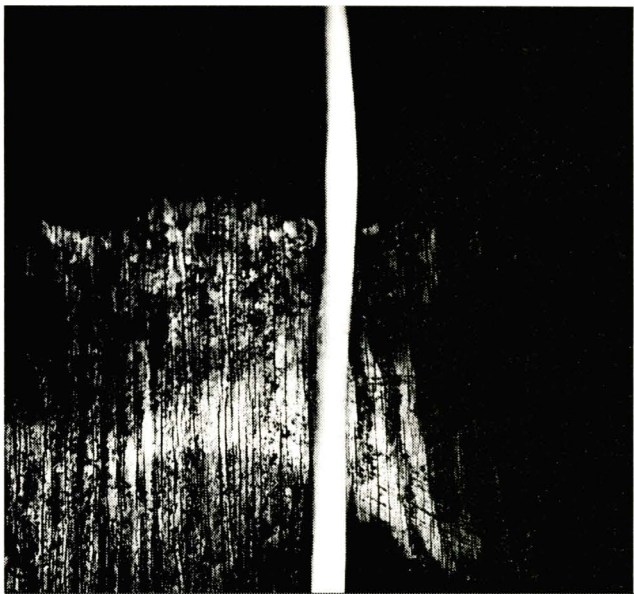
RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.
Size - width x height x depth in cm.

Products highlighted in red have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Model	Price	Source	Power	Size	Special
SYSTEMS					
Aiwa Z-D9100M	900	CD,R,Tu,2T	75	36,63,35	Midi, Pro Logic inc speakers
Akai MX92	279	CD,R,2T	25	26,38,24	
Akai MX92/T	329	CD,R,P,2T	25	27,46,31	As MX92, with mini turntable
Akai MX115	399	CD,R,2T	35	27,39,26	Graphic equaliser
Akai RX590	449	CD,R,2T,P	38	27,31,33	3x CD player, Dolby B
Akai MX115T	449	CD,R,P,2T	35	27,48,31	As MX115, with mini turntable
Akai RX590T	499	CD,R,2T,P	38	27,40,33	As RX590, with mini turntable
Akai RX690	549	CD,R,2T	50	27,40,33	3x CD player, Dolby B&C
Akai RX690T	599	CD,R,2T,P	50	27,49,33	As RX690 with mini turntable
Akai RX890	799	CD,R,2T	60	27,42,33	Virtual Room Simulator, RDS
Akai MX950	799	CD,R,2T	65	27,42,34	Triple CD, separates
Akai RX890T	849	CD,R,2T,P	60	27,51,33	As RX690, with mini turntable
Akai RX890 Compo	999	CD,R,2T,P	60	64,78,35	RX890 with stand & AP A950
Akai MX950 Compo	999	CD,R,P,2T	65	64,78,36	As MX950, with speaker stands
Amstrad MC500	100	CD,R,T	3	16,22,22	FM,MW 20 presets, bass boost
Amstrad Micro 1000	150	CD,R,T	5	15,20,26	15 presets, FM, MW, LW
Amstrad Micro 1500	170	CD,R,T	5	15,20,26	20 presets, FM,MW,LW
Amstrad CD3-500	200	CD,R,2T	5	28,34,30	Three disc CD player, FM, MW
Amstrad Micro 2000	230	CD,R,T	5	17,28,23	20 presets, FM, MW, LW
Amstrad Mini 3000	250	CD,R,2T	8	26,32,49	RDS tuner, mic mixing
Arcam Alpha 5	1200	CD,R	40	43,23,30	Based on Arcam separates
Arcam Alpha 6	1300	CD,R	50	43,23,30	Including Alpha 6 R/C amp
Arcam Delta	2810	CD,R,T	75	43,37,34	Fully remote controllable
B&O Beosystem 7000	245	CD,R,Tu,T	100	42,8,33	Components, speakers extra
B&O BeoSound Century	995	CD,R,T	-	75,37,17	Wall mounted active speakers
B&O Beocenter Overture	1100	CD,R,T	-	32,36,16	Audiomaster, replaces 2500
B&O Beocenter 9300	1500	CD,R,T	80	76,11,34	
B&O Beosystem 2300	2150	CD,R	-	83,36,16	As 2500, without cassette
Denon D-65/S	640	CD,R,2T	30	27 wide	Includes optional UK speakers
Denon D-90/S	740	CD,R,Tu,T	30	27 wide	RDS, inc optional UK speakers
Denon D-110/S	870	CD,R,Tu,2T	40	27 wide	RDS, inc optional UK speakers
Denon D-250/S	1000	CD,R,Tu,2T	50	27 wide	RDS, inc optional UK speakers
Denon D-F10/S	1150	CD,R,Tu,1T	50	-	All components sold separately
Dual MS2600	499	CD,R,2T	30	27,39,30	Karaoke support
Goodmans System 700	600	CD,R,2T	50	-	
Grundig MC10	300	CD,R,T	25	18,36,29	'Super Mini', Dolby NR
Grundig M10	330	CD,R,2T	22	27,37,34	Five band graphic & full remot
Grundig M20	430	CD,R,2T	35	25,37,30	Spectrum analyser
Grundig Fine Arts S1	750	CD,R,2T	50	44,45,30	
Grundig Fine Arts S3	770	CD,R,2T	50	44,37,30	Separates system
Grundig Fine Arts S2	890	CD,R,2T	80	44,45,30	Separates system
Grundig Fine Arts S4	1130	CD,R,2T	120	44,45,30	Separates system
Grundig Fine Arts S5	1300	CD,R,2T	120	44,41,30	Separates system
Hitachi AX10	329	CD,R,2T	20	23,29,28	Inc graphic equaliser
Hitachi AX12	350	CD,R,2T	20	23,34,32	Graphic equaliser
Hitachi AX10	379	CD,R,2T	20	23,29,28	6-disc, graphic equaliser
JVC Adagio S20	370	R,CD,2T	30	25,27,35	Live surround
JVC Midi-W48CD	430	R,CD,2T	30	36,50,34	Live Surround
JVC Adagio S30	430	R,CD,2T	32	25,27,35	Live surround, Karaoke
JVC Adagio C33	450	R,CD,2T,V	30	25,33,34	Live surround, 7CD disc system
JVC Midi-W58CD	500	R,CD,2T	50	36,48,25	Bass compensator
JVC Adagio S50R	500	R,CD,2T	40	25,36,35	Live surround, RDS
JVC Adagio C55	600	R,CD,2T,V	36	24,36,34	Advanced 7CD disc system
JVC Adagio S60R	600	R,CD,2T	45	28,36,35	Panoramic surround, RDS
JVC Midi-W78CD	750	R,CD,2T	60	36,57,29	Two channel surround
JVC Adagio G7	800	R,CD,2T,V	50	28,43,28	Panoramic surround
JVC Adagio G9	1000	R,CD,2T,V	55	28,43,28	Panoramic surround
Kenwood UD-302	400	CD,R,2T	33	27,36,31	3-disc carousel
Kenwood UD-502	500	CD,R,T,2T	55	27,41,31	Presence modes
Kenwood M-28MG	600	CD,R,T,2T	30	36,56,38	Five disc CD carousel
Kenwood UD-552	650	CD,R,2T	32	27,41,31	7-CD Bank system
Kenwood M-58M	850	CD,R,Tu,2T	60	36,62,38	Dolby Pro Logic
Kenwood HD-600	900	CD,R,Tu,T	40	27,40,35	'Audiophile' mini
Kenwood UD-952	1000	CD,R,Tu,2T	70	27,41,31	Dolby Pro Logic
Kenwood HD-1000	1000	CD,R,T	40	27,40,35	MD & equaliser options
Kenwood M-97G	1250	CD,R,V,Tu,2T	85	36,64,38	Dolby Pro Logic
Kenwood M-97MG	1300	CD,R,V,Tu,2T	85	36,64,38	Multi-CD
Marantz 1010	900	CD,R,2T	45	42,77,31	System Link Operation
Marantz 1020	1000	CD,R,2T	45	42,77,31	Motorised Front Panel
Nakamichi S'space 7	1495	CD,R	40	-	Multi-CD, aux & tape input
Onkyo L-909	1200	MM,3L,2T	70	-	Component system, 4ohm rated
Panasonic SC-DH30	250	CD,R,2T	5	-	
Panasonic SC-CH11	300	CD,R,2T	20	-	
Panasonic SC-CH33Z	370	CD,R,2T	30	-	
Panasonic SC-CH150	430	CD,R,T	20	18,25,28	51cm wide, including speakers
Philips FW21	300	CD,R,2T	12	26,30,22	
Philips AS44CD	329	CD,R,2T	20	36,38,29	
Philips AS540CD	379	CD,R,2T	40	36,398,29	
Philips FW41	400	CD,R,2T	30	26,30,25	
Philips AS640CD	429	CD,R,2T	30	36,38,29	Five disc CD
Philips FW91	499	CD,R,DCC	60	26,35,26	DCC mini
Philips FS380	499	CD,R,DCC	100	44,50,30	DCC midi
Philips FW370	900	CD,R,DCC	75	36,50,35	DCC midi
Pioneer N-25	299	CD,R,2T	20	-	Double cassette, three-disc CD
Pioneer N-50W	349	CD,R,2T	50	-	One touch Karaoke, smart timer
Pioneer J-200	399	CD,R,2T,Tu	50	-	Mic mixing, five band equalise
Pioneer N-70W	399	CD,R,2T	70	-	Double auto-reverse cassette,
Pioneer N-70W/M	449	CD,R,2T	70	-	Multi-play version of N-70W

Model	Price	Source	Power	Size	Special
SYSTEMS					
Pioneer N-100W	499	CD,R,2T	100	-	Double auto-reverse cassette,
Pioneer J-300	549	CD,R,2T,Tu	49	-	Single play CD with Smart tune
Pioneer N-100W/M	549	CD,R,2T	100	-	Multi-play version of N-100W
Pioneer J-400M	649	CD,R,2T,Tu	50	-	Six-disc multipley, Dolby Surr
Pioneer Impresso-3	749	CD,R,T	35	-	Separate components, CD with S
Pioneer J-500	779	CD,R,2T,Tu	65	-	Dolby Surround, seven band equ
Pioneer J-500M	829	CD,R,2T,Tu	65	-	Six-disc multipley version of
Pioneer J-V600	879	CD,R,2T,Tu	65	-	Dolby Pro Logic A/V system, Mo
Pioneer Impresso-7	899	CD,R,T	45	-	As Impresso 3, with RDS tuner
Pioneer J-700	999	CD,R,2T,Tu	115	-	CD with Stable Platter mechani
Pioneer J-V600LD	1199	CD,R,2T,Tu	65	-	Includes PAL/NTSC LaserDisc pl
Samsung SCM6550	230	CD,R,Tu,2T	5	35,33,29	Midi, remote control
Samsung MAX335	230	CD,R,2T	10	23,30,30	Mini, remote control
Samsung SCM8100	300	CD,R,Tu,2T	20	36,37,26	Midi, remote control
Samsung MAX370	300	CD,R,2T	20	45,32,34	Mini, remote control
Samsung SCM8300	329	CD,R,Tu,2T	20	36,37,30	Midi, equaliser, 5 CD carousel
Samsung SCM9100	430	CD,R,Tu,2T	30	36,47,29	Midi, remote control
Sansui MS6901	420	CD,R,2T	50	18,26,34	
Sanyo SYS 220	300	CD,R,2T	15	36,36,37	
Sanyo MS1	300	CD,R,T	25	22,21,22	
Sanyo DC D10	300	CD,R,2T	15	27,36,32	
Sanyo DC-D15	350	CD,R,2T	15	27,36,32	10 disc CD player
Sanyo DC-D40	400	CD,R,2T	30	27,36,32	10 disc CD player
Sanyo SYS915	430	CD,R,2T	30	36,43,36	Four-disc CD player
Sharp Mini C2400	230	CD,R,2T	10	61,32,31	Remote 3 disc CD changer
Sharp System-S360E Mk 2	230	CD,R,2T	10	27,32,33	Remote control
Sharp Midi CDR160E	270	CD,R,2T	10	76,40,38	X-bass boost feature
Sharp System-S370E Mk 2	270	CD,R,2T	25	27,32,33	Five band equaliser
Sharp System CD170E	280	CD,R,Tu,2T	10	36,40,36	Remote control, auto-reverse
Sharp Mini S3460	300	CD,R,2T	30	63,32,30	3 mode programmed equaliser
Sharp Midi CDR260	300	CD,R,2T	25	76,40,38	3 mode programmed equaliser
Sharp System-Q8E	330	CD,R,T	12	15,19,26	Ultra compact
Sharp Mini C4450	350	CD,R,2T	20	63,32,30	3 disc CD changer
Sharp Micro XL12E	399	CD,R,1T	50	48,23,31	
Sharp Mini S6470	399	CD,R,2T	100	63,32,30	
Sony MHC 450	300	CD,T,Tu,2T	20	22,29,27	Remote, double cass deck
Sony MHC 590	330	CD,T,Tu,2T	-	-	Auto reverse
Sony Compact 190	330	CD,R,Tu,2T	9	35,48,34	
Sony MHC 650	380	CD,T,Tu,3T	35	22,28,26	Full remote
Sony Compact 195	380	CD,R,Tu,2T	9	35,49,41	
Sony Compact 290	400	CD,T,Tu,2T	30	35,48,35	
Sony Compact 295	450	CD,R,Tu,2T	30	35,49,41	Full remote
Sony MHC C50CD	500	CD,T,Tu,3T	30	22,33,32	Five-disc CD
Sony MHC 2900	500	CD,T,Tu,3T	40	22,28,26	Electronic EQ
Sony Compact 490	500	CD,R,Tu,2T	40	35,59,36	Five-disc CD
Sony MHC C70CD	600	CD,T,Tu,3T	40	22,39,31	Five-disc CD
Sony Compact Plus 590	600	CD,R,Tu,2T	60	43,48,39	Five-disc CD, electronic EQ
Sony Compact Plus 695A	800	CD,T,Tu,2T	60	-	Full size separates, Dolby P-L
Sony MHC4900	800	CD,T,Tu,3T	60	22,41,28	
Sony MHC 5900AV	1000	CD,T,Tu,3T	60	22,41,28	UK sound, Dolby Pro Logic
Sony Compact Plus 795A	1000	CD,R,Tu,2T	60	43,48,39	Dolby Pro Logic, Dolby S
Sony Compact Plus 995A	1500	CD,R,Tu,2T	60	43,47,42	Dolby Pro Logic, LaserDisc
Technics SC-CH404	500	CD,R,Tu,2T	35	27,42,34	Mini, including speakers
Technics SC-CH505	600	CD,R,2T	50	27,42,34	Mini Karaoke, including speake
Technics SC-CH575	650	CD,R,2T	50	27,42,34	Mini, multi-changer
Technics CD-X120	700	CD,R,2T	40	36,41,32	Midi, including speakers
Technics SC-CH750	800	CD,R,2T	50	27,42,34	Mini, DSP, including speakers
Technics CD-X320	800	CD,R,Tu,2T	50	36,41,32	Midi, including speakers
Technics CD-X520	900	CD,R,Tu,2T	60	36,41,32	Midi, including speakers, basi
Technics SC-CH9090	1000	DCC,CD,R	60	27,42,34	DCC equipped mini system
Technics SC-CH950	1000	CD,R,2T	60	27,42,34	Pro Logic, soundfield speakers
Yamaha CC70	600	CD,R,2T	50	28,33,34	YST active bass

Model	Price	Bands	Presets	RDS	Size	Special
TUNERS						
Aiwa XT-003	120	FM,M,L	30	N	-	
Aiwa XT-950	150	FM,M	24	N	-	
Arcam Alpha 5	220	FM	16	N	43,8,27	Signal strength meter
Arcam Delta 280	350	FM	20	N	43,7,28	Remote control, IF switching
Audiolab 8000T	750	FM,M,L	39	N	45,8,36	Switchable IF, muting, mono
Aura TU80	350	FM,MW	30	N	43,6,27	Chrome finish + £50
AWI S2000MT	599	FM	16	N	31,25,9	RVC via system handset
Day Sequerra FM Ref	5457	FM	-	-	-	
Day-Seq S B'dcast Mon	14640	FM	-	-	-	
Denon TU-260L	120	FM,M,L	20	N	44,8,24	Low impedance output
Denon TU-380RD						



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Face it...you probably already suspect that your cables aren't doing justice to your hi-fi system.

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What Hi-Fi? magazine's Trisha Mitchell-Vargas took up the challenge to see how much she could improve her system - without changing any of the components. She concluded: "It's like listening to different equipment. The improvement is enormous; the sound is more cohesive, more worthwhile." (What Hi-Fi?, October 1993.)


To make sure you're getting the best from your system, all you have to do is pop into your local participating dealer and borrow an AudioQuest Home Demonstration Kit for a few days. (As you'd expect, the dealer may need you to provide some form of security.) The Kit contains full instructions for a home audition. Then, sit back and listen to your favourite music using different combinations of the AudioQuest cables, to see which gets the most noticeable improvement in sound quality from your system. We believe you'll be so impressed that you'll rush straight back to your dealer and buy them!

Of course, you may find that your existing cables are perfectly adequate. In which case, simply return the Demonstration Kit to your dealer - there's no further obligation. At least then you'll be sure that the sound you're getting from your system is everything it could be.

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Key to tuners
Price - typical retail, to nearest pound.
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.
Presets - total number of presets on all bands.

RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.
Size - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to turntables.
Price - typical retail, to nearest pound.
Speeds - 33, 45 and/or 78 revolutions per minute.
Type - A - Auto, that is, automatic play initiation, and arm return at end of side.
S - Semi, arm lift or arm return at end of side. M - Manual.

Size - width x height x depth in cm.
Special - Cartridge and/or arm included etc.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Bands	Presets	RDS	Size	Special
TUNERS						
Grundig T4	210	FM,M	59	Y	44,9,30	RDS (PS, CT, RT, PT)
Harman-Kardon TU92000	219	FM,M	70	-	45,8,38	
Harman-Kardon TU94000	299	FM,M	24	-	45,8,33	
Harman-Kardon TU96000	499	FM,M	24	-	45,8,33	
JVC FX362BX	130	FM,M,L	40	N	44,8,30	
JVC FX-572R	200	FM,M,L	40	Y	44,8,30	
JVC FX1010TN	300	FM,M,L	40	N	44,10,30	
Kenwood KT-1060L	120	FM,M,L	30	N	44,8,26	
Kenwood KT-2060L	140	FM,M,L	30	N	44,8,26	Built-in timer, RDS
Kenwood KT-3050L	170	FM,M,L	39	Y	44,10,28	IF selector, RDS
Kenwood KT-6050	300	FM,M	39	Y	44,10,33	IF switch, two antennae, RDS
Linn Kremlin	1995	FM	80	N	32,8,33	Dual aerial capability
Magnum Dyalab FT11	550	FM	-	N	-	Analogue, black finish
Magnum Dyalab FT101	825	FM	-	N	-	Analogue, black finish
Magnum FT101 Etude	1250	FM	-	N	-	Analogue, black finish
Marantz ST-53	170	FM,M,L	59	N	42,9,30	D-bus
Marantz ST-63	249	FM,M,L	59	Y	42,9,30	D-bus
Marantz ST-72L	300	FM,M,L	59	Y	42,10,34	D-bus, IF switch, local switch
McIntosh MR7083	2095	FM,M	16	N	-	Interface to McIntosh remote c
Meridian 504	595	FM	30	N	33,9,34	System handset
Meridian 604	1350	FM	30	N	-	
Michi RHT-10	895	FM	16	N	47,8,34	Remote control
Mission Cyrus FM7	400	FM	29	N	22,8,36	Remote control bus
Musical Fidelity E500	499	FM	20	N	44,12,35	AGC/IF switch
Musical Fidelity FT	899	FM	20	N	49,12,33	Remote control, bandwidth limi
Naim NAT03	499	FM	-	N	21,16,30	
Naim NAT02	910	FM	-	N	21,16,30	
Naim NAT01	1453	FM	-	N	21,16,30	
Onix BWD1	420	FM	-	N	75,23,37	In-house front end
Onkyo T-401	160	FM,MW	40	N	46,8,31	
Onkyo T430RDS	190	FM,MW	30	Y	46,9,30	
Onkyo T-409	230	FM,MW	30	N	28,8,30	Mini component
Onkyo T-450RDS	260	FM,MW	30	Y	46,9,31	
Onkyo T-411RDS	280	FM,MW	30	Y	28,8,30	Mini component
Onkyo R-811RDS	420	FM,MW	30	Y	28,12,33	Mini component, incl timer
Philips FT930	160	FM,M,L	40	Y	44,11,30	
Pioneer F-203RDS	130	FM,M,L	30	Y	42,8,29	RDS at very budget price
Pioneer F-303RDS	180	FM,M	40	Y	42,8,29	RDS with FON
Pioneer F-502RDS	250	FM,M	40	Y	42,9,34	2 ariel inputs
Quad FM4	434	FM	7	N	33,7,21	
Quad FM66	532	FM	19	N	33,8,26	For use with Quad 66 system
Rotel RT930AX	175	FM,M,L	20	N	44,8,26	
Rotel RT950BX	200	FM,M,L	20	N	44,8,24	
Rotel RT990BX	510	FM	16	N	44,8,29	Remote control
Sansui TU-X317	170	FM,M	20	-	-	
Sansui TU-X519	220	FM,M	30	-	-	
Sherwood TD1120	90	FM,M	24	N	-	
Sherwood TX1010C	100	FM,M	30	N	-	
Sherwood TX3010C	120	FM,M	30	N	-	
Sony STS211LB	130	FM,M,L	30	N	43,9,30	Station naming
Sony STS311LB	200	FM,M,L	30	Y	43,9,30	RDS EON, 'Autobetical' select
Sony STS505ES	250	FM,M,L	30	Y	43,9,35	UK optimised sound
Teac T-X4030	120	FM,M	20	N	44,9,28	
Technics ST-6T350L	140	FM,M,L	30	N	43,7,30	
Technics ST-GT550L	190	FM,M,L	39	N	43,7,31	Remote control capable
Technics ST-GT650L	230	FM,M,L	39	Y	43,10,31	Class AA, remote control ready
Yamaha TX-350L	130	FM,M,L	40	N	-	
Yamaha TX-470	160	FM,M	40	N	N	

Model	Price	Type	Speeds	Size	Special
TURNTABLES					
Akai AP A950	179	M	33/45	44,12,35	Inc cartridge
Alphason Sonata	835	M	33	-	Motor unit, suspended
Alphason Sonata/Atlas	1235	M	33/45	-	Motor unit inc PSU
Alphason Symphony	1860	M	33/45	-	Motor unit & PSU
Ariston Pro-1200	160	M	33/45	-	Semi-pro disco deck
Audiomeca Romance	1675	M	33/45	-	With Romeo unipivot arm
Audiomeca J1	2500	M	33/45	50,40,2	Top of the range model
Audiomeca J1/SL5	4250	M	33/45	50,40,2	With parallel tracking arm
B&O 7000	505	Auto	33/45	42,8,33	Inc MMC2 cartridge, RIAA pream
Basis Ovation	4950	M	33/45	58,42,14	Lead/brass, record clamped
Basis Debut Gold Std	7250	M	33/45	58,42,19	Belt drive, high mass, four po
Basis Debut Suction	8550	M	33/45	58,42,19	Includes suction platter
DNM Rota 1	2850	M	33/45	59,14,37	Includes arm and cartridge
DNM Rota 2	4000	M	33/45	59,14,37	Includes arm and cartridge
Dual CS3700/3701	85	S	33/45	36,10,36	Mid-sized turntable
Dual CS435	130	F	33/45	44,12,36	Turntable includes cartridge
Dual CS503-2	170	S	33/45	44,13,37	Turntable includes cartridge
Dual 505-4 UK	200	S	33/45	44,15,37	Turntable inc cartridge
Dual CS750-1	350	S	33/45/78	44,14,38	Turntable includes cartridge
Dual Golden II	500	S	33/45/78	44,14,38	Piano finish CS750-1
Genexxa Lab-710	60	M	33/45	-	Includes MM cartridge
Genexxa Lab-810	70	S	33/45	-	Includes MM cartridge
Goodmans Delta 700	55	S	33/45	36,90,37	Part of Delta system
Kenwood KD-492F	100	A	33/45	44,10,39	Includes cartridge

Model	Price	Type	Speeds	Size	Special
TURNTABLES					
Kuzma Stabi/PS	1200	M	33/45	51,18,4	Belt driven, external PSU
Kuzma Stabi Ref/PS	3000	M	33/45	-	Two motor, belt driven
Linn Basik	349	M	33/45	45,14,36	Complete with Akito arm
Linn LP12 Basik	745	M	33	45,14,36	Non-crystal motor drive
Linn LP12 Valhalla	894	M	33/45	45,14,36	Electronic PSU, upgradable
Linn LP12 Lingo	1345	M	33/45	45,14,36	Outboard high grade PSU
Manticore Madrigal	570	M	33/45	46,36,12	Turntable
Manticore Mantra	890	M	33/45	46,36,12	Turntable
Manticore Magister	3800	M	33/45	57,46,18	Special order only
Michell Mycro	397	M	33/45	46,14,34	
Michell Mycro/arm	739	M	33/45	46,14,34	Includes Rega RB300 arm
Michell Gyrodek	565	M	33/45	53,19,41	Optional outboard PSU
Michell Gyrodek/arm	907	M	33/45	53,19,41	Includes Rega RB300 arm
Moth Alamo	175	M	33/45	-	Comes with RB250 arm
Moth Turntable	199	M	33/45	-	Split-plinth design
Moth Kanoot Mk I Arm	249	M	33/45	-	Inc Rega RB250 arm
Moth Kanoot Mk III Arm	299	M	33/45	-	Inc Rega RB300 arm
NAD 5120	110	S	33/45	-	Includes arm
N'ham Spacedeck	600	M	33/45	-	
N'ham Illusion	600	M	33/45	-	
N'ham HyperSpacedeck	1200	M	33/45	-	
N'ham Graphic	1200	M	33/45	-	
N'ham Mentor	2200	M	33/45	-	75lb alloy or graphite platter
N'ham Mentor Ref	4800	M	33/45	-	150lb platter, graphite top
Origin Live Oasis-S	899	M	33	-	Suspended turntable
Pink Triangle Export GTi	890	M	33/45	46,15,37	Suspended turntable, acrylic p
Pink Triangle Anniv	1695	M	33/45	45,15,37	Two box reference deck
Pink Triangle Anniv/PSU	2050	M	33/45	45,15,37	Battery PSU version of above
Pioneer PL-225	120	S	33/45	42,10,36	Belt drive, fitted cartridge
Pioneer PL-335	150	A	33/45	42,10,36	Belt drive, fitted cartridge
Pro-ject 0.5	145	S	33/45	42,11,3	With Ortofon OMS cartridge
Pro-ject 1	185	M	33/45	42,11,3	With Ortofon 510 cartridge
Pro-ject 1 (E)	209	S	33/45	42,11,32	Semi-auto version of Pro-ject
Pro-ject 2	249	M	33/45	46,12,3	Metal/glass platter, clamp
Pro-ject 2/Ortofon	275	M	33/45	46,12,3	With Ortofon MC1 cartridge
Pro-ject 6	379	M	33/45	46,17,3	Suspended turntable
Pro-ject 6/Ortofon	435	M	33/45	46,17,3	As above, with Ortofon MC15
Pro-ject 6/Sumiko	699	M	33/45	46,17,3	With Sumiko arm
Rega Planar 78	198	M	78	45,13,37	As Rega Planar 2, 78 only
Rega Planar 2	198	M	33/45	45,13,37	Includes RB250 arm
Rega Planar 3	260	M	33/45	45,13,37	Includes RB300 arm
Rivelin Audio Eclipse	1595	M	33/45	45,13,38	Motor unit
Roksan Radius	495	M	33/45	45,12,35	Motor unit
Roksan Radius/Tabriz	695	M	33/45	45,12,36	As above, with Roksan arm
Roksan TMS	2500	M	33/45	45,12,35	Reference motor unit
Sherwood PS1870	70	S	33/45	-	Budget turntable with arm
SME Model 20	2683	M	33/45/78	42,16,32	Precision turntable
SME Model 20A	3976	M	33/45/78	42,15,32	As above, with SME Series V ar
SME Model 30	10166	M	78	45,22,35	Flagship turntable
SME Model 30A	11460	M	33/45/78	45,22,35	As above, with SME Series V ar
Sony PSLX150H	90	S	33/45	43,10,36	Player, with MM cartridge
Sony PSLX431B	150	A	33/45	43,11,36	Player, auto rec size select
Systemdek I/920	136	M	33/45	-	Semi-suspended deck
Systemdek IIX/900	230	M	33/45	-	Fully suspended design
Systemdek I/920/Moth	235	M	33/45	-	As above with RB250 arm
Systemdek IIXE/900	330	M	33/45	-	As above with separate PSU
Technics SL-BD20	140	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-BD22	160	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-1210MkII	430	M	33/45	46,17,36	Quartz DD, no cartridge
Technics SL-1200MkII	430	M	33/45	43,10,38	Quartz DD, includes T4P cartri
Thorens TD-180/AT91	180	S	33/45/78	-	Belt drive, plays 78s
Thorens TD180/S500	200	P	33/45/78	-	Belt drive, plays 78s
Thorens TD-280 IV/UK	200	S	33/45/78	-	Electronic belt drive, AT95E
Thorens TD-166 V/UK	200	M	33/45	-	Blank armboard, cut to shape,
Thorens TD-166 W/UK	270	M	33/45	-	Inc TP50 manual arm, AT95E
Thorens TD-166 V/UK	300	M	33/45	-	With Rega RB250 arm, no cart
Thorens TD-2001	500	S	33/45	-	Includes Thorens TP50 arm, no
Thorens TD-3001BC	630	M	33/45	-	No arm, various armboards avai
Thorens TD-3001/UK	770	M	33/45	-	Suspended, Rega arm no cart
Thorens TD-520	900	S	33/45/78	-	Thorens TP90, pitch control, n
Townshend MkIII Rock	799	M	33/45	-	Headshell end arm damping
Voyd The	1570	M	33/45	51,16,42	Original three-motor model
Voyd 0.5	3368	M	33/45	51,16,42	Upgraded standard Voyd
Voyd Reference	6500	M	33/45	51,16,48	Turntable, polycarbonate platt
Well T Record Player	1800	M	33/45	45,18,36	
Well Tempered Classic	2800	M	33/45	48,19,39	The original Well Tempered
Well Tempered Super	3500	M	33/45	49,19,39	Classic with carbon arm
Well Tempered Reference	5500	M	33/45	49,19,39	'Fountainhead' base/carbon arm
Wilson Benesch	1550	M	33/45	-	High-tech turntable

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.

Systemdek I/920	136	M	33/45	-	Semi-suspended deck
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HI-SPEK

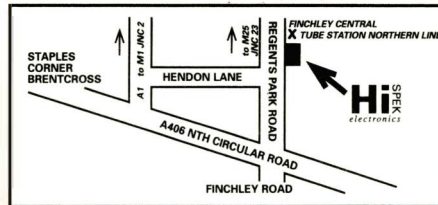
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marantz CD63

marantz PM44M2SE

MISSION 731

AURA VA100

JVC TWD308

DENON AVC1530

YAMAHA DSPA2070

Technics SUA900M2

JBL REL STRATA PACKAGE

MISSION 780SE

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ROTEL RA930AX MII		MARANTZ PM44SE	
	NAD 801		MISSION 760SE
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PIONEER PDS203 CD PLAYER £169.99		MISSION 760SE £149.99	
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Including FREE 10 metres QED 78 strand cable, Target speaker stands and headphones all worth £110		Including FREE 10 metres QED 78 strand cable, Target speaker stands and headphones all worth £110	
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Z-720 Z-D71000M
Z-1100 Z-D70000M
Z-1700 Z-D91000M

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NSX-270 NSX-540
NSX-340 NSX-550G
NSX-400 NSX-D636
NSX-430 NSX-D737
NSX-450G NSX-D939
NSX-520 NSX-K-E800

SURROUND SPEAKERS
SX-R210

SUBWOOFERS
TS-W5 TS-W7

MICRO SYSTEMS
LCX-50 LCX-9
LCX-7 LCX-70M
LCX-80 LCX-10
LCX-65

HI-FI SEPARATES
CASSETTE DECKS
AD-F450 XK-S7000
AD-F850 XK-S9000

DOUBLE CASSETTE DECKS
AD-WX727 AD-WX-929
AD-WX828

SW 8 System SW 200 System
SW 2 System SW 300 System
SW 160 System SW 500 System
Centerfield 50 Centerfield 200
Centerfield 100

JBL

TLX 110 TLX120 TLX 130
TLX 140 TLX 150 TLX 160
TLX 170 TLX 180

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JVC

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Adagio G7 Adagio S20
Adagio S60R Adagio C55
Adagio S50R Adagio C33
Adagio S50

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UX-A55R UX-A4
UX-C7 AWT UX-T1 AWT

SURROUND SOUND SPEAKERS
SP-E55

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Lifestyle Model 3 Music Centre
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RC-10 Remote Control Handset
RC-5 Remote Control Handset

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Acoustimass 3 Series 3 System
Acoustimass 5 Series 2 System
Acoustimass 3 System Powered
Acoustimass 5 System Powered

HOME CINEMA PRODUCTS
Acoustimass 7 System
Acoustimass 4 System
VS100

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HOME THEATRE
Model 40B Model 90
Model 70S Model 100

K SERIES
K120 K140 K160

Q SERIES
Q10 Q30 Q50
Q60 Q70 Q80

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Solid Monitor Solid Team Bass
Solid Team Solid Ovale
Solid Centrale Solid Verticale
Solid Theatre Solid Array
Solid Twin Bass

KENWOOD

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UD-202 HD-600
UD-302 DM-B9
UD-502 P-100
UD-552 SW-700
UD-952 SRX-200

DENON

CASSETTE DECKS
DRM 540 DRS 810
DRM 610 DRW 760 Twin
DRM 710

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D-F10CD UCD-F10
D-F10 CD/S UCR-F10

DENON MINI COMPONENT SYSTEMS
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D-250/S D-90/S
D-110 D-65
D-110/S D-65/S

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KA-103R KA-4050R
KA-2060R KA-5020
KA-3020SE KA-5050R
KA-3060R KA7050R

PROLOGIC AMPLIFIER
KA-V3700 KA-V8500
KA-V7700

PROLOGIC RECEIVERS
KR-1060 KR-V7050
KT-1060L KT-3050L
KT-2050L KT-650L

CASSETTE DECKS
KX-3050 KX-7050S
KX-5050 KX-9050S

DOUBLE CASSETTE DECKS
KX-W4080 KX-W8060
KX-W6080

CD PLAYERS
DP-2050 DP-5050
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Stereo HT-50
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Tfipi MS-10
Dialogue MS20
Sub-Woofer MS30
Wall Bracket MS40
Stand MS50

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Comet 40-3 Comet 70-3
Comet 60-3 Comet 60-3

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28 HI-FI CHOICE BUYER'S GUIDE



Key to cartridges.
Price - typical retail, to nearest pound.

Type - MM - moving magnet (output typically 1mV/cm/sec). MC - moving coil (output typically 0.1mV/cm/sec). Output - in mV/cm/sec
Int. stylus - Y for removable/replaceable styli and N for fixed styli.

Fit - N for normal half inch mountings, T for T4P plug in types.
Weight - in grams.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



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Int. stylus - Y for removable/replaceable styli and N for fixed styli.

Fit - N for normal half inch mountings, T for T4P plug in types.
Weight - in grams.

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Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
CARTRIDGES							
Arcam C77	30	MM	4mV	Y	N	-	Conical stylus
Arcam C77MG	40	MM	4mV	Y	N	-	As C77 with metal body
Arcam E77	50	MM	4mV	Y	N	-	Elliptical stylus
Arcam E77MG	60	MM	4mV	Y	N	-	As E77, with metal body
Arcam P77	63	MM	4mV	Y	N	-	'Profiled' stylus
Arcam P77MG	73	MM	4mV	Y	N	-	As P77, with metal body
Audio Note lo IIV	1395	MC	-	N	N	-	Silver wired
Audio Note lo Ltd V	2950	MC	-	N	N	-	Needs PSU
Audio Technica AT-91	13	MM	-	Y	N	-	
Audio Technica AT-95E	19	MM	-	Y	N	-	
Audio Technica AT-101EF	20	MM	-	Y	N	-	
Audio Technica AT-110E	24	MM	-	Y	N	-	
Audio Technica AT-420E	40	MM	-	Y	N	-	
Audio Technica AT-450E	62	MM	-	Y	N	-	
Audio Technica AT-OC3	104	MC	-	N	N	-	
Audio Technica AT-OC5	146	MC	-	N	N	-	
Audio Technica AT-OC30	619	MC	-	N	N	-	Nude micro linear stylus
Audio Technica ART-1	944	MC	-	N	N	-	
Audioquest MC5	250	MC	1.4mV	N	N	-	High output MC, line contact
Audioquest 404ii	500	MC	0.5mV	N	N	-	Boron cantilever
Audioquest B200L	800	MC	0.5mV	N	N	-	Boron tube cantilever
Audioquest 7000NSX	1295	MC	0.3mV	N	N	-	Boron tube cantilever
B&O MMC4	1	-	-	-	-	-	MM, elliptical diamond
B&O MMC2	1	-	-	-	-	-	MM, Contact Line stylus
B&O MMC1	1	-	-	-	-	-	MM, Contact Line stylus
Benz-Micro The Glider	600	MC	1mV	N	N	-	Semi-nude design
Benz-Micro H200	700	MC	2mV	N	N	-	
Benz-Micro M090	700	MC	0.9mV	N	N	-	
Benz-Micro L040	700	MC	0.4mV	N	N	-	
Benz-Micro Wood Ref	1100	MC	0.3mV	N	N	-	Bruyere housing, boron
Benz-Micro Ruby Ref	1400	MC	0.3mV	N	N	-	Bruyere housing boron
Denon DL110	70	MC	-	N	N	-	Elliptical stylus
Denon DL160	90	MC	-	N	N	-	
Denon DL103	100	MC	-	N	N	-	
Denon DL304	200	MC	-	N	N	-	Elliptical stylus
Dynavector 50X MkII	159	MC	-	N	N	-	High output elliptical MC
Dynavector 10X4 MkII	189	MC	-	N	N	-	High output elliptical MC
Dynavector 23RS MkII	375	MC	-	N	N	-	Micro ridge stylus
Dynavector 17D2 MkII	449	MC	-	N	N	-	Micro ridge stylus
Dynavector XX-1L	998	MC	-	N	N	-	Micro ridge stylus
Dynavector XX-1	998	MC	-	N	N	-	High output, line contact MC
Glanz GMC-10LX	69	MC	0.3	Y	N	5	
Glanz GMC 20E	99	MC	0.5	Y	N	6	
Goldring Elan P	17	MM	5.0mV	Y	T	6	T4P version of Elan
Goldring Elan	17	MM	5.0mV	Y	N	4	Rigid body
Goldring Elektra	25	MM	5.0mV	Y	N	4	Elliptical stylus
Goldring 1006	50	MM	6.5mV	Y	N	6	Elliptical stylus
Goldring 1012GX	65	MM	6.5mV	Y	N	6	Gyger II stylus
Goldring 1022GX	85	MM	6.5mV	Y	N	6	Gyger I stylus
Goldring Eroica LX	100	MC	0.5mV	N	N	6	As Eroica, low output
Goldring Eroica	100	MC	2.5	N	N	6	Gyger II stylus
Goldring 1042	105	MM	6.5mV	Y	N	6	Gyger S stylus
Goldring Elite	200	MC	0.5mV	N	N	6	van den Hul, silver wire
Goldring Excel	549	MC	0.5mV	N	N	8	van den Hul I stylus
Goldring Excel GS	599	MC	0.5mV	N	N	8	Gyger S, hand built
Grado ZTE+1	27	MM	-	Y	N	-	Moving flux, high output
Grado ZCE+1	37	MM	-	Y	N	-	Moving flux
Grado Z3E+1	47	MM	-	Y	N	-	Moving flux
Grado ZF1+	82	MM	-	Y	N	-	Moving flux
Grado Signature Junior	149	MM	-	Y	N	-	Moving flux
Grado Signature BMZ	250	MM	-	Y	N	-	Moving flux
Grado Signature MCZ	375	MM	-	Y	N	-	Moving flux
Grado Signature TLZ	650	MM	-	Y	N	-	Moving flux
Grado Signature XTZ	975	MM	-	Y	N	-	Moving flux
Kiseki Blue GS	499	MC	0.4mV	N	N	8	
Kiseki Purpleheart	749	MC	0.4mV	N	N	11	
Kiseki PHS	899	MC	0.4mV	N	N	8	
Kiseki Blackheart	1995	MC	0.3mV	N	N	11	
Kiseki Lapis Lazuli	5000	MC	0.4mV	N	N	8	Gemstone body
Koetsu Red T	1550	MC	-	N	N	-	High-output MC
Koetsu Red K Sig	1998	MC	-	N	N	-	Selected, re-tuned Red T
Koetsu Urushi	2200	MC	-	N	N	-	Metal alloy body
Koetsu Signature	3218	MC	-	N	N	-	Rosewood body
Linn K5	54	MM	4.5mm	Y	N	-	
Linn K9	109	MM	4.5mm	Y	N	-	Metal body
Linn K18/II	197	MM	4.5mV	Y	N	-	Metal body
Linn Klyde	449	MC	150uV	N	N	-	Alloy body
Linn Arkiv	998	MC	150uV	N	N	-	Three point mt, machined body
London Decca Maroon	199	MM	5.0mV	N	N	8	Original mounting
London Decca Gold	239	MM	5.0mV	N	N	8	Elliptical stylus
London Decca Maroon Dp	259	MM	5.0mV	N	N	10	Decapod mounting
London Decca Gold Dpd	299	MM	5.0mV	N	N	5	Elliptical stylus, Decapod
London Decca S Gold	339	MM	5.0mV	N	N	7	Original mounting
London Decca S Gold Dp	399	MM	5.0mV	N	N	10	Decapod mounting
London Decca Jubilee	999	MM	5.0mV	N	N	5	0.5 inch mounting
Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory.							
Systemdek I/920	136	M		33/45	-		Semi-suspended deck

Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
CARTRIDGES							
Lyra Lydian	649	MC	-	Y	N	-	
Lyra Clavis Da Capo	995	MC	Low	N	N	-	
Lyra Parnassus	1995	MC	-	Y	N	-	
Militek Aurora	299	MC	2.0mV	N	N	9.5	High output MC
Militek Olympia	399	MC	2.0mV	N	N	9.5	As Aurora, sapphire cantilever
Nagaoka MP-11	24	MM	-	Y	N	-	Elliptical stylus
Nagaoka TS11	70	MM	-	Y	N	-	Line contact stylus
Nagaoka TS12 Boron	80	MM	-	Y	N	-	As MP-11, with boron cantilever
N'ham Tracer I	98	MM	-	-	-	-	
N'ham Tracer II	175	MM	-	-	-	-	
N'ham Tracer III	350	MM	-	-	-	-	
N'ham Tracer IV	550	MM	-	-	N	-	
Ortofon OM5	10	MM	-	Y	N	-	Entry level elliptical cart
Ortofon OMP-5E	16	MC	-	Y	T	-	
Ortofon OM-5E	16	MM	-	Y	N	-	
Ortofon OM Pro S	21	MM	-	Y	N	-	Budget disco cartridge
Ortofon OM10 Super	25	MM	-	Y	N	-	Elliptical stylus
Ortofon OM Night Club S	32	MM	-	Y	N	-	Spherical stylus
Ortofon 510	32	MM	-	Y	N	-	
Ortofon OM Night Club E	37	MM	-	Y	N	-	Elliptical stylus
Ortofon Concord Pro	40	MM	-	Y	N	-	For professional use
Ortofon Concord NC S	55	MM	-	Y	N	-	Professional, spherical stylus
Ortofon 520P	55	MM	-	Y	N	-	
Ortofon 520	55	MM	-	Y	N	-	Elliptical stylus
Ortofon OM20 Super	60	MM	-	Y	N	-	
Ortofon MC1 Turbo	60	MC	-	Y	N	-	
Ortofon Concord NC E	60	MM	-	Y	N	-	Spherical version of Concord
Ortofon OM30 Super	80	MM	-	Y	N	-	Fine line stylus
Ortofon MC10 Super	85	MC	-	N	N	-	
Ortofon 530P	85	MM	-	Y	T	-	
Ortofon 530	85	MM	-	Y	N	-	Elliptical stylus
Ortofon MC3 Turbo	110	MC	-	N	N	-	
Ortofon MC15 Super II	110	MC	-	N	N	-	
Ortofon 540	110	MM	-	Y	N	-	
Ortofon MC25E	160	MC	-	N	N	-	High output, elliptical stylus
Ortofon MC25FL	210	MC	-	N	N	-	High output, Fine Line stylus
Ortofon MC10 Supreme	250	MC	-	N	N	-	High output MC
Ortofon MC20 Supreme	350	MC	-	N	N	-	High-output elliptical MC
Ortofon MC30 Supreme	450	MC	-	N	N	-	High output
Ortofon MC2000II	650	MC	-	N	N	-	
Ortofon MC3000II	950	MC	-	N	N	-	'Replicant' stylus
Ortofon MC5000	1500	MC	-	N	N	-	Sapphire cantilever
Ortofon MC7500	2000	MC	-	N	N	-	75th Anniversary model
Pickering TE-15	20	MM	-	Y	N	-	Tracks 1.5gm
Pickering VE-15	25	MM	-	Y	N	-	Tracks 1 - 3gms
Pickering T-E	25	MM	-	Y	T	-	Elliptical
Pickering V15-DJ	28	MM	-	Y	N	-	Disco model
Pickering TL-E	35	MM	-	Y	T	-	
Pickering XV15-350C	40	MM	-	Y	N	-	Conical stylus
Pickering TL-2E	45	MM	-	Y	T	-	
Pickering XV15-625E	50	MM	-	Y	N	-	
Pickering XV15-150-DJ	50	MM	-	Y	N	-	Professional cartridge
Pickering TL-2-S	55	MM	-	Y	N	-	Line contact stylus
Pickering XV15-757S	60	MM	-	Y	N	-	Line contact stylus
Pickering XV15-625DJ	60	MM	-	Y	N	-	Broadcast cartridge
Pickering XV15-1800S	70	MM	-	Y	N	-	Line contact stylus
Pickering TL3S	80	MM	-	Y	T	-	
Pickering XEV-3001E	95	MM	-	Y	N	-	Elliptical stylus
Pickering XLZ-3500	100	MM	-	Y	N	-	
Pickering TL-4-S	100	MM	-	Y	T	-	
Pickering TL-3003	145	MM	-	Y	T	-	
Pickering XLZ-4500	150	MM	-	Y	N	-	Line contact
Pickering TL-4004	175	MM	-	Y	T	-	
Pickering XSV-5000U	200	MM	-	Y	N	-	High output
Pickering XLZ-7500	200	MM	-	Y	N	-	Hybrid, low impedance
Pickering TLZ-7500-S	200	MM	-	Y	T	-	
Rega Bias	34	MM	-	-	N	-	
Rega 78	34	MM	-	-	N	-	for 78rpm records
Rega Super Bias	52	MM	-	-	N	-	
Rega Elys	74	MM	-	-	N	-	
Roksan Corus Black	130	MM	-	Y	N	-	
Roksan Shiraz	800	MC	-	N	N	-	
Shure ME70B	18	MM	6mV	Y	N	-	Conical stylus
Shure M92E	22	MM	5mV	Y	-	-	Dual T4P & normal fit
Shure SC35C	28	MM	5mV	Y	N	-	For broadcast use
Shure M44C	33	MM	9mV	Y	N	-	Professional, spherical stylus
Shure ME95ED	38	MM	5mV	Y	N	-	Elliptical stylus
Shure M55E	42						



Key to tonearms
 Price - typical retail to the nearest pound
 Type - F - fixed armtube/headshell, A - interchangeable armtube, H - interchangeable headshell.
 Base type - S - SME fit, L - Linn/Alphason fit, P - proprietary fit.
 Effective length - from pivot point to headshell in millimetres.

Weight range - the range of cartridge masses that the arm can accept in grams.
 Special - characteristics of the arm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
CARTRIDGES							
Sumiko Black Pearl	50	MM	-	Y	N	-	
Sumiko Pearl	70	MM	-	Y	N	-	
Sumiko Blue Point	100	MC	-	N	N	-	High output MC
Sumiko BPS	250	MC	-	N	N	-	Nude stylus
Transfiguration AF-1 Mk I	1595	MC	230uV	N	N	-	MC, transformer & preamp
Transfiguration Supreme	1995	MC	200uV	N	N	-	Yokeless ring magnet system
van den Hul MM-1	275	MM	-	-	N	-	
van den Hul MM-2	325	MM	-	-	N	-	
van den Hul DDT-II	675	MC	-	N	N	-	Silver coils
van den Hul MC-10	775	MC	-	N	N	-	Silver coils
van den Hul MC-One	975	MC	-	N	N	-	Selected version of MC-10
van den Hul MC-One/Hi	1100	MC	-	N	N	-	High output version of MC-10
van den Hul MC-Two	1300	MC	-	N	N	-	As MC-One/Hi, higher output
van den Hul Grasshopper II	2300	MC	-	N	N	-	
van den Hul Grasshopper III	2300	MC	-	N	N	-	
van den Hul Grasshopper II	2950	MC	-	N	N	-	
van den Hul Grasshopper III	3200	MC	-	N	N	-	
van den Hul Grasshopper III	3200	-	-	N	N	-	
van den Hul Grasshopper III	3500	MC	-	N	N	-	
Virtual Reality Aclere	199	MC	-	N	N	-	
Virtual Reality Etile	299	MC	-	N	N	-	
Virtual Reality Lexe	899	MC	-	N	N	-	

Model	Price	Type	Base type	Effective len	Wt. range	Special
TONEARMS						
Air Tangent Tangent 10B	8000	-	-	-	-	Air-bearing
Air Tan Tangent Ref. Sig.	10000	-	-	-	-	Remote version of above
Alphason Xenon	286	F	L	229	3-20	1-piece titanium armtube
Alphason Xenon MCS	370	F	L	229	3-20	vdH silver wiring
Alphason HR100S	490	F	L	229	3-20	Superior quality bearing
Alphason HR100S MCS	550	F	L	229	3-20	vdH silver, top bearings
Audiomeca SL5	1999	-	-	-	-	Parallel tracking
Decca LI Arm	49	H	L	212	5-12	Damped
Decca LIR Arm	99	H	L	212	5-12	Rewired version of LI
Dynavector 507	1400	-	-	-	-	Biaxial design
Graham 1.5T	2550	-	S	-	-	SME base, unipivot
Helius Orion 3 S1 Copper	395	P	P	254	-	
Helius Orion 3 S1 Silver	515	P	P	254	-	
Helius Orion 3 S2 Copper	575	P	P	254	-	Bi-metal tube
Helius Orion 3 S2 Silver	695	P	P	254	-	Bi-metal tube
Helius Cyatlene 2	1395	P	P	254	-	Silver wired, pivoted
Kuzma Stogi	600	-	-	-	-	Effective mass 13gm
Kuzma Stogi Ref	1000	-	-	-	-	Effective mass 12.5gm
Linn Akito	209	F	L	229	2-10	Statically balanced
Linn Ekos	1297	F	L	229	4-9	Dynamically balanced
Manticore Musician	395	F	L	230	-	
Manticore Magician1	695	F	L	230	-	Polished armtube finish
Manticore Magician2	795	F	L	305	-	Polished armtube finish
Moth Arm	95	-	-	-	-	Rebadged Rega RB250
Moth Mk III	146	-	-	-	-	Rebadged Rega RB300
Naim ARO	794	-	-	-	-	Unipivot
N'ham Space	350	-	-	-	-	Optional silver wiring, unipiv
N'ham Mentor	750	-	-	-	-	Silver wiring, unipiv
N'ham Alien	1200	-	-	-	-	Graphite tube, unipivot
Rega RB250	95	F	R	237	-	Scaled down RB300
Rega RB300	139	F	R	237	-	Pivoted arm
Roksan Tabriz Zi	330	F	-	-	-	"Intelligent" counterweight
Roksan Artemiz	690	F	-	-	-	Flagship arm
SME Series IIIS	242	A	S	233	0-12	Economy version of Series III
SME 3009 Ser II Imp	268	F	S	231	3-7	Fixed headshell, low mass
SME 3009 S2 Ser II Imp	292	H	S	231	3-8	Detachable headshell, medium m
SME Series III	335	A	S	233	0-13	Ultra-low mass for hi-complan
SME Series II 3010-R	455	H	S	239	0-25	Detachable headshell, 10 inch
SME Series II 3012-R	489	H	S	308	0-25	Detachable headshell, 12 inch
SME Series II 3009-R	495	H	S	233	0-28	Heavier version of Ser II S2 I
SME Series 300-309	599	H	S	232	6-17	Ser V derivative with detach h
SME Series 300-310	611	H	S	238	6-17	10 inch (nom) version of 300-3
SME Series 300-312	694	H	S	308	5-14	12 inch (nom) version of 300-3
SME Series IV	869	F	S	233	5-16	Economy version of Series V
SME Series V	1294	F	S	233	0-14	Flagship model
Townshend Excalibur	799	F	P	220	3-14	Outrigger headshell damping
Wheaton Tri-Planar 4	2750	-	-	-	-	With terminal box
Wheaton Tri-Planar 4C	3000	-	-	-	-	As above with Cardas cable
Wilson Benesch ACT1	975	-	-	-	-	Carbon-fibre armtube, unipivot
Zeta	469	-	-	-	-	Pivoted
Zeta	555	-	-	-	-	Pivoted, vdH wired

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
 SME Series V 1232 F S 233 0-14 Flagship model

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"I found the sound of my LPs improved significantly, reminding me of the experience of listening to records on a Goldmund Reference turntable with a van den Hul Grasshopper cartridge with its nude

stylus. All of a sudden, much more of the music, and the space in which it was performed, was evident. I'm sure that the legions of Linn and Rega owners out there who still play their LPs will want to make the modest investment required for a major improvement in vinyl play."

Andrew Marshall

(Audio Ideas Guide, Winter '94)

Hear what your fellow music lovers say:

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Mr. C.R., Northants

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Can RINGMAT really be that good?

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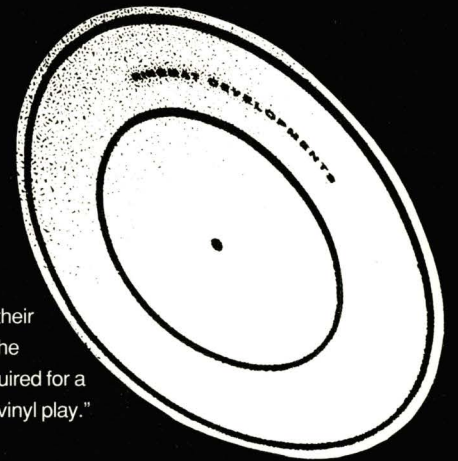
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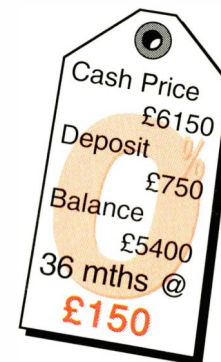
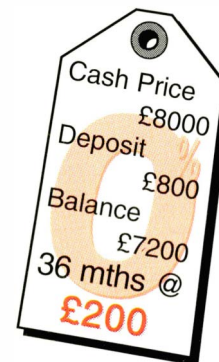
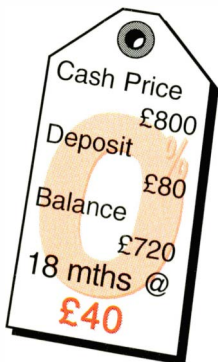
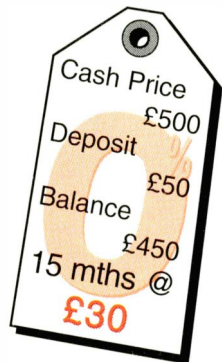
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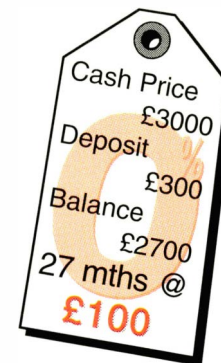
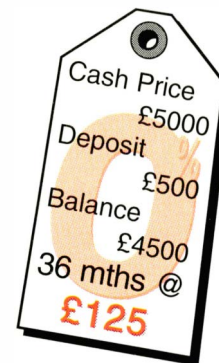
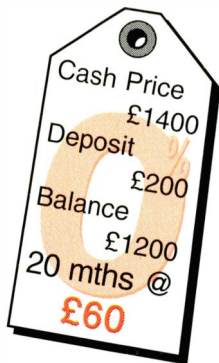
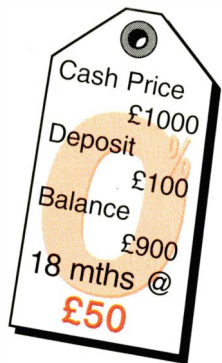
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The DIRECTORY



The original and best review based hi-fi guide

This is the legendary Directory, the second part of the *Hi-Fi Choice Buyer's Guide*, based entirely on comprehensive technical and subjective reviews. Each entry carries the weight of our exhaustive test procedures and should be read in conjunction with the prices and specifications given in our index starting on page 111.

The *Hi-Fi Choice Directory* was conceived as a reference guide to all the audio products reviewed by *Choice* that are currently available. The products are split into categories, each with its own introduction containing information about the product type and its applications. They are particularly relevant to the uninitiated first time buyer and help sort out the order of priorities when buying a piece of equipment.

Each product along with its current retail price is placed in its respective category in alphabetical order. The prices of the products are updated on

a regular basis, though it should be noted that our value ratings are based on the product's price at the time of review.

Sound quality

This column contains the ratings for the standard achieved in our listening tests. The sound quality ratings range from Poor to Excellent. Their meaning and order are as follows:

P	POOR
A-	AVERAGE-
A	AVERAGE
A+	AVERAGE+
G-	GOOD-
G	GOOD
G+	GOOD+
VG	VERY GOOD
E	EXCELLENT

With P being the worst and E the best rating within a section.

One important point to remember is that these cannot be used to compare products from different categories. For example, a cassette deck rated Excellent in sound quality will not usually offer the same

Finding that component

Before you shop, follow our top eight tips for better buying:

1. Check out the components' recommended retail prices in the *Directory*.
2. Find out as much as you can about the products you want by reading *Hi-Fi Choice's* reviews and lab tests.
3. Visit local dealers that stock some of the brands you want to hear and try to find one that seems sympathetic to your needs.
4. Don't discount a dealer's suggestions just because the products don't have rave reviews.
5. Take your own software (records, CDs, tapes) along for a demonstration of the equipment that the dealer recommends.
6. Listen at the sort of volume you would normally use at home — systems often sound more impressive when played loud.
7. If you are unsure about something or want to hear an alternative, just ask.
8. Audition a system for a reasonable amount of time, say three quarters of an hour or so, before making a decision.

standard of fidelity as a similarly rated turntable or CD player. Unless you have first generation masters of course.

Comments

The Comments column contains a potted summary based on the original review, emphasising the salient points of a product's character and sonic performance. The space available doesn't allow for great detail but we have attempted to put across the essence of the review. Obviously, important information on compatibility or auxiliary equipment used in the test cannot be included, and we would advise you to refer to the original review for this.

Please note that these comments are those of our own reviewers and not, as is the case with some magazines, those of the manufacturer.

Features

Product features are shown with a combination of figures and blob charts, with headings at the top of each column indicating the appropriate category, a blob

indicating the existence of a particular feature.

There are different category headings for each section and the more complicated categories are explained in the individual introductions. Where figures are used the unit of measurement is shown in the heading.

Back issues

The final column refers to the issue of *Hi-Fi Choice* which featured the complete review.

How to use this guide

Perhaps the most influential symbols in the *Directory* are the little red triangles ▲ found in the value column at the beginning of each entry where appropriate.

Products that make the grade are awarded the Best Buy or Recommended accolade.

▲▲ A product carrying the Best Buy swingtag is of excellent quality and good value for money in its price category.

▲ Recommended products are runners up, but still definitely worth considering within their price bands.

Please note however, that an expensive Recommended product will nearly always sound better than an inexpensive Best Buy.

An ideal situation would be to choose suitably priced ▲▲ Best Buy or ▲ Recommended products from relevant categories and create a Best Buy system. However, due to the variety in tonal balance that exists in many audio products, and differences in taste, system building is unfortunately not that simple. These ratings make a useful guideline for short-listing components, but only experiencing the actual combination will tell you whether it works for you.

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AV PROLOGIC

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SUA800K 111 £329.00
SUA900 80W PCH £399.00
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Amplifiers

The amplifier sits at the heart of the system, processing the outputs from all the various music sources as necessary and then driving the loudspeakers. These two (quite separate) functions are integrated into a single box at the low-to-middle price points; separated pre- and power amplifiers, even separate power supplies, become increasingly common as one moves upmarket.

There is a substantial difference between specialist (sound quality oriented) amplifiers and the consumer electronics style models. The former are bleakly simple, avoiding all unnecessary features to provide the most direct signal path in the interests of sound quality. The latter range

from models with basic tone controls to those with remote control (including volume), surround sound options etc.

We include our measured power output (RMS, 8ohm load, 1 channel driven) – but again, paradoxically, this doesn't necessarily correspond to the loudness capability of the amplifier, which has as much to do with the elegance of the overload characteristics within a given system (valve amplifiers invariably sound more powerful than their rating would suggest).

Apart from output the facilities listing shows how many line (that is inputs besides those for phono cartridges) inputs a product has and

includes tape inputs. The MM and MC blobs indicate which types of cartridge can be accommodated. Integrated, preamp and power amp indicate the type of amplifier and in some instances that a pre/power combination has been tested. In such instances the price given is for both components. The remote control and headphone socket blobs indicate the existence of these facilities.

An increasing number of amplifiers are supplied without RIAA disc stages, or with the phono stage as an optional extra. If you use a turntable, make sure that it has a MM or MC stage to suit your cartridge.

▲▲ Best Buy

Amplifiers

Product	£Price	Comments	Output W/RMS	Line inputs	MM	MC	Integrated Preamp	Power amp	Remote control	Headphone socket	Issue No.
▲ Albarry AP4/S508	850	A- A disappointing sound from a pre/power amp that's hamstrung by a variety of technical oversights. Albarry has done better.	46	4	•		•	•			116
▲ Albarry PP1	430	G+ Available with or without various MM/MC options, the 'basic' PP1 has an attractively warm, earthy sound.	48	4			•				104
Alchemist Kraken	395	A Class-A objet d'art that's far too sensitive to RF interference. Can sound cold and fierce as a result.	54	5	•	•	•				116
▲ Alchemist Kraken APD7/APD8	775	G A quirky Class A number with an equally warm and colourful sound. Hardly accurate but entertaining nonetheless.	49	4	•			•	•		124
AMC CVT3030	529	A A well meaning and affordable attempt to mix transistors with valves, albeit one that only really shines with simple musical styles.	35	5	•		•				116
Arcam Alpha 5	230	A+ A pared-down version of the Alpha 6 that suffers little penalty in power but a significant forfeit in sound quality.	60	5	•		•			•	134
▲ Arcam Alpha 6	300	VG A new MOSFET design with a subtle and melodic sound that takes a conservative view of powerful dynamics	68	6	•	•	•			•	129
▲ Arcam Delta 110S/120.2	1070	VG Now in mkII guise this established combination has matured into a very articulate, powerful if dry-sounding amplifier.	109	4	•	•	•	•	•	•	124
▲ Arcam Delta 290	480	VG Combines the dryness and restraint of Arcam's older models with a refreshing sense of detail, dynamics and musical colour.	99	5	•	•	•			•	116
▲ Art Audio Quintet	1393	VG Switchable triode/ultralinear output stage. In triode mode these are 15 of the sweetest watts around. Surprisingly gutsy	15/25					•			109
▲▲ Audio Innovations Alto	300	VG Despite a shortfall in very deep bass this unusual amplifier still sounds beautifully open, natural and relaxed.	40	6			•				138
Audio Innovations Series 200	848	G Turns in a fuller and more substantial performance via MM rather than CD. Otherwise its sound can seem slightly bleached.	10	5	•		•	•			109
▲ Audio Innovations Series 300II	500	G+ Under-powered and over-distorted yet capable of realising an open and captivatingly expressive sound. Sensitive speakers are a must	9	4	•		•				97
▲ Audio Innovations Classic 25	899	G+ Warm, cuddly and immensely musical kit amp that almost transcends 'hi-fi' with its sheer listenability	24	5			•				126
▲ Audio Innovations Series 700	999	G+ Valve amp that can turn the roughest of digital sounds into music, both understated and graceful. Sensitive speakers are a must	24	5			•				116
▲ Audio Note Oto SE	1500	VG Transparent, very dynamic, excellent clarity and subtlety with limited power make for a very clean sounding amp	9.5	3			•				126
▲ Audio Note Ongaku	43125	E A single ended, zero negative feedback, triode, line level integrated amp and a half. Probably the best amplifier in the world!	27	6			•				Col
▲ Audiogram MB1	500	G+ It'll successfully tackle the most difficult of speakers and still provide a very warm, rich and euphonic sound.	46		•		•			•	116
▲ Audiolab 8000A	480	VG Recent updates have maintained its competitiveness with a thoroughly refined, consistent and very disciplined sound.	80	5	•	•	•				129
Audiolab 8000C/8000P	1100	G Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7	•	•	•	•			97
Aura VA-100II Evolution	350	G- Our sample failed to confirm Aura's claims for more power. The big, smooth yet slightly disjointed sound was equally familiar.	74	6	•		•				138
▲ Beard Audio CA35/P35mkII	2390	VG Good build quality and finish and a characteristic valve sound make a first class amplifier capable of great musical enjoyment	35	4	•	•	•	•			63
Beard CA506	1695	G+ A versatile valve preamp, the bass sounded lively if a touch softened, while the treble was detailed but lacked a little sparkle	4	•	•		•				50
▲ Conrad-Johnson PV-10A	1250	E Fabulous preamplifier. Beautiful imaging, superb detail, plenty of gain on the phono stage; classy build quality too.	4	•			•				78
▲ Conrad-Johnson Premier 7	11000	E The 'Seven' is designed without compromise, and is clearly one of the finest (valve) preamplifiers money can buy.	4	•	•		•				Col
Creek 4240	249	G- Bearing no relation to earlier Creek designs, this radical re-think is very much more successful via MM than CD.	49	4	•	•	•				134
▲ Denon PMA-250III	160	A- Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3			•				121
▲ Denon PMA-350II	220	G+ In-depth modifications have brought the original PMA-350 out of its shell with a powerful, up-front and compelling performance.	89	5			•				134
▲ Denon PMA-450	250	G+ Denon's latest integrated amp swept the board with its big, brassy if somewhat extravagant sound.	99	5	•		•				116
▲ DPA Digital DSP-200S/DPA-200S	1245	E The very dramatic but exceptionally detailed and transparent sound of this combination belies its modest power rating.	48	5			•	•			124
▲ EAR 802/509mkII	4200	VG Extremely well made and combining the sonic strengths of both transistors and valves this EAR combo warrants attention	100	6	•		•	•			63
EMF Audio Sequel	349	G+ A fresh start for Mike Creek has resulted in the Sequel, a minimalist amp with a very refined but mildly restrained sound	47	4	•		•				109
Exposure XX	625	A Line only integrated with good sense of timing but limited hf extension. Likely to be very system dependent.	43	4			•				121
▲ Harman Kardon HK1400	400	G+ HK's first line-only amplifier exudes a relaxed but confident sound that is only troubled by the most dense of recordings.	52	7			•				129
Harman Kardon HK640	400	G- A light and breezy-sounding line-only amp with full remote control. Needs more substance to counter its flyaway balance.	78	6			•			•	138
▲ Jadis JP30/JA30	12204	E French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4	•		•	•			60
JVC AX-R562	250	A- More fuss and bluster than detail and dynamics was how one listener concisely described this less than wonderful model	90	5	•		•			•	121
▲ Kenwood KA-3020	170	G+ An unassuming little amplifier that turns in a remarkably balanced and entertaining sound. Lively, detailed and engaging	66	5	•		•				97
▲ Kenwood KA-3020SE	230	G+ A lower-powered but more load tolerant version of the KA-3020 with an up-beat yet very comfortable and generous sound.	39	5	•		•				134
Kenwood KA-4050R	280	A- Respectable but ultimately uninspiring model whose remote control is its main asset.	85	5	•	•	•			•	121
Kenwood KA-5050R	350	A A listenable but neither particularly communicative or captivating amplifier that puts features ahead of sound.	103	6	•	•	•			•	129
▲ Lecson Quattr	420	G Underpowered but with the flexibility of four independent power amps. Very deep, captivating sound with 3D soundstaging.	40	5	•	•	•				92
Linn Majik-I	593	A The cornerstone of Linn's modular hi-fi system has many innovations to its credit but its sound is vague and confused.	33	6	•		•			•	129
▲ Magnum Class A	599	G+ Lashings of rich and compelling music, trading a hint of lushness for stark accuracy. An unexpected find. Phono stage option	55	7			•				116
Magnum Quartet	329	A- An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble.	72	5			•				121
Marantz PM-44SEmkII	200	A- Two generations on from the PM-40SE, Marantz' latest £200 contender provides a disappointingly grey view of music.	56	5	•		•				134
Marantz PM-54SE	330	G- A beefed-up variation of the PM-40SE inside a PM-52SE case. It has a very quick but forward and ultimately tiresome balance.	79	6	•	•	•				138
▲ Marantz PM-52SE	300	G+ The SE premium pays for a degree of fluency that draws you into the music and keeps you there. Rather nice	95	6	•	•	•				121

Amplifiers continued

Product	£Price	Comments	Output W/8Ω	Line inputs	MM	MC	Headphone socket	Remote control	Power amp	Preamp	Integrated	Issue No.
Marantz PM-80mkl	480	G- Less the revision and more an entirely new amp, this model sounds at its sweetest and most agreeable in the 31W Class A setting.	130	5	•	•	•	•	•	•	•	129
▲ Moth Series 30	587	G+ A modular system capable of cracking results. The passive preamp and power amp combination warrant a Best Buy in their own right.	35	4	•	•	•	•	•	•	•	109
▲ Musical Fidelity Preamp/Typhoon	568	G+ A combination that plays everything close to its chest but bridge the power amp and you'll witness an explosion of detail.	62	6	•	•	•	•	•	•	•	116
▲▲ NAD 302	170	G+ A spritely and uplifting performance. Sounds loud but never intrusive or fatiguing.	39	5	•	•	•	•	•	•	•	116
▲▲ NAD 304	230	G+ Equally effective with CD and vinyl this is another successful and entertaining NAD amplifier for your shortlist	50	6	•	•	•	•	•	•	•	121
NAD 1000S/208	1120	A+ One of the beefiest amplifiers we've ever tested. Unfortunately it sounds too restrained and lightweight.	314	5	•	•	•	•	•	•	•	124
▲ Nakamichi IA-3	350	G A minimalist outing for the cassette heroes that's very confident if a tad restrained.	62	3	•	•	•	•	•	•	•	121
▲ NVA AP-20	340	G+ Utilitarian amplifier sounds gentle and restrained but is euphonic and utterly engaging. Optional phono stage	35	4	•	•	•	•	•	•	•	109
Onix OA-21S/SOAP	730	G- Via MM disc this amp comes alive with a fresh and vibrant sound though its CD input sounds utterly dead by comparison.	60	4	•	•	•	•	•	•	•	97
▲ Philips FA-930	200	A+ Radical styling hides a digital switching facility plus full remote control over what is Philips' best effort to date	99	5	•	•	•	•	•	•	•	109
▲ Pioneer A-303R	200	G A remote-controlled amp with a surprisingly fresh and uncomplicated sound that bests much of its audiophile competition	56	5	•	•	•	•	•	•	•	134
Pioneer A-300X	230	A+ This revamped version of the A-300 was also more confident sounding via CD than MM, yet our panel were still left unmoved.	55	5	•	•	•	•	•	•	•	116
▲▲ Pioneer A-400	280	VG Pioneer's design concept snaps into focus with an amp that seems to bubble with musical detail. A budget bench-mark	71	5	•	•	•	•	•	•	•	92
▲ Pioneer A-400X	300	G+ Now firmly in production and thoroughly retested, this erstwhile Best Buy was tonally unchanged but less compelling on audition	67	5	•	•	•	•	•	•	•	138
Pioneer A-503R	300	A- At its best via MM disc, the dull and claustrophobic sound of this remote-controlled amp is otherwise deeply uninspiring.	75	6	•	•	•	•	•	•	•	138
▲ QED A270CD/PA	370	G+ Recent updates have bolstered the output of the A270 without adding to its colorations. The PA phono option is a touch expensive	61	5	•	•	•	•	•	•	•	97
▲ QED C300/P300	630	G A cost-effective combo, limited in its resolution but less beguiling as a result. Disc stage is sweeter but samey	58	3	•	•	•	•	•	•	•	85
Quad 34	398	A Well-built durable preamp, filtering and above average tone controls but was found lacking in sound quality (viz: detail/dynamics)	4	•	•	•	•	•	•	•	•	44
Quad 66/606	1553	G Amplifiers with a classic lineage but compromised by an equally dated, soft and undynamic sound.	138	6	•	•	•	•	•	•	•	124
Rega Elex	359	A Minimalist amplifier that sounds too forward, hard and unforgiving for its own good. Shows plenty of promise, however.	51	4	•	•	•	•	•	•	•	116
▲ Rose RV-23	450	G+ Beautifully built British 'hybrid'. You can spend more to get a more transparent sound but it's hard to criticise at the price	3	•	•	•	•	•	•	•	•	77
▲▲ Rotel RA-930BX	200	VG A gilded version of the classic RA-930AX with a dark and luxurious sound that's reminiscent of Rotel's heyday.	50	4	•	•	•	•	•	•	•	134
▲ Rotel RA-935BX	225	G A line only winner that lets a lot of music through and never lets things get out of hand. Could be a touch more enthusiastic	58	5	•	•	•	•	•	•	•	121
▲ Rotel RA-970BX	300	G Sounds lively, fresh and perky with plenty of power to manhandle tricky speakers. Not so clever with complex recordings however.	99	6	•	•	•	•	•	•	•	138
Rotel RC-980BX/RB-980BX	800	A Plenty of watts per pound, sound is expansive but lacks a sense of poise, of control and fine detail - a disappointment	143	5	•	•	•	•	•	•	•	109
Rotel RA-980BX	425	A This integrated version of the 980BX pre/power is certainly very powerful but also lacks poise and subtlety	139	5	•	•	•	•	•	•	•	129
▲▲ Sansui AUX-417R	280	G+ Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	•	•	121
Sherwood AI-2210	80	P Lightweight in all respects this is better than you'd find on a midi and at least its reasonably painless.	47	4	•	•	•	•	•	•	•	121
Sonic Frontiers SFC-1	1500	G+ Smooth, sophisticated Canadian valve amp with a decent direct input and more features than average	54	6	•	•	•	•	•	•	•	126
Sugden A21a	469	G The modern-day relative of Sugden's original Class A amp and one that offers a smooth, easy-going sound.	25	•	•	•	•	•	•	•	•	92
Technics SU-A800mk2	350	A A quick audition might convince you the '800mk2 is something special, but longer term listening shows it's little but bluff.	79	5	•	•	•	•	•	•	•	134
▲ Technics SU-A900mk2	400	G+ A Jeckyl and Hyde amplifier with a dismal-sounding phono stage but delightfully transparent and engaging CD input.	117	5	•	•	•	•	•	•	•	138
Woodside ISA230	900	A Smooth and inoffensive valve amplifier if one that lacks the sparkle and euphony required for a truly entertaining sound.	27	5	•	•	•	•	•	•	•	116
Woodside SC26/STA35	3254	G+ Synergistic pairing with a cool, controlled sound, good focus and transparency. More about poise than grunt	35	5	•	•	•	•	•	•	•	100
YBA Integre	1199	G+ Audiophile spec French integrated with good resolution and nice phono stage.	57	4	•	•	•	•	•	•	•	121
▲ YBA 1 pre/power amp	8000	E Well finished pre/power amp offers front rank stereo staging and transparency, and is capable of driving the most difficult loads	85	5	•	•	•	•	•	•	•	62
▲ YBA 2 pre/power amp	3849	G+ Superbly finished with very good space and transparency, slightly softened bass. Needs transformer for MC cartridges	70	5	•	•	•	•	•	•	•	56
YBA 3 pre/power amp	2449	G This duo produced see-through, ethereal stereo images that were more convincing towards the centre of the soundstage	56	4	•	•	•	•	•	•	•	72



AV amplifiers

In practice an A/V amplifier provides all the standard CD, tuner, tape, aux and phono inputs offered by a standard stereo amplifier. In addition many also incorporate an AM/FM tuner section, making them A/V receivers.

More importantly a modern A/V amplifier includes a Dolby Pro Logic decoding chip along with extra circuitry to effect the rear channel delay. Naturally there's at least four channel's worth of amplification under the bonnet to feed the five loudspeaker outputs (Front L and R, Centre and

Rear mono L+R).

Some A/V amps offer other surround modes like simulated stereo, Hall surround (L+R is fed to the rear) and Matrix surround (L-R is fed to the rear). Others use an element of Digital Signal Processing (DSP) to steer the Dolby Pro-Logic or permit a variable rear channel delay. Some also include DSP options like Jazz, Church, Hall and Stadium modes which use different delay and steering levels to generate different 'sound fields'.

From left to right the headings below indicate

how many watts per channel each amp has for its front, centre and surround outputs.

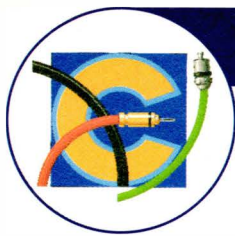
Surround modes indicates how many different surround effects are available and includes DSP. The audio inputs are for both hi-fi and AV components. S-type and phono video inputs are for VCRs, Laserdisc players and CTVs, S-type being the better of the two.

Subwoofer outputs are of the phono socket variety for active subs, and AM/FM tuner denotes if the unit is effectively a receiver.

▲▲ Best Buy

AV amplifiers

Product	£Price	Comments	Surround output W/8Ω	Centre output W/8Ω	Front output W/8Ω	Surround modes	Video inputs	Audio inputs	Video inputs S-type	Subwoofer output	AM/FM tuner	Issue No.
Denon AVC-3530	999	VG A true heavyweight with a richly detailed sound and flexible features to match	142	141	46	10	9	5	5	•	•	125
Harman Kardon AVR30	999	G+ Limited surround options are offset by a very secure sound with excellent control over effects.	74	75	30	7	10	6	0	•	•	125
Kenwood KA-V8500	699	G- Can sound a tad forced and immediate but is remarkably well-equipped with digital soundfield options.	62	63	37	10	11	6	5	•	•	125
Marantz PM-700AV	450	A+ Sounds just great through front and centre channels but surround is very weak.	69	52	51	3	7	6	3	•	•	125
Philips FR940	450	A- Perhaps as a result of the mismatch between front/centre channels, the FR940 proved a great disappointment on dem.	180	24	24	6	8	4	0	•	•	125
Pioneer VSA-D802S	600	A- The disappointingly grey sound lacks attack and confidence, undermining the tension of movie soundtracks.	53	55	32	9	9	5	3	•	•	125
Yamaha DSP-A2070	1100	G+ The ultimate in A/V flexibility with full manual control over ever conceivable soundfield.	101	99	35	24	10	6	6	•	•	125



Cables

Cables are not accessories but an integral part of your system. You can make do without accessories but no conventional system will function without cables. Inevitably some cables are greater than others. The best cable for your system will only be found through trial and error, but hopefully by combining our recommendations with those of a dealer you will end up with something that suits both your pocket and your system. Generally speaking budget to spend about ten per cent of the total system cost on cables.

▲▲ **Best Buy**

Analogue interconnects are the leads that

connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one metre terminated pair. Symmetrical indicates where a twisted pair of conductors are used.

Coaxial means that there is a central 'hot' conductor and a shield that carries the negative signal. Stranded cables have multiple strands and solid core use individually insulated strand(s). Copper and silver indicates whether these metals are used as conductors.

Digital interconnects connect CD transports to

DACs, and are traditionally coaxial with a 75ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass and the latter in coaxial or alternative configurations. The prices shown are for a terminated linear metre

Speaker cables are used between the amplifier and speaker. Our prices are for a terminated 5metre pair. Resistance and capacitance are indicated as low (L), medium (M) or high (H). Neither high resistance nor high capacitance cables are suitable for long runs.

Analogue interconnects

Product	£Price	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Silver	Issue No.
Audio Note AN-A	29.50	A- A well-rounded and cuddly sound from a high-ish resistance interconnect. Lacks a sense of scale and dynamics	•			•			108
Audioquest Ruby Hyperlitz	70	A+ A crisp, fast and articulate-sounding cable if one that's a little too pointed for our listeners	•				•	•	108
▲ Audioquest Lapis Hyperlitz	329	E An expensive cable that justifies its tag with a beautifully poised sound - natural, relaxed and very compatible.	•				•	•	108
Audio Technica AT620	28	A Plenty of cable for the money but its performance is distinctly lightweight, lacking depth and subtlety			•			•	108
Chord Chameleon	59	A+ An unpredictable cable with an 'anomalous treble' that can sound harsh one moment and oddly recessed the next!			•			•	108
▲ Chord Solid	115	VG What looks like a military RF cable actually provides a slightly forward but incisive and intimately detailed performance			•		•	•	108
▲ Cogan-Hall Intermezzo Ref	185	E A user-hostile cable with a tight, convincing bass allied to a very relaxed and involving mid/treble.	•				•	•	108
Cogan Hall Intermezzo E-M	320	G+ This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser	•				•	•	108
▲▲ DNM Interconnect	40	VG Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners	•				•	•	108
Goldring 'Studio Quality'	20	A- A bog-standard OFC coaxial cable that might otherwise be given away with a new amp or CD player. Cheap but nothing special.			•			•	108
▲ Isoda Electric HA-08-PSR	199	G+ This odd-ball cables utilises a mix of copper, brass and aluminium strands to achieve a very distinct sound	•				•	•	108
▲ Madrigal HPC	215	VG A very unusual cable design with a business-like approach to music-making that barely conceals its underlying 'fizz'.	•				•	•	108
Magnan Type Vi	595	A+ With a series resistance some 500-1000 times higher than average, the furry sound of the Type Vi will alter from system to system.			•			•	108
▲ Monster Interlink 500	60	G+ Plenty of hype to keep the marketing bandwagon rolling plus a lively and lucid balance to cheer up the enthusiast	•				•	•	108
▲ Moth Ley Line Black	100	G+ The cheapest of Moth's Ley Line series uses just two twisted conductors to achieve a very solid and confident sound.	•				•	•	108
Moth Ley Line Grey	200	G+ The four twisted conductors of this cable actually mark a downturn in audio quality	•				•	•	108
▲ Panasonic RP-CA910	50	G This conventional coax employs plenty of hi-tech materials which encourage an even-handed balance. A good upgrade.			•			•	108
▲ Silver Sounds 12/2 and 12/3	99/150	VG Both these cables share a similarly open, transparent and dynamic sound though the latter is arguably the better integrated	•				•	•	108
Sonic Link Yellow	60	A An interesting non-copper cable with an up-front sounded described as 'heavy-handed and pushy'.			•			•	108
▲ Sonic Link Violet	99	G+ Another nickel-based cable but with a very much better-balanced sound than Sonic Link Yellow	•				•	•	108
Straight Wire Laser Link	50	A+ Thanks to its high parallel capacitance this interconnect helps remove ultrasonic noise. Unfortunately it still sounds very odd!	•				•	•	108
Straight Wire LSI-Encore	90	A+ A solid-sounding cable with a strong mid and bass but a disappointingly sat-upon treble	•				•	•	108
▲ Tara Labs Prism	36	G 6N-purity copper, aero-grade insulation and spaced solid-core conductors all add-up to a slightly bright but frisky sound	•				•	•	108
▲▲ Tara Labs Quantum CD	63	G+ Praised by our panel for its lack of obvious vices, Quantum CD encourages a sweet and positive sound.	•				•	•	108
Tara Labs Quantum II	99	G Bass power and extension is the key to the sound of this unusual and hi-tech cable	•				•	•	108
▲ van den Hul The Source	70	G+ Accurately reflects the life of the music without detail forcibly from the speakers			•			•	108
van den Hul MC D-102mKIII S	80	A+ A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble	•				•	•	108



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 Audio Alchemy, Fyneon, Gralla,
 Musical Fidelity, Microsonic, Kinsman,
 QED, Marconi, Sordani, DEAC.

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Digital interconnects

Product	£Price	Comments	Type	Plastic	Glass	Non-coaxial Coaxial	75-Ω	Issue No.
▲▲ Audioquest Video Z	50	F The very best available with an expressive sound but generous price to sweeten the pill	Electrical			•	•	108
Audioquest Digital PRO	90	A+ A silver cable with all the drive of Video Z but lacking its clean-cut transparency	Electrical			•	•	108
Audioquest Optilink Z	100	A Good level of midband detail but frequency extremes lack depth and extension	Optical			•		108
Bandridge AL560	20	P The disappointingly heavy and muddled sound of this basic fibre thwarts any recommendation	Optical	•				108
Chord Codac	34	A A connection with a stranded inner core and a sound that lacks integration	Electrical			•	•	108
▲▲ DPA Digi-link	27.50	VG Can seem slightly impassive but there's no avoiding its exceptionally detailed sound	Electrical			•	•	108
DPA Opti-link	20	P Very similar to Bandridge AL560 with an equally naff sound	Optical	•				108
Kimber PSB Digilink	24	A- An analogue interconnect inappropriately pressed into digital service. A visible deterioration in the digital signal results.	Electrical				•	108
Kimber KC-1 Digilink	52	A This cable adopts a woven construction with the addition of a conductive screen. Music lacks detail and spirit.	Electrical				•	108
Kimber KC-AG Digilink	222	A- An asymmetric cable using silver conductors that deviates from the 75ohm standard. Not ideal for digital applications.	Electrical				•	108
▲ Kimber Opti-Link	70	G Hardly cheap for what appears to be a bog-standard PMMA fibre, yet it sounds a little brighter and livelier than most.	Optical	•				108
▲ Monster Cable Datalink 100	45	G+ A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible.	Electrical			•	•	108
▲ Monster Cable Interlink LS100	45	G Well constructed stepped-index fibre with polished ends and rugged connectors. Slightly lean, fuzzy but engaging performance	Optical	•				108
Moth Leyline Datalink	140	A- A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive.	Electrical			•	•	108
▲▲ QED Digiflex	19	VG A top performance, low-loss 75ohm coax with a very open, almost liquid quality that allows its music to ease naturally across.	Electrical			•	•	108
Sonic Link Brown Digital	35	A- A solid-core, twisted-pair interconnect that deviates from the 75ohm standard and provides an equally unbalanced sound	Electrical				•	108
Straight Wire Silver link	60	G+ A genuine attempt to get things right with a silver-plated, multi-strand coax. Yet it still sounds too dry and mechanical	Electrical			•	•	108
▲ van den Hul MC Videolink 75	30	VG An AV-cum-digital cable that comes very close to besting QED's Digiflex. Still some emphasis of vocal sibilants, however	Electrical			•	•	108

Speaker cables

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper	Silver	Issue No.
▲ Audio Note AN-B	165	G+ A very high capacitance Litz-style cable whose sound may well act as a taming influence in many systems	M	H		•	•		109
Audio Note AN-D	100	A Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather gritty and forward	L	L	•			•	109
▲ Audio Note AN-SP	1270	VG Some 15 individually-insulated silver strands go to make up this very civilised but exceptionally detailed-sounding cable	H	L		•		•	109
▲ Audioquest F-14	44.50	A+ Ideal for laying flat under carpets, F-14 encourages a slightly warm and vibrant sound	M	L		•	•		109
Audioquest Type 4	75	A+ Four 18-gauge OFHC copper conductors wound in a Litz-fashion increases capacitance but restrain the cable's 'bite'	M	H		•	•		109
Audioquest Midnight Hyperlitz	260	G Very similar to Type 4 but with a delicate smoothness that contrasts with the brighter sound of cheap cables	L	H		•	•		109
▲ Bandridge LC7259 & LC7401	20/30	A Two very traditional figure-of-eight cables. The thinner version (LC7259) sounds lighter and coarser than LC7401	L	L	•			•	109
Bandridge LC8258 & LC8408	30/50	A- Two versions of the Silverflex series that, sadly, encourage very little sense of poise or decorum in their music	L	L	•			•	109
▲ Cogan-Hall Intermezzo Full-Range	465	VG Extra care must be taken to prevent shorting this user-hostile cable. Nevertheless it sounds superb!	L	L		•	•		109
▲ DPA IS19	275	G+ Shares the clear, neutral and transparent sound of the older 8S without the tremendous clarity of Gortex Black-16	L	L		•	•	•	109
▲▲ DNM Rainbow	84	A+ The high impedance of this simple ribbon cable has an influence on the treble response of some speakers. Lacks 'oomph'	H	L		•	•		109
Heybrook Heywire	66	A This well-meaning facsimile of earlier ribbon-style cables ends up sounding lumpy and uneven	H	L		•	•		109
Isoda Electric HA-20	400	A+ This unorthodox cable employs a combination of copper, brass and aluminium strands. It sounds 'oddly impure'!	M	L	•			•	109
▲▲ Mission Stranded	20	G+ This Swedish-made cable proved a real hit with our listeners - a slick performer and Best Buy upgrade	L	M	•			•	109
Monitor PC KC27/KC34	40/60	A Two heavyweight multi-strand cables with a thick and chesty (10027) or light and wispy (10034) balance. Take your pick	L	L	•			•	109
Monster Powerline 3 Plus	75	A- The archetypal 'old-style Monster Cable' that labours under a soggy bass and untidy treble	L	M	•			•	109
Naim NAC A5	44	A- Described as a 'dinosaur of a cable' by our listening panel, this stiff rod of wire has little application outside of a Naim system	L	L	•			•	109
QED Bi-wire 79-Strand	35	A Reminiscent of curtain track, this bi-wire version of 79-strand is unfortunately saddled with a 'loud, hard and untidy' balance	L	L	•			•	109
▲ Silver Sounds 12/2	300	F Tonally accurate and exquisitely detailed, this cable opens a very transparent window on the music	L	H		•	•	•	109
▲ Silver Sounds 16/4	200	VG A prime choice for bi-wire systems even if this cable does lack the full finesse of its sister 12/2	M	H		•	•	•	109
Sonic Link Grey	80	G- A spaghetti-thin cable composed of silver-plated OF-copper and PTFE insulation. Lacks bass impact and treble 'air'.	H	M		•	•	•	109
▲ Straight Wire Waveguide 1.5	20	G A conventional multi-stranded cable with a refreshingly up-beat, crisp but slightly lean-sounding balance	M	M	•			•	109
▲ Straight Wire Flex-4	50	G+ Another very quick and dynamic-sounding cable from Straight Wire. A little short on subtlety but very engaging nonetheless.	L	H	•			•	109
Tara Labs Quantum III	238	G An imaginatively-named cable that encourages an equally colourful sound. Described as 'dark and fruity' by our panel!	L	H		•		•	109
van den Hul MC The Clearwater	50	A Despite its evocative title, the Clearwater turns out to be a disappointingly 'murky sounding' cable	M	L	•			•	109
van den Hul MC The Magnum	265	A Touted as vdH's most prestigious twinlead speaker cable, the Magnum sounds surprisingly soft and old-fashioned	L	L	•			•	109
▲ van den Hul MC The Wind	330	VG Blown-in from the continent, vdH's 'Wind' kicks up a storm with its lush midrange and bone-crunching bass!	L	M	•			•	109

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Cassette decks

The bad odour of copyright theft hangs around the compact cassette, but there is no doubt it is the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but are happy to use cassette decks to make up tapes for the car or personal.

There is no problem in connecting a cassette deck to any normal amplifier, but some care needs to be taken in choosing the best tapes for a specific machine. (Trial and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape automatically.) Lab

performance and sound quality often go hand in hand, and are frequently somewhat dependent upon factory alignment. The mechanical integrity of the mechanism is another crucial factor, that is reflected in the price.

The columns on the right indicate when the facilities shown in the headings are available on a deck. Dolby B and C offer varying degrees of noise reduction and the HX Pro system gives significant treble improvements with ferric (Type I) tapes. Dolby S increases the level of noise reduction with less signal degradation than B or C. Three-head

recorders allow you to listen to a recording as it's being made, a useful quality control function. Bias adjustment allows you to fine tune the deck to suit different types of tape when recording. Auto calibration is an automatic system for setting bias and Dolby levels.

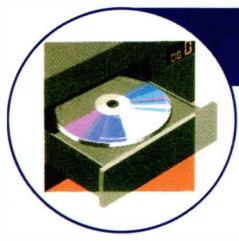
Twin deck offers the option to dub tapes or to play two cassettes simultaneously. Autoreverse is a useful convenience feature, but usually with some mechanical compromise. In the case of twin decks a blob is inserted in this column even if only one transport autoreverses.

▲▲ Best Buy

Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Bias adjust	Auto calibration	Twin deck	Autoreverse	Issue No.
▲▲ Aiwa AD-F450	120	VG Basic but well designed budget deck; astonishing value, only the poor metering gives the game away	•	•	•							136
▲▲ Aiwa AD-F810	230	G First class budget 3-head machine with a dual capstan transport that really works at reducing the 'fudge' factor	•	•	•							99
▲▲ Aiwa AD-WX828	200	G- Equipment levels strong, and sound is both vivid and presentable, but control system daunting.	•	•	•						•	123
▲▲ Aiwa AD-WX929	230	A Superbly equipped twin deck that works and works well - remote control	•	•	•	•					•	117
▲ Aiwa XK-S9000	700	G+ Fabulous build, clunky transport and sharp, refined sound quality with Dolby S or B and metal tapes	•	•	•	•	•	•	•			105
Akai DX-57	220	G Eschews fancy gadgets for a good transport and decent electronics. Sound quality is firm and tidy but avoid Dolby C.	•	•	•	•	•	•	•			105
▲ Akai GX-95II	440	G+ Sharp, clear and articulate sounding deck, with superb performance extending to frequency extremes	•	•	•	•	•	•	•		•	99
Akai GX-R35	220	A Middling sound quality at best with Dolby B; deteriorates with Dolby C	•	•	•	•	•	•	•			99
▲ Akai GX-W45	320	A Costly but musical high-spec dual deck, doesn't like modern high energy Type IIs and IVs. Good stability and clarity	•	•	•	•					•	111
▲ Arcam Delta 100	850	E Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•	•	•	•	•	•		•	111
Denon DRM-740	260	A Breathed-on DRM-710, with good external treatment offers good, if somewhat detached sonics	•	•	•	•	•	•	•			136
▲ Denon DRS-610	200	G Unique loading mechanism provides stability, and the deck has a crisp, clean quality. Occasionally anaemic bass.	•	•	•	•					•	111
Denon DRS-810	300	G- Drawer loading deck, carefully designed, yet lacking in subtlety on audition.	•	•	•	•				•	•	127
Goodmans Delta 700W	100	P Compact and ultra-basic twin deck which is rough and bass shy, with less than stable tape path.	•								•	123
Harman/Kardon DC5500	600	A Workmanlike sound quality offset by high price and inexplicable shortcomings like 'forgetful' Dolby switching and no timer support.	•	•	•	•					•	117
▲ Harman/Kardon TD4400	350	G Simple features plus excellent engineering make this a model of integrity.	•	•	•	•				•		127
Harman/Kardon TD4600	700	A Original Dolby S deck has improved over the years and now sounds very acceptable. A strong, solid sounding deck - but expensive.	•	•	•	•						117
JVC TD-R452	180	A- Tidy, stable but ultimately rather soul-less experience. Auto-reverse is useful though.	•	•	•	•					•	117
JVC TD-X352	150	A- Disappointingly amorphous sound despite decent measured results.	•	•	•	•				•		117
▲ JVC TD-V562	200	G+ Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque.	•	•	•	•	•	•	•			123
▲ Kenwood KX-3050	170	A Acceptable sound quality marred only by a loss of midband analysis and slightly edgy treble.	•	•	•	•						117
Kenwood KX-5530	220	A- Neat looking, well equipped deck, adequately engineered but somewhat lacking musically. Worth considering if auto-reverse is a must	•	•	•	•					•	105
▲ Kenwood KX-7050S	400	VG Very well equipped and fine sounding deck, includes well implemented Dolby S.	•	•	•	•	•	•	•			127
NAD 602	200	G Minimalist deck for the audiophile market. Unfortunately engineering is minimalist too	•	•	•	•						127
▲ Nakamichi DR-3	400	VG Refined, exquisitely detailed and solid sounding 'budget' Nakamichi 2-header.	•	•	•	•					•	123
▲▲ Nakamichi DR-2	600	VG Accomplished design with simple features (manual tape select!) but superb sound/serviceability.	•	•	•	•				•	•	127
▲ Nakamichi DR-1	850	VG Typically idiosyncratic Nakamichi with manual everything, Good azimuth adjustment and dynamic, authoritative sound.	•	•	•	•						117
Philips DCC600	500	A+ Simplified circuit and mechanism, but the Philips badly needs a D/A converter transplant	•	•	•	•					•	123
▲ Pioneer CT-S430S	200	VG Against the odds - a 2 head Dolby S deck that works. Well set up and fully equipped.	•	•	•	•	•	•	•		•	136
▲ Pioneer CT-S520	280	G Decent if slightly coloured middle ranker with FLEX to revitalise old or soggy sounding tapes.	•	•	•	•				•	•	123
Sansui D-X117WR	220	P Bass is thin and coloured, and the sound lacks dynamics, pitch accuracy and overall stability - the sound is neither stable nor solid.	•	•	•	•					•	111
Sherwood DD-3010C	120	P Good range of features, let down by poor transport and iffy electronics.	•	•	•	•					•	117
Sony TC-K415	180	A+ Mainly UK designed with audiophile intent, but spoiled by erratic output, at worst with metal tapes.	•	•	•	•				•	•	136
▲▲ Sony (WMD6C) Pro Walkman	290	G+ One of the finest sounding cassette decks on the market today. A mandatory Best Buy, which also fits in your pocket	•	•	•	•						60
▲ Sony TC-K611S	300	G Cheapest Dolby S three header yet, yet slightly let down by lack of attention to detail	•	•	•	•	•	•	•			127
Teac R-9000	500	G Much better than average auto-reverse deck, well worth considering. Nicely engineered too.	•	•	•	•	•	•	•		•	105
▲ Teac V-8000S	700	G Superb stability and real subtlety, this must be the best TEAC yet. The only disappointment was the Dolby C	•	•	•	•					•	105
▲ Technics RS-BX646	230	G+ Unusually well built and non-microphonic deck with sophisticated facilities and lucid midband.	•	•	•	•	•	•	•			127
▲ Technics RS-BX701	270	G+ Not cheap, but extremely well built deck, moderately well equipped a pleasure to operate and to listen to.	•	•	•	•	•	•	•			136
▲ Yamaha KX-650	260	G Fine audio manners, especially in the midband and treble, mark this high class deck out from the crowd	•	•	•	•					•	99

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CD players

Now over a decade old, this all digital music source is well established despite high disc prices and the opposition of some hi-fi enthusiasts. Compact Disc's strengths over conventional vinyl are complete freedom from surface noise, ease of use, and more robust software.

However, many vinyl enthusiasts still find CDs sound less involving than top quality vinyl. But, with the dominance of CD in the high street, even vinyl die-hards need a CD player today.

The columns on the right indicate when the facilities shown in the headings are available on a CD player: DAC type indicates the type of converter chip used in each player, 16, 18 and 20-bit are multi-bit types, all the others are bitstream variants. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound, but it is an important one. Remote control is not yet universal, and we have included a tick box, more to show which machines don't have

one than which do. The existence of electrical and/or optical digital outputs is important for future upgrading with an outboard DAC, as a rule electrical outputs are the most desirable. Phase inversion in the digital domain is rare on one box players but can make quite a big difference if you've got golden ears. Headphone sockets are useful but beware of those without volume controls. Track entry keypads are those with calculator style buttons which makes track access much quicker.

▲▲ Best Buy

CD players

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Variable output	Headphone socket	Track entry keypad	Issue No.
Aiwa XC-750	200	A refined version of the XC-700, sadly it has lost the magic of the original	PDM Bitstrm	•	•	•	•	•	119
▲ AMC CD6	349	G+ Based on the same 1-Bit circuit as Rotel's RCD-965BX but with a raunchier, beefier but less transparent sound.	PDM Bitstrm	•	•	•	•	•	124
Arcam Alpha One	300	A+ The first UK-built player under £300 is hampered by a tidy but rather grey and uninspiring sound.	PWM bitstrm	•	•	•	•	•	137
Arcam Delta 270	800	G+ The dry but tightly-focussed and supremely detailed sound of this player will either beguile or aggravate, depending on taste!	Hybrid	•	•	•	•	•	124
Aura CD-50	400	G- Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•	•	•	•	119
AVI S2000MC	999	G+ A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•	•	•	•	119
▲ Denon DCD-615	180	G Builds upon the smooth and composed sound of the DCD-595 while offering extra widgets at no extra cost.	18-bit	•	•	•	•	•	139
▲ Denon DCD-825	220	G Despite extensive revisions, this latest player still sounds like a typical '18-bit Denon', which is no bad thing!	18-bit	•	•	•	•	•	137
Denon DCD-1290	330	G- Looks the business but sound is a real five-minute wonder. Its compelling fizz lasts about as long as a firework.	18-bit	•	•	•	•	•	107
Dual CD1001RC	180	A- This Yamaha-based CD player is compromised by a number of technical flaws and a fundamental lack of bass.	PDM Bitstrm	•	•	•	•	•	139
▲ Goodmans Delta 700	110	A+ A 16-bit alternative to the CD650II that furnishes a colourful and animated sound	16-bit	•	•	•	•	•	128
Grundig Fine Arts CD2	190	A- A stylish-looking player with a disappointingly vague approach to music-making	SAA7350	•	•	•	•	•	128
▲ Harman Kardon HK7725	800	VG This flagship implementation of RLS sounds impressively bold and dynamic - a genuine rock 'n roller!	18-bit RLS	•	•	•	•	•	124
▲ Harman Kardon TL8600	700	G+ A refined and more flexible version of the TL8500 multiplayer with a significantly more expressive sound	MASH/PWM	•	•	•	•	•	132
JVC XL-V274	160	A This appears to be a re-badged version of JVC's XL-V264, retaining an over-heavy bass and generally gaudy sound.	PEM Bitstrm	•	•	•	•	•	139
JVC XL-Z1050	500	A Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM Bitstrm	•	•	•	•	•	119
▲▲ Kenwood DP-3060	200	G+ Based on the same filter/DAC as Marantz' CD-53 but with a more transparent, sober and highly insightful sound.	NPC bitstrm	•	•	•	•	•	139
▲ Linn Karik	1497	VG Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•	•	•	•	119
▲ Marantz CD-53	200	G Looks identical to the CD-63 but component costs are cut inside, exposing a slightly ragged but enthusiastic performer.	NPC bitstrm	•	•	•	•	•	139
▲ Marantz CD-63	250	VG New technology has enabled Marantz to steal a march on its old CD-52 series and, once again, regain the upper hand.	NPC bitstrm	•	•	•	•	•	137
▲ Marantz CD-52IISE	300	G A new mains transformer plus the full complement of internal mods has recaptured the frothy if startling sound of the original '52	PDM Bitstrm	•	•	•	•	•	119
Marantz CD-72SE	600	G+ A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	112
NAD 501	180	G- A thoroughly typical frill-free player but with a slightly too cautious, even restrained musical outlook.	SAA7323	•	•	•	•	•	139
▲ NAD 502	220	G This updated version of the 5425 has traded the spontaneity of its forebear for a more precise but mechanical style of music	MASH/PWM	•	•	•	•	•	119
Nakamichi CD-4	380	A- This looks new enough but sounds little better than the older CD Player 4 upon which it is firmly based.	18-bit	•	•	•	•	•	124
▲ Nakamichi MB-4s	300	G Entry-level MusicBank player that sounds like it's come from a studio control room: plenty of dynamics and detail but little stereo depth	16-bit	•	•	•	•	•	132
Onkyo DX-C110	350	G- A big and beefy 6-disc carousel that strides confidently through rock and pussyfoots around gentle ballads	Bitstream	•	•	•	•	•	132
▲ Philips CD732	140	A+ A cross between Philips CD690 and CD920 is no more technically accomplished but encourages a very lively and entertaining sound	SAA7341	•	•	•	•	•	128
Philips CD740	170	A One of several Philips players using a hybrid of DAC technologies. Still sounds insufferably boring, however.	Hybrid	•	•	•	•	•	139
Philips CD750	200	A+ The costliest player in Philips range and the last to use its BS DAC lacks a sense of integration and stereo focus.	PDM Bitstrm	•	•	•	•	•	137
Pioneer PD-S503	200	A The cheapest Legato Link player yet but another that sounds unpredictable and generally hard work.	PFM Bitstrm	•	•	•	•	•	139
▲ Pioneer PD-S703	300	G+ Legato Link and bitstream are combined into a cheaper IC though the player sounds as manipulative and intriguing as ever.	PFM bitstrm	•	•	•	•	•	137
▲ Pioneer PD-S901	500	G+ The very refined but confident, crisp and powerful sound of the '901 snatches Pioneer's LLC concept from the jaws of defeat	PFM Bitstrm	•	•	•	•	•	119
▲▲ Quad 67	790	E Deceptively sleek in appearance but with a powerful, fluid and captivating sound reminiscent of Meridian's 206.	Crystal BS	•	•	•	•	•	124
Rotel RCD-940BX	230	A- A sea-change in transport and DAC technology lies behind the most untidy-sounding and irritating player to emerge from Rotel.	Hybrid	•	•	•	•	•	137
▲ Rotel RCD-945AX	230	G Based on the same CD-player-on-a-chip as Philips CD690 but with improved execution and build.	SAA7341	•	•	•	•	•	124
▲▲ Rotel RCD-965BX	300	E An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	PDM Bitstrm	•	•	•	•	•	100
Sansui CD-X317	250	A Not in the same class as older CD-X311mkII. Same technology but the sound is neither as responsive or engaging	MASH/PWM	•	•	•	•	•	107
Sansui CD-X617	350	A This 'double-DAC' version of the CD-X317 is more impressive, sounding light and tizzy with pop but dull with classical CD's	MASH/PWM	•	•	•	•	•	112
Sansui CD-Alpha 717DR	1560	G+ A beautifully constructed if rather dated flagship player with an equally sedate and unadventurous sound.	MASH/PWM	•	•	•	•	•	124
▲ Sherwood CD-3020R	130	G Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	119
▲ Sherwood CD-5010R	160	G+ A warm, detailed and enjoyable performance from a solidly built but affordable package.	PDM Bitstrm	•	•	•	•	•	124
Sherwood CDC-5030R	200	A- The replacement for the successful 5-disc CDC-5010R sounds messy, disjointed and generally unpleasant. A great disappointment	Bitstream	•	•	•	•	•	132
Sony CDP-312	150	G Something of a rough diamond, offering a raft of features and good build but a decidedly technicolour sound.	PLM bitstrm	•	•	•	•	•	139
Sony CDP-C345	230	A+ Sony's Hybrid Pulse DAC sounds great in the CDP-311 but in this 5-disc carousel it provides a mere skeleton of a performance	PLM Bitstrm	•	•	•	•	•	132
▲▲ Sony CDP-715E	250	E Advanced Pulse technology collides with UK tweaking to produce one of the most fabulous CD players in recent memory.	PLM bitstrm	•	•	•	•	•	137
Sugden SDT-1	850	A Bearing in mind Sugden's SDA-1 converter lies at the heart of this player, its unpredictable performance is disappointing	16-bit	•	•	•	•	•	119
Teac CD-P3500	200	A A well-meaning attempt to pare-down the CD-P4500 results in a similar looking player with a thoroughly uninspiring sound	PDM Bitstrm	•	•	•	•	•	112

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CD players continued

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Track entry keypad	Headphone socket	Variable output	Remote control	Issue No.
▲ Teac CD-P4500	280	G TEAC's first genuine 1-bit player its sound described as having a certain 'organic warmth', very composed and easy-going.	PDM Bitstrm	•	•	•	•	•	•	107
Teac VRDS-10	770	A+ A basic analogue stage compromises the potential of TEAC's superb engineering and digital electronics. Lacks bass energy	DAC7	•	•	•	•	•	•	119
Technics SL-PG460A	160	A Sadly this player lacks the fire of Technics' earlier budget wonders. It looks similar but sounds terribly apathetic.	MASH/PWM	•	•	•	•	•	•	139
▲ Technics SL-PG440A	170	G This mix of the SL-PG520 and '420 fails to benefit from the strengths of either and only just achieves recommendation.	MASH/PWM	•	•	•	•	•	•	124
▲▲ Technics SL-PS620A	200	G+ A costlier, tarted-up version of the SL-PG520A that loses very little in the way of clarity, sparkle or in compelling dynamics	MASH/PWM	•	•	•	•	•	•	112
Technics SL-PS740A	250	A Nothing wrong with its technical heritage but Technics' ongoing 'improvements' only serve to stifle the sound of this player.	MASH/PWM	•	•	•	•	•	•	137
Yamaha CDX-670	290	G- Yamaha has retained the CDX-660 casework but cut costs with a new multi-task IC that's not entirely de-bugged.	PDM Bitstrm	•	•	•	•	•	•	124



CD transports and DACs

A CD player can be split into two basic components; the disc drive or transport, and a device which turns the digital bitstream coming off the disc into an analogue audio signal. This is called a digital to analogue convertor or DAC. Although most players are contained in a single box, expensive players are usually two box affairs.

Although many of these units will be purchased as matching pairs, a DAC can also be

used to upgrade an existing CD player. Thus an early machine with a satisfactory transport can be rejuvenated by adding an outboard DAC.

The columns on the right indicate the facilities available on a transport or DAC. Remote control is self explanatory. The existence of electrical and/or optical digital in and outputs is pretty fundamental to transports and DACs, as a rule electrical outputs are the most desirable. Class 1 transports are those with an output whose crystal clock accuracy that's

better than ± 50ppm (parts per million), certain DACs won't lock onto transports with a lower clock accuracy. DAC type shows the specific convertor chip employed. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound. Phase inversion in the digital domain can make quite a big difference if you've got a high resolution system and golden ears.

▲▲ **Best Buy**

CD transports

Product	£Price	Comments	Electrical digital output	Optical digital output	Class 1	Issue No.
▲ Arcam Delta 250	750	G+ Arcam's best effort yet is a new design based on the Philips CDM9 transport; specification includes Sync Lock facility.	•	•	•	130
▲ Counterpoint DA-11E	1495	VG By rights this transport should be highly incompatible yet it delivers a remarkably vivid and natural sound.	•	•	•	130
▲ Meridian 200	895	G+ Broadly compatible and offering a light, fresh and very bubbly sound that is both natural, engaging and unfatiguing	•	•	•	96
TEAC P-2	3500	G Beautifully styled and constructed but sound is bleached and generally less inspiring than that of the P-10	•	•	•	96
TEAC P-2s	4300	A The latest version of Teac's luxury P-2 transport sounds as over-engineered as it looks.	•	•	•	130
▲ Theta Data Basic	1990	G+ A mild-mannered transport capable of marvellous results with lively-sounding outboard converters.	•	•	•	130
Wadia 8	3195	G Includes a budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer.	•	•	•	130

DACs

Product	£Price	Comments	DAC type	Electrical dig output	Optical digital output	Phase invert	Issue No.
▲▲ Arcam Black Box 50	450	VG A very measured and sophisticated sound from a DAC that leaves plenty in reserve to accommodate future upgrades.	Hybrid	•	•	•	127
Arcam Delta Black Box 500	750	A+ A very sophisticated unit equipped with Sync Lock and discrete DAC circuitry. Early samples sounded restrained and grubby.	Bit Stream	•	•	•	136
▲ Audio Alchemy DAC-in-the-Box	200	G Despite its slightly veiled sound this giveaway DAC may still rescue the oldest of players from obsolescence.	18-bit	•	•	•	127
Audiolab 8000DACmkII	750	G Just as smooth and refined as its predecessor yet, sadly, still manages to obscure the passion or fire of music.	DAC7	•	•	•	127
Audio Note DAC 1	600	G An oddball DAC with manual de-emphasis switching. Needs a high preamp input impedance if bass is not to suffer.	20-bit	•	•	•	127
AVI S2000MD	549	G Despite using a very different chipset, the S2000MD sounds as civilised and refined as AVI's other digital separates.	16-bit	•	•	•	136
▲ Cambridge Audio DACMagic-1	150	VG Ridiculously under-priced, this DAC is better suited to high-end transports than the budget players it was intended to partner.	Hybrid	•	•	•	136
DPA Digital Little Bit II	400	G A new on-board mains filter promotes a smoother and richer sound at the expense of some life and vitality.	SAA7350	•	•	•	127
▲ DPA Digital Bigger Bit	695	G With either P-10 or Meridian 200 transports it delivers a very taut and dynamic sound, bathed in an open acoustic	DAC7	•	•	•	103
Kinshaw Overture	235	A- A neat enough package that's infested with a variety of technical bugs and severely chastised on audition.	Hybrid	•	•	•	136
▲ Kinshaw Perception	745	VG A two-box converter that sounds loud, quick and very dynamic without tripping over complex material. A good 'un.	Hybrid	•	•	•	136
▲ Meridian 563	695	G+ Warmer but no less detailed than the earlier 200-series, the 563 really comes into its own with top-flight CD transports.	Crystal	•	•	•	127
Meridian 606 DAC7	1350	G By refining the 203's sound further Meridian have also tempered its vibrancy and 'life'. Fickle with other transports	DAC7	•	•	•	101
Micromega Duo BS2	600	G Has a tendency to sound light, airy and 'fast' but it can also become a little hard or - fatiguing with some digital outputs	SAA7321	•	•	•	101
Micromega Microdac	300	A+ Described as a modest but entertaining performer, achieving its sweetest balance with Arcam's D170.3 transport.	SAA7321	•	•	•	113
▲ Mission DAC5	300	G+ Another modest DAC but one capable of a lean but clean and detailed sound that's typical of the DAC7 breed.	DAC7	•	•	•	113
▲ Musical Fidelity Tubalog	499	G+ The animated character of the Tubalog ensures it's a great upgrade on budget CD players.	18-bit	•	•	•	127
▲▲ Pink Triangle Ordinal	750	E The cheapest dual-differential DAC7 converter available. Offers interchangeable digital filters and top-flight sound quality.	DAC7	•	•	•	136
▲▲ QED Digit	139	G+ Bearing in mind its expressive but very forgiving performance the Digit is almost embarrassingly cheap	PDM Bitstrm	•	•	•	113
▲ QED Digit Reference	425	G+ No great advance over the basic QED Digit yet its enthusiastic sound is more than competitive at the price.	Bit Stream	•	•	•	136
Select Systems Dacula	400	G The overly warm and heavy bass of this DAC is quite atypical of the Crystal Bit Stream DAC.	Crystal	•	•	•	127
▲ Sugden SDA-1	749	G+ A pleasant surprise from the fuddy-duddies of audio, judging by its 'masses of high resolution detail and tremendous dynamics'	TDA1541	•	•	•	113
Thule Audio DAC-200	799	A A good first effort from Thule even though its fizzy and over-eager sound could do with house-training.	DAC7	•	•	•	136
Woodside DAC1	909	G Fine but slightly dated and costly package in performance terms - but flexible, musical and t well built	16-bit	•	•	•	87
▲ Woodside DAC2	509	G+ Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•	•	•	101

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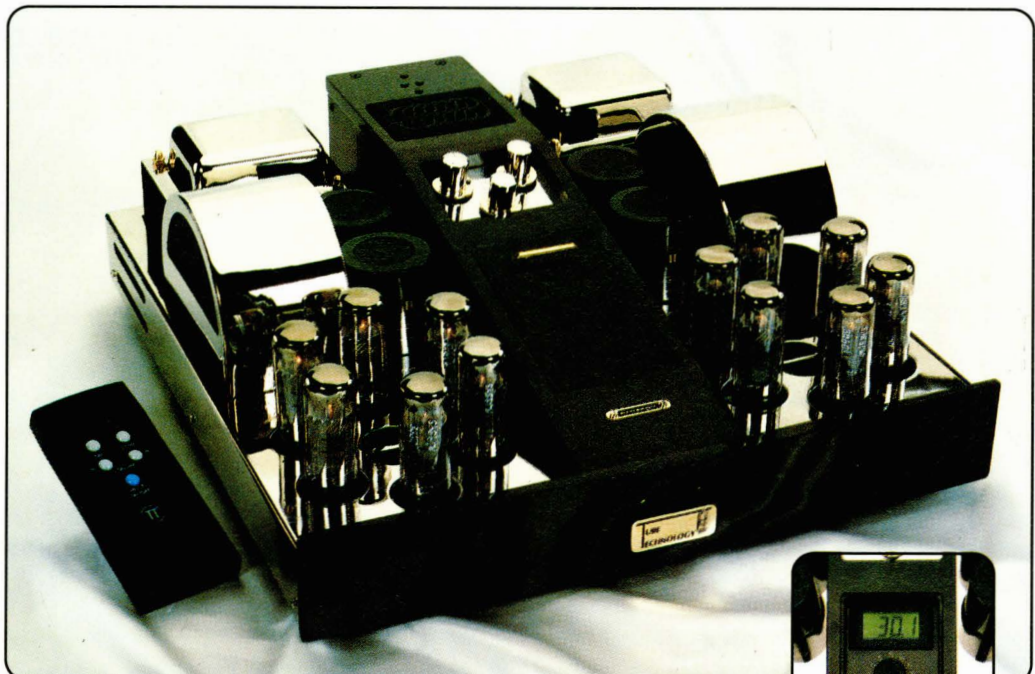
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Transport/DAC combos

Product	£Price	Comments	DAC type	Optical digital output	Variable output	Headphone socket	Track entry keypad	Issue No.
▲ Arcam Delta 250/Black Box 50	1200	VG A very sophisticated combination that sounds silky-smooth without appearing soft or sugar-coated. A bargain two-box player.	Hybrid	•	•	•	•	133
Audio Alchemy DDS/DTI/XDP/P52	2047	A+ A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	120
▲ Cyrus Discmaster/Dacmaster	1900	G+ A powerful-sounding and perhaps slightly heavy-handed combination that cuts right to the heart of its music.	20-bit	•	•	•	•	133
DPA Digital T-1/PDM2mkII	3245	G An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	120
DPA Digital T1/PDM 256	3890	G A highly advanced duet with adjustable dither facility. Sadly its different settings only usher-in different compromises.	Bit Stream	•	•	•	•	133
▲ EAD T-1000/DSP-1000	2195	VG A two-box player based on Pioneer's Stable Platter CD transport. Its music always sounds fast, furious and fascinating.	20-bit	•	•	•	•	120
Linn Karik/Numerik	2495	G+ Partnering Linn's Numerik DAC with its Karik CD player (as transport) provides a dry, dynamic but also slightly dirty sound.	20-bit	•	•	•	•	120
Meridian 200/263	1390	G Now updated with Crystal Bit Stream technology, this popular duet has unfortunately lost much of the charm and poise of the original.	Bit Stream	•	•	•	•	120
Meridian 500/563	1670	A+ Combined with its own 500 transport, the recommended 563 sounds disappointingly thin, brash and uncomfortable.	Crystal	•	•	•	•	133
▲ Meridian 602/606	3100	VG Meridian's top-of-the-range two-box player looks and sounds both distinctive and elegant, the perfect partner for a cultured system!	DAC7	•	•	•	•	120
▲ Monarchy Audio DT-40A/M-33	3090	VG An intriguing combination that provides a beefy and enthusiastic performance via its balanced AES/EBU connection.	20-bit	•	•	•	•	133
Proceed PDT3/PDP3	5214	G+ The third in a series of unusual transport/DAC combinations and a pairing that retains a powerful, confident and rugged sound	20-bit	•	•	•	•	120
▲ PS Audio Lambda/Ultralink Two	4900	VG In direct contrast with its appearance, this duet positively sparkles with colour and resonant detail.	20-bit	•	•	•	•	133
▲ Teac P-700/D-700	1500	VG They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•	•	120
Teac P-2s/D-2	6000	A- Teac's VRDS statement looks a million dollars but sounds rather thin and uninvolving. A great disappointment.	18-bit	•	•	•	•	133
Theta Data Basic/Cobalt 307	2696	G+ A cautious and slightly over-refined combination that fails to make the best of either component.	Hybrid	•	•	•	•	133



DAT players

DAT, or digital audio tape, has been on the market for quite some time now but has never really 'made it' as a consumer medium, probably due to the fact that very little prerecorded software has been made available.

In the last year or so it has begun to carve itself a niche at the top end of the market replacing reel

to reel tape recorders as the audiophile's tape based medium.

The DAT standard specifies a 48kHz sampling rate, which is higher than CD, so direct copying in the digital domain is only possible on those machines with dual sampling frequencies, ie 48kHz and 44.1kHz. Some machines also record at 32kHz

to give a longer recording time for a given length of tape, this is shown in the LP mode column.

The optical and electrical in/outputs in the column headings are for digital signals, analogue in/outputs are universal. The AES/EBU and S/PDIF socketry is for connection to professional components such as mixing desks.

DAT players

Product	£Price	Comments	Remote control	Optical in/out	AES/EBU in/out	S/PDIF in/out	LP mode	Issue No.
JVC XD-Z1010TN	900	A+ Ambitious but ultimately disappointing deck with an opaque musical delivery and more features than you can shake a stick at	•	•	•	•	•	111
Panasonic SV-3700	1111	A Slick, powerfully equipped, this pro DAT has a clear, quick and colourful sound somewhat lacking in weight and substance	•	•	•	•	•	111
Tascam DA-30	1199	A+ Interesting pro DAT deck with solid, tangible sound quality which is nevertheless lacking in analysis	•	•	•	•	•	111



Headphones

There are a variety of different approaches to head phone design. Amongst the more expensive models, electrostatic drivers are used in open-backed phones. The majority of these come with some form of transformer which usually takes the signal from the speaker terminals on the amplifier, but some can run from a pair of tape out sockets.

The more down to earth (see affordable) models feature dynamic, or moving coil, drivers in circular open or closed backed designs. The advantage of open backs seems to be a correspondingly open sound, but one can also of course hear external noises. Closed-back designs are useful in situations where it is necessary to block out background noise, but they aren't

generally as good sonically.

Another means of distinguishing different types is the way they sit on your head. There are three styles: circumaural models enclose the ear and rest on the side of the head; supra-aural designs feature a flat pad which presses on the outer ear (pinna); and intra-aurals rest inside the ear itself, and are popular with personal stereos.

Headphones

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
AKG K44	42	A Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural	•	•	•	•	99
AKG K135	46	A The K135s don't live up to the usual AKG standards, though they do have the ability to reproduce rhythm well	Supra-aural	•	•	•	•	63
▲ AKG K240 Monitor	82	G Something of a classic, these AKGs are very user friendly in all respects; sonically on the warm side of neutral	Circumaural	•	•	•	•	63
▲ AKG K280 Parabolic	117	G+ A very revealing and unusual twin driver design that uses the same principle as a satellite dish to beam sound into the ear	Circumaural	•	•	•	•	63
▲ AKG K340	191	E Heavyweight cans in most respects, the K340 with its electrostatic tweeter is a very revealing headphone	Circumaural	•	•	•	•	75
▲ AKG K400	118	VG Comfortable over long sessions. Sound is exquisitely detailed, dynamic and uncoloured	Supra-aural	•	•	•	•	121
▲ AKG K500	138	G+ Open and clear, they reproduced music with impressive definition, balance is on the light side but transparency is high	Circumaural	•	•	•	•	111
▲ AKG K1000	646	E One of the best dynamics on the market, hooks directly to speaker outputs and makes much of the competition sound lame	Extra-aural	•	•	•	•	99
▲ Audio-Technica ATH-910	90	G The closed-back 910s are an improvement on the 909s with a nice rhythmic quality rarely found with headphones	Circumaural	•	•	•	•	55

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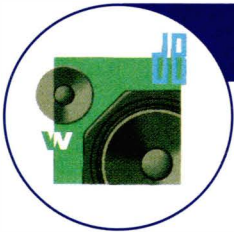
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Headphones continued

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
Audio-Technica ATH-9000	246	G Electrorets which connect to the amps speaker outputs, it sounds a little too smooth but would suit aggressive amps	Circumaural	•				111
Beyer DT311	45	A+ Uncharacteristically tight, unrefined sound quality from otherwise well engineered 'phone	Supra-aural	•		•		133
Beyer DT411	59	G A reasonable but not very thrilling headphone that doesn't really offer enough at the price	Supra-aural	•		•		111
▲ Beyer DT911	199	VG Probably too revealing for many headphone amps these are very subtle and fine if expensive cans	Circumaural	•		•		111
▲ Beyer DT990	119	VG A significant pair of dynamic headphones; they have a smooth and yet revealing neutral sound that is hard to criticise	Circumaural	•		•		55
▲ Jecklin Float Electrostatic	399	E These electrostatics have an openness of sound rarely found in the breed, with good dynamic range to boot	Circumaural	•			•	55
▲▲ Jecklin Float Model One	75	G+ Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	Circumaural	•			•	55
▲ Jecklin Float Model Two	99	G+ Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. The lack of adjustment	Circumaural	•			•	63
JVC HA-D690	40	A Competent but rather undistinctive cans, a bit middle of the road and well suited to aggressive sources	Supra-aural			•	•	111
JVC HA-D910	65	A Broadly acceptable if unexciting design with low level losses and some colourations	Circumaural			•	•	121
Kenwood KH-1000	20	A- First step up from a true mini: a near miniature which is cheap, comfortable and inoffensive	Supra-aural	•			•	121
Koss TD/60	30	A- AM radio like bandwidth limitations and colourations, and rather flaky build	Supra-aural			•	•	133
Maxell HP-3000	30	P Solid, smooth sounding but congested and undynamic. Includes in-lead controls.	Supra-aural			•	•	133
▲ Pioneer SE-400D	37	G- Acceptable if unexciting all-rounder, with good long-term comfort levels.	Supra-aural			•	•	133
▲ Ross RCH-300CD	20	P In-lead controls are the highlights of this shoddy, sometimes aggressive sounding design.	Supra-aural			•	•	133
▲▲ Sennheiser HD320	40	E Superb value: articulate, accurate and musically effective, but location on ears can be uncertain.	Supra-aural	•			•	133
▲▲ Sennheiser HD440 II	35	A+ Still the one by which others at the price are measured, though now slightly leaden sounding, cold treble	Supra-aural	•			•	121
▲ Sony MDR-CD1000	170	G+ A fine sounding and comfortable headphone that's likely to work well with most sources	Circumaural			•	•	111
▲ Sony MDR-CD450	45	G- Fair acoustic isolation and comfortable circum-aural construction, moderate sound quality	Circumaural			•	•	133
▲▲ Sony MDR-CD550	60	G+ A very competent headphone, creates a remarkable sense of space for a closed back design and sounds natural to boot	Circumaural			•	•	99
▲ Sony MDR-CD750	90	G+ Reasonably comfortable and eminently listenable these Sonys have characteristically good bass power and relaxed hf	Circumaural			•	•	111
▲ Stax Gamma pro/SRD-X pro	678	E The Gamma pros are like a stethoscope for your hi-fi, revealing subtleties that many loudspeakers fail to resolve	Circumaural	•			•	63
▲ Stax Lambda Signature/SRM-T1	1644	E The Signature when combined with the SRM-T1 valve driver must be the most transparent headphone available	Circumaural	•			•	72
▲ Stax SR Gamma	239	G+ The next model down the Stax range from the Lambda, the Gamma is an excellent headphone with little to criticise but the price	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRD-7SB	674	G+ An industry reference, frighteningly revealing, bringing across more information than loudspeakers costing twice as much	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRM-1	1239	E Extracts layers of information that other headphones only hint at. The SRM-1 has more edge than the SRM-T1	Circumaural	•			•	75
Technics RP-F10	100	A Another very comfortable sealed model, modest sound isolation and uneven sound favouring bass	Circumaural			•	•	121
▲ Vivanco SR606	40	G+ Although slightly overblown at times, this model is easy on the ears and essentially enjoyable.	Circumaural	•			•	133
▲▲ Vivanco SR808 Classic	55	G A new mid price reference from a new and interesting source. Good all round, no obvious shortcomings	Supra-aural	•			•	121



▲▲ Best Buy

Loudspeakers

Last item in the hi-fi chain, to some extent the loudspeaker is merely the slave of what has gone before, capable only of reproducing a signal as good as it is fed. Nevertheless the distortions (colorations and stereo effects) introduced by loudspeakers (and rooms) tend to be more immediately obvious than those anywhere else in the chain, so careful choosing according to taste is very important.

The average loudspeaker consists of a smallish

enclosure, much of which may have begun life as part of a tree, plus a couple of drive units hidden behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. Variations on the above formula are specifically identified in the entries. The designer's primary task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the

bass extension (how low does it go), shown as 'bass from', for the given box size. After that such subtleties as coloration (or lack of it) and dispersion come into the equation.

Careful placement of the loudspeakers within the room is as important as the initial choice of model. See siting columns for guidance. For good stereo they need to be more or less the same distance from nearby walls. Models not ticked as 'floorstanding' will require rigid stands.

Loudspeakers

Product	£Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Site close to wall Sensitivity (dB)	Site in free space Floorstanding	Issue No.
▲ Acoustic Energy Aegis 1	452	G Rich and slightly heavy balance doesn't mask fine mid/treble coherence and transparency. Entry level for all-metal drivers	39x21x26	28	84	•	118
Acoustic Energy AE1	950	G Amongst the best miniatures around, shows exceptional mid focus and coherence, but is pricey and could be more agile.	29.5x18x25	48	84	•	102
▲ Acoustic Energy AE3	1650	G+ Solid, authoritative and impressively accurate – if a shade ponderous and slow	63x26.5x37	23	85	•	86
▲▲ Allison AL100	100	A Loud and lively budget wall-mount is bigger and beefier than most of the competition, if lacking some subtlety and refinement	33.5x24x21.5	30	87	•	94
Allison AL105	170	A- Pretty enough in appearance, sonically the AL105 doesn't really make the grade at the £150 asking price	37x24x21	45	87	•	78
▲ Allison AL110	220	G- Compact bookshelf model is a little dry and mid forward, but bass is extended and solid	40x24.5x22.5	28	86	•	102
Allison AL120	420	A Pretty well balanced if slightly mid forward, but sound quality is a little disappointing for the price	63x28x27	30	88	•	98
Allison MS 200	220	A- Small and solid as a brick, this micro-miniature has limited bass and bright balance, but sounds agile and communicative	25.5x14.5x15	50	85	•	106
▲ Apogee Caliper Signature	3995	G+ Power hungry full range ribbon panels have remarkable transparency and delicacy, loudness and 'grunt' are a bit lacking	122x70x6.5	30	81	•	81
▲ Arcam Delta 2	300	G Pretty luxury compact sounds a shade forward and coloured but has dynamic and lively bass for its size	37.5x22.5x27.5	40	87	•	94
ATC SCM20	1461	G+ Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82	•	86
▲ Audio Note AN-E/B	1300	G+ Lovely coherence, great midband dynamics and transparency, extended bass and high sensitivity — pity it's so darn ugly!	80x36x28	20	91	•	106
▲ Audio Note AN-J/B	799	G+ Light damping and local unevenness adds some coloration, but doesn't spoil the very lively, dynamic and coherent sound	58.5x33x24.5	25	90	•	110
Aura SP-50	400	A Two very tasty drivers rather outclass the cabinetwork; a capable but slightly dull compact stand mount	40x22x25	30	87	•	126
▲ B&W 2001	120	A Cunningly concealing its (very real) limitations, this is just about the smoothest and best balanced miniature around	29x18x21	48	87	•	118
B&W 2003	190	A- Flashy and assertive ghetto blaster styling is not reflected in the rather bland, if well balanced sound	43x21x25	30	88	•	122
▲ B&W DM600i	180	A+ Smart cosmetics and a very even balance overall, but dynamically rather bland; amplifier current demands are quite high	35x20.5x25	25	88	•	135

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Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
▲ B&W DM620i	399	A+ Good material value, this compact floorstander has a beautifully voiced midband, less happy bass tuning	77x24x32	40	89	• •	126
▲ B&W Matrix 801	3500	G+ Lacks the transparency of the best panels, and the drama of the best dynamics, but is something of an acoustic tour de force	77/99x56x43	<20	86	• •	81
▲ B&W Matrix 805	845	G Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	98
▲ Bose 305	430	G- A bit of an oddball, fine dynamic liveliness and a good room match more than make up for the strange stereo imaging and treble	28x45x23	40	88	•	78
Bose 401	500	A Cheaply built but distinctively styled semi-omni floorstander suffers from heavy midbass but still sounds lively and open	78.5x30x28.5	28	89	• •	110
Bose 901 MK6	1650	A The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Boston HD5	139	A Tiny and prettily shaped miniature has an attractive lack of boxiness, but is a little short of drama and dynamic drive	25x16x18.5	30	86	•	110
▲ Boston Acoustics SW10	449	G- Clever powered subwoofer system integrates well and improves system loudness and power handling	50x28.5x42	35	NA	• • •	126
▲ Cabasse Bisquine	600	G+ Classy French large bookshelf speaker has great coherence and dynamic grip, but a rather mid-forward overall character	48x26x30.5	30	91	•	110
▲ Cabasse Skiff	1500	G+ Large floorstanding three-way gives great sensitivity and bass extension with fine dynamic grip	100x30x36	25	92	• •	122
▲ Canon S-30	180	A+ Clever and unusual moulded design has attractive lively coherence, along with 'wide imaging stereo' effect	27x22.5x23.5	50	88	•	114
▲ Canon S-50	250	A+ Only a small cone miniature at heart, the fascinating styling and extended sweet spot feature make it utterly original.	30x24(diam)	48	84	•	102
▲▲ Castle Chester	650	G+ A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	• •	98
▲ Castle Durham 900	280	G Lovely veneer and lots of engineering create a very upfront, coherent and exciting sound — maybe too much so for budget systems	40x21.5x24	45	89	•	135
▲ Castle Howard	999	G+ Ably fills the price/size/sound gap between Chester and Winchester; a spacious semi-omni with a rich, laid back balance	104x23x35	25	87	• •	132
▲ Castle Trent II	190	A Very classy finish for the price, plus a sound that passes muster without setting anything much alight	33.5x18x20	50	88	•	122
▲ Castle Winchester	1499	G+ Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25	87	• •	90
Castle York	349	A+ Pretty little real wood compact has an engaging transparency, good balance and fine timing, could do with more authority	43x22x26	30	86	•	110
▲▲ Celestion 1	109	A Pretty basic performance but at a very basic price — it all sounds a bit scrappy and untidy, but its heart's in the right place	27.5x16x21	50	87	•	114
▲▲ Celestion 3 MkII	130	A+ Smooth and polished by budget speaker standards, if a bit laid back for some tastes	31x18.5x20	45	87	•	130
Celestion CS135	139	A- Compact hideway passive subwoofer lacks serious bass extension; for high sensitivity speakers only	52x19x34	45	88	• • •	128
▲ Celestion 15	389	G Big box and bang for your bucks, short on subtlety and control, but long on both enthusiasm and perceived vinyl wood grain	103x20.5x25.5	28	90	• • •	114
Celestion 9	269	A Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	102
Celestion SL12Si	629	A Elements of fine sound quality, but this 'grown up' SL6 variation has a lumpy response alongside its improved power handling	53x20x27	50	85	•	66
Celestion SL600Si	820	G Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52	82	•	68
Celestion SL6Si	429	A+ This stereotype luxury compact can sound a bit dull and congested, but really opens up on Slate Audio stands; favours CD	37.5x20x25	30	86	•	94
Celestion 300	1099	G Splendid bass extension and fine panel-like openness and transparency, but dynamics and timing are suspect, balance very laid back.	100x21x31	<20	86	•	118
Dali 102	230	A Attractive bookshelf model has fine midband focus and bass extension, but treble's a bit restrained and bass a bit detached	37x21x25	30	86	•	114
Dawn Chorus FS	698	G Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	• •	11
Dynaudio Contour 1.3	1199	G Heavyweight luxury finish bookshelf model has good scale and weight but is pricey and a bit ponderous	38x20.5x29	28	86	•	122
▲▲ Epos ES11	395	G+ Integral baffle/driver to give a remarkable combination of low coloration, transparency and speed; bass is a bit shy	37.5x20x25	45	86	•	94
▲ Epos ES14	595	G+ Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25	85	•	98
▲ Faraday FS1	225	A+ Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45	86	•	114
Faraday FS5	575	G Pricey and ugly, but with its own sonic charm, thanks to substantial influence of the concrete enclosure has upon the sound	46x27x26	28	90	•	102
Faraday Siren	375	A- Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48	87	•	94
▲ GLL Maxim	119	A Budget miniature offers well balanced strengths and few weaknesses at a very realistic price; a bit feeble	26x17x20	30	85	•	122
Harbeth LS3/5A	539	A Still a classic miniature, though not to every taste, and none the better for the recent update under our listening conditions	30.5x19x16	60	81	•	66
▲ Harbeth HL-P3	479	G Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smearing sub-miniature	31x19x17	23	82	•	118
▲ Harman-Kardon LS 0200	150	A Laid back to a fault but entertaining nonetheless, and a big box for the price	38x21x29	30	86	•	130
Harman-Kardon LS 0500	300	P A mug's eye-fel — huge box for the price with loads of bass but very little presence: unacceptably unbalanced, or high infidelity	105x21x25	22	91	• •	135
▲ Heybrook Prima	130	A+ Neat and discreet miniature delivers fine coherence, pace and timing, though balance is a trifle forward and bass a bit light	29x19.5x18	50	86	•	110
▲ Heybrook Quartet	555	G Beautifully presented and built large bookshelf model with good sensitivity and a lively, forward sound	41x24x23	48	89	•	122
▲ Heybrook Sextet	1099	G+ Engagingly coherent and a highly analytical, partly due to distinct and t always comfortable upper-mid forwardness	96x27x20	25	85	• •	102
▲ Heybrook Solo	189	A+ Discreetly styled, sounds a little untidy in both bass and treble but handles complex rhythmic material much better than most	36x23x22	28	87	•	90
▲ Heybrook Trio	359	G Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	118
Impulse H7	785	A Ultra-compact horn has fine midband contrasts but very little bass and detached treble; gives amplifiers a hard time	87x15x30	45	85	• •	132
Infinity Kappa 6.1i	995	A Good extension and laid back balance from high-tech drivers in classy cabinet, but bass is fat and slow and dynamics unconvincing	97x30x24	25	89	• •	132

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	normal price	CLEARANCE PRICE
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LSO300	£199.90	£139.90
TD4200	£279.90	£199.90
HK3300	£379.90	£199.90
HK3400	£499.90	£299.90
INFINITY		
Ref 20	£299.90	£179.90
Ref 40	£429.90	£329.90
Ref 60	£749.90	£579.90

	normal price	CLEARANCE PRICE
RCD955AX	£279.90	£199.90
RA935BX	£199.90	£149.90
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670 II	£219.90	£179.90
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Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site in free space		Site close to wall		Floorstanding	Issue No.
				Sensitivity (dB)	Bass from (Hz)	Sensitivity (dB)	Bass from (Hz)		
Infinity Modulus	795 A+	Carefully conceived and beautifully built. Undeniably attractive in the mid and treble, it failed to handle the bass as well	30x18x26	45	84			•	86
▲ Infinity Reference 10	200 A	An engaging and lively sound from a prettily finished and substantial small bookshelf size model	36x23x23	50	87			•	98
Infinity Reference 20	300 A	Well presented and balanced with good bass control, but somehow lacks convincing cohesion and agility.	46x27x24	27	88			•	102
▲ Infinity Reference 30	400 G	Budget price floorstander has good overall balance and bass extension, but is rather coloured and uneven	86x27x24	25	89			• •	122
Infinity Infinitesimal sub	499 A	Cute but pricey amplified subwoofer is too small to deliver real bottom octave grunt	34x34x34	40	NA	•	•	•	128
Jamo Cornet 40.3	130 A	Pretty presentation and a strong box, but poor driver fixing. Decent if bright sound	32x20x22	48	86			•	130
Jamo 447	500 A-	Very prettily styled, but build and sound quality is disappointing for the price	81x19x29	40	89			• •	138
Jamo 707	900 G-	Superb styling and cosmetics but indifferent build and engineering quality; decent balance apart from detached bass	105x26x39	25	88			• •	132
JBL Control 1 Plus	250 A	Sub-miniature with forward midrange and real bass; highish price partly justified by near-indestructible Pro build	23x15.5x14	50	89	•			90
JBL L1	479 G	Good power handling, decent transparency and deep but current hungry bass from a compact and solid enclosure	40x21x25.4	47	87			•	121
▲ JBL L20J	800 G+	Lovely if pricey bookshelf model has that old JBL magic, full of bounce and brio, needs a good quality stand and can sound a bit heavy	44x26x28	30	87			•	138
JBL ti1000	1500 G	Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45	89			•	118
▲ Jordan JH400	590 A+	Piano finish hexagon has single full range driver and controversial sound, with uneven balance but delightful mid coherence	33x24x30.5	50	83			•	106
▲ JPW AP2	180 A	Offers real wood veneer at a bargain price; performance is cleaner but broadly comparable to P1 Vinyl overall	43.5x25.5x26	45	86			•	106
▲ JPW AP3	225 A+	Pretty good stereo and well balanced overall it had its own character which is well suited to vinyl replay	52x25x29.5	57	90	•			46
▲▲ JPW Gold Monitor	80 A	Great sound for pound value through bass and midband, but the top end's rather coarse	27x18x18	50	85	•			130
▲ JPW Minim	79 A-	Very civilised but dynamically limited, the Minim is well suited to the smaller room and where limited loudness is acceptable	27.5x18x19.5	28	85	•			82
▲▲ JPW Mini Monitor	60 A-	Ultra cheap Richer Sounds special is lightweight and short of welly, but a snip for surround sound use	27x18x17	50	85	•			122
▲ JPW P1	155 A+	Honest and basically articulate if not very sophisticated, resolution is good but can sound a little wearing in bright systems	44x25.9x26.1	60	89			•	59
▲▲ JPW P1 Vinyl	135 A	A lot of highly competent loudspeaker for the price, with a safe sound that's unlikely to disappoint.	43.5x25.5x26	32	87			•	102
▲▲ JPW Sonata	115 A+	Well balanced and integrated, offers fine sound if limited bass and dynamic range, plus real tree wood at a nearly silly price	32x23x20	55	86	•			71
JPW Sonata Plus	135 A-	This luxury variation on the redoubtable Sonata theme features a metal dome tweeter, and isn't the better for it	32x23x21	30	87			•	90
JPW Ruby 1	500 G	Very pretty but pricey luxury metal-cone miniature has good, if slightly edgy balance	32x19x21	42	85			•	139
▲ JRT AD1	500 G+	A fair share of cosmetic deficiencies do little to spoil the impressive coherence and timing	59.5x28x36	28	86	•			86
▲ JRT AD1 Micro	389 G	Delightful life and coherence, gives surprising impression of scale; some aggressive tendencies but very open to system tuning	28x17x21	50	87	•			94
▲ KAR Volante	600 G+	Beautiful real wood floorstander doesn't sound as big as it looks, sound is coloured but lightning fast and great fun	88x21x27	40	88	•		•	138
▲ KEF 104/2	1595 G+	A reference point for dynamics, preferred without KUBE, suited to many rooms. Good stereo, high sound level	90x28x41.5	50	92			• •	60
KEF K120	169 A	Physically pretty and sonically competent but undistinguished bookshelf size model has good sensitivity but limited extension	34x20.5x26	45	87			•	106
KEF Q30	349 A	Fine focus from Uni-Q driver, but lacks drive and time coherence; acoustically smaller than it looks	73x19x29	44	88			• •	126
KEF Q50	500 A	Compact twin-driver floorstander with Uni-Q treble, and a rather midbass heavy overall balance	84x19x28	30	88			• •	139
KEF Q80	569 A+	Uni-Q floorstander has good stereo and fine midband coherence, but bass lacks extension, drive and resolution	85x24.5x26.5	45	87			• •	106
KEF Q90	739 A	Generous floorstander has even balance and decent extension but fails to communicate excitement and involvement effectively	90x25x32	25	88			• •	118
KEF AV1	2499 G-	Awesomely built, finished and powerful subwoofer lacks the subtlety and unintrusiveness for top class hi-fi applications	43x56x50	<20	NA	•	•	•	128
▲ Kenwood LS-770G	260 G	Impressively communicative bookshelf model has fine vigour, scale and dynamics, if not the smoothest sound around	48x27x25	25	89			•	106
▲ Kenwood LS-500G	500 G	Japanese designed and built luxury compact delivers an invigorating and exciting sound; an interesting contrast to some lazier models	45x23x26	48	89			•	118
▲▲ Legend II	200 G	Liveliness, coherence and fine information retrieval justifies the odd looking moulded baffle construction	37x21x30	48	88	•			122
▲▲ Linn Index II/KuStone	374 G	Stand and speaker looks and sounds very good, good bass extension and control, fine dynamic range. Clean, clear if a shade slow	44x21x23.5	28	86	•			90
▲ Linn Kaber	1298 G+	Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforgiving	89x19x29	25	85	•		•	118
▲ Linn Keilidh	595 G+	Stunning timing and coherence and awesome bass drive, especially with ceramic plinth; sounds a bit shut in	83x20x27.5	22	87			• •	114
Living Voice Air Partner	11990 E	Formidable horn design with astounding transparency, dynamics and speed. Its idiosyncracies are compensated by sheer energy	165x64x92	40	101	•		•	117
▲ Lumley Monitor Reference 3	895 G+	Lovely free stander suffers from indifferent bass alignment, but is fast, coherent, solid and very informative indeed.	87x27.5x28	30	90			•	106
Lumley Monitor Reference 4	375 A	All metal diaphragm and real wood at fair price; balance uneven — upper mid forward with suspect bass tuning	36x17x23	44	86			•	126
Magneplanar SMGa	668 A	Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85			• •	46
Meridian Argent 1	995 G+	Beautifully built, finished and shaped, has fine bass extension and virtual absence of 'boxiness'; needs a big amplifier	33x27x27	28	83			•	98
Meridian Argent 2	875 G	Beautiful high-tech 'large compact' delivers extended, smooth and neutral sound with fair speed. Slate Audio stands essential	48.5x21x29.5	23	85			•	94
Meridian M30	950 A	Pricey active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA			•	46
▲ Mission 760i	130 A+	Attractive little wall-mount miniature has livelier dynamics and bass drive than most of its type, but sounds as little shut in	29.5x18x20	48	87	•			110
▲ Mission 760i SE	150 A+	Tweaked 760i variation is one the prettiest and best balanced babies around; a demanding amp load	29.5x18x20	50	87	•			130
▲▲ Mission 733	300 A+	Stylish floorstander represents a lot of speaker for the money, and sounds pretty good too	86x20.5x31	45	87			• •	139
Mission 751	300 A	Attractive luxury miniature has great sonic potential, but our our review samples have been marred by sample variations	32x17x27	45	86	•			126
▲ Mission 752	500 G+	Brilliant style ans packaging, great engineering and build, plus a sound quality that can give the 753 a run for its money	90x20x25	45	89	•		•	138
Mission 765i	680 A+	Big heavyweight floorstander has good sensitivity and bandwidth, but somehow lacks agility, authority and dynamic grip	102x25x33	22	91			• •	110
▲ Mission 753	700 G+	Gorgeous presentation and potential for open transparency. Floorstander with lots of drivers that gives lots of loudness	90x22x30.5	45	88			• •	114
▲ Monitor Audio MA201	250 A+	Goodlooker with solid engineering sounds lively and coherent with plenty of power handling, but also a bit shut-in and coloured	40x22x26	40	89	•			135
▲ Monitor Audio MA202	450 G-	Uneven but informative and easy-listening floorstander delivers decent scale from big vinyl box	89.5x22x28	28	88			• •	139
Monitor Audio MA1200 Gold II	1200 G	Pricey but classy floorstanding variation on MA800 theme; beautifully voiced midband, heavy midbass	93.5x17x27	28	85			• •	122
▲ Monitor Audio Studio 6	800 A+	Pretty but pricey metal diaphragm compact has clear and transparent midband but is ultimately lacking in vim, vigour and drive.	35x22x25	45	86			•	118
▲ Mordaunt-Short MS10	130 A	Hi-tech baby has fine bass/mid integrity but the top end is less appealing	30.5x18.5x21	50	86			•	130
Mordaunt-Short SW-1	150 A-	Prettily finished and inexpensive passive subwoofer is only really useful with sub-miniature speakers	24x58x25	40	85	•	•	•	128
▲▲ Mordaunt-Short MS20	180 G	Sober 'bookshelf' model uses hi-tech plastics to deliver a notably good midband at a very sharp price — a fine all round compromise	36.5x21.5x22	40	87			•	135
Mordaunt-Short MS50	540 G-	Big value big box with fine engineering content and big lazy, laid back sound; lacks charisma	91x25x33	22	86			• •	138
Morel Bassmaster 602	1200 G+	Superbly built compact stand-mount, did well in listening tests but suffers (enjoys?) upper midband peak	24.5x40x22.5	25	84			•	114
▲▲ Musical Technology Kestrel	250 A+	Cute little metal cone floorstander brims with clever ideas; sounds very clear and clean if cautious	80x2-20x19	40	84	•		•	139
NAD 801MM	100 A-	A rather undistinguished sub-miniature with low sensitivity and indifferent sound quality	27x18x18	48	84	•			130
▲ NAD 804	320 A+	Good value compact floorstander sounds lively and coherent, but quite coloured due to uneven balance too	75x20x26	25	89			• •	126

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Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site close to wall Sensitivity (dB)	Site in free space Sensitivity (dB)	Floorstanding	Issue No.
▲ NVA Cube 1	720	G+	Attractive, semi-omni is very sturdily built, and gives an idiosyncratic but unusually open, spacious and informative sound	33x32x32	52	85	• 71
▲ NVA Cube 2	480	G	A rude but exciting miniature, with unusually accomplished bass capabilities for its size	28.5x27x28.5	48	85	• 82
NVA Cubix	1400	G	Too idiosyncratic for recommendation, the Cubix possesses remarkable bass extension for its size, but is tricky to optimise	60x32.5x32.5	28	84	• 78
Naim IBL	895	G	This tiny floorstanding wall mount delivers outstanding dynamics, speed and detail, marred by pronounced upper mid forwardness	80x18x15-20	30	84	• 94
▲ Naim SBL	1708	G+	Impressive scale, full bandwidth, coherent, attractively discrete, coloured midband, very well balanced and agile	88x26.5x17-27	25	86	• 102
▲ Neat Petite	525	G+	Far from perfect, but one of the most entertaining and enjoyable speakers around, colorations notwithstanding.	30.5x20x18	33	86	• 102
Origin Live OL1B	290	A+	Pretty little miniature delivers a punchy and dynamic midband, but costs quite a lot for the engineering on offer	31x18.5x22	45	89	• 135
▲ Origin Live OL2A	469	G	Compact floorstander sounds open, transparent and evenly balanced; needs a big amp but enjoys hard driving	82x19x19	25	85	• 122
Origin Live OL1	499	G	Luxury miniature has very good overall balance, sacrificing sensitivity to achieve remarkable bass extension for the box size	30.5x19x21	25	82	• 106
▲ Pioneer S-4UK	250	A+	Latest version now balances pretty well, with a lively and coherent if bass light sound; dull packaging	37x21x27	42	88	• no 139
▲ Polk LS50	800	G	No enthusiast tweaks here, but plenty of power and beautiful overall balance from a good looking compact floorstander	84x23-27x29.5	25	90	• 138
Polk LS70	1200	A+	High sensitivity and lots of loudness potential, but in-room balance has far too much midbass boom; mid and treble are very laid back	96x31x37	22	91	• 132
Polk RM 1000W	349	A-	Not a true subwoofer at all, but rather the bass section of polk's elegant upmarket three box speaker system	31x52x33	45	90	• 128
▲ Professional Monitor Co LB1	998	G+	Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	• 110
Professional Monitor Co AB1	1600	G	Bulky stand-mount transmission line has lovely panel-like transparency, slightly shut in balance, and needs a big room	79x27x43	22	89	• 114
▲ Quad ESL-63	2384	G+	This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	• 60
▲ REL Strata	499	G+	Outstandingly value and performance active subwoofer adds serious bass unintrusively to any small speaker system	52x42x31	<20	NA	• 128
▲ Rega EL8	298	G	Kyte drivers in compact floorstander give more bass but a shade less coherence; good for small rooms and budget systems	75x16.5x21	55	86	• 122
▲ Rega ELA	500	G-	Classy new styling for one of the original compact floorstanders — lovely midband life and coherence if a bit bright and lightweight	84x20x20-31	40	87	• 139
▲ Rega Kyte	198	G	Has splendid timing and coherence, sounds very explicit and informative, if a bit bright and short of grunt	31x19x20	50	87	• 114
▲ Rega XEL	1040	VG	Looks good, measures well and sounds great too; balance is bright but even, with delightfully bass-to-mid coherence and timing	102x21x33	40	89	• 132
▲ Rogers LS2a/2	229	G	Balance is a bit warm and rich but 2a/2 has delightful mid-to-treble coherence and transparency, and more welly than Mk1	35.5x23x22	30	84	• 106
Rogers LS4a/2	300	A+	Civilised but a trifle lazy, this large bookshelf model hasn't quite the timing or agility to be particularly engrossing	43x25.5x25.5	25	86	• 110
Rogers LS6a/2	399	G	Largish stand-mount is well built, measures well, good material value, but sounds a bit heavy and lacklustre	51x28x29.5	22	87	• 114
Rogers LS8a	499	A+	A mixed bag, with plenty of scale and welly but lacking the subtlety, clarity and agility delivered by some rivals	89x25.5x25	48	91	• 102
▲ Rogers Studio 3	450	G	Pricely LS3/5A-derived wall-mount sub-miniature is excitingly coherent if a bit lightweight; no real loudness capabilities	31x19x17	30	83	• 118
Rogers Studio 5	700	G-	Luxury finish bookshelf size model has genuine monitoring capabilities, but can sound a little thin and unromantic	44x24.5x24.5	40	88	• 138
▲ Rogers Studio 7	880	G	Latest variation on classic BBC-monitor theme looks old fashioned but has beautifully voiced, laid back sound	63x30.5x30.5	30	88	• 122
▲ Roksan Ojan 3	895	G+	Squat, stylish and black, with unusual tweeter decoupling; great bass extension and flat but somewhat uneven balance	78x28x45	<20	85	• 132
Royd Topaz	273	A+	Cheerful, articulate and essentially communicative miniature can also sound a trifle scrappy and shut in; well worth trying	30.5x20.5x19	50	87	• 114
▲ Royd Minstrel	129	G	Imaginatively packaged super-slimline floorstander. Not much welly or loudness but fine coherence and timing; a bit bright	69x18x12-24	30	85	• 135
Royd Abbot	666	A+	Engaging and dramatic dynamics and fine transient coherence are hampered by a rather coloured mid-forward balance	83x20x34	43	88	• 118
Ruark Templar	479	A+	Compact floorstander with striking baffle has decent bass/mid but dull treble; could tame over-bright system	73x19x27	25	85	• 122
▲ Ruark Talisman 2	700	G	Less ideologically committed than some compact floorstanding rivals, its key strength lies in fine all round compromise	86x25x31	30	86	• 118
▲ SD Acoustics SD3	399	G	Port firmly blocked, the new SD3 has the agility and charm of a quality miniature, with good bass extension but low sensitivity	38x19.5x29	25	83	• 106
▲ SD Acoustics SD5	1235	G	Bass tuning and coherence suspect but forward midband is delightfully smooth; high class drivers include ribbon tweeter	112x20x30	30	86	• 132
▲ SD Acoustics SD1	1650	G+	A large scale, airy and unusually detailed system with excellent dynamics. A warmer balance than original model	123.5x38.2x32	50	90	• 60
SD Acoustics Ribbon	2950	G+	Amplifier sensitive, Ribbon is a lively and loud hybrid marred by some colorations; some like it, others don't	152x30x(15-30)	30	91	• 81
Shahinian Arc	1675	G	Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	• 110
Snell JIII	770	G	Dated styling belied by fine sensitivity and bass extension, and a lively if slightly untidy and not quite coherent sound	58x33x25	30	89	• 118
▲ Spendor S20	579	G	Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	• 102
Spica Angelus	1295	A	A little bass shy and soft in the bass and lower mid, otherwise tidy, extremely lively and fluid, if uneven overall	116.8x53.3x26	50	86	• 60
Spica TC50	649	G	This triangular-profile 'grown up' miniature is a shade boxy and laid back but has good rhythmic and musical integrity	40.5x33x29	55	88	• 71
Spica TC50SE	849	G	A heavily UK-modified TC50, the SE sounds less boxy and more spacious, but lacks some of the urgency of the standard model	40.5x33x29	55	88	• 71
▲ Systemdek Systym 937	600	G	Compact real-wood floorstander incorporates transmission bass loading to give fine bass extension and an open midband	93x22.5x25	25	88	• 138
TDL NFM	120	A-	A disappointing underperformer in our tests, at a price that's not very nice either	27x18x18	50	86	• 130
▲ TDL RTL3	400	A+	Bargain price floorstander has rich, heavy and bright sound with good scale and fine basic neutrality	92x20x38	25	88	• 126
TDL Studio 0.5	499	G	Tiny floorstanding transmission line has good agility but doesn't provide the coherence or even balance of Studio 1	55x20x30	40	85	• 94
▲ TDL Studio 1	699	G	Genuinely extended bass from a compact enclosure, very detailed but a shade clinical and detached in presentation	76x23x33	25	84	• 78
▲ TDL Studio 1M	899	G+	Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	• 118
▲ TDL Reference Monitor	1999	G+	Fine solidity and good accuracy, with great bass extension. Needs a big room and can sound a bit lazy and a shade tinkly	118.5x30x47	28	85	• 66
▲ Tannoy 632	190	G	Clever cabinet shaping avoids boxiness and promotes focus and imaging; fine bass extension but tricky stand compatibility	41x14-24x23	25	87	• 135
Tannoy 633	330	A+	Compact floorstander with slammin' bass — real extension and coherence without boom — but dubious midband	74x24x23	<20	87	• 139
Tannoy 638	599	G	Big value vinyl big box has pretty good balance and lots of loudness capability, but needs a good amp and bass isn't entirely convincing	94x16-29x27	25	90	• 138
▲ Tannoy Westminster	6000	G+	These awesome horn loaded speakers are remarkably controlled and impressive, if only suited to a few pockets and rooms	Huge	38	96	• Col
Technics SB-EX2	200	A	Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	• 98
▲ Thiel SCS	1069	G+	Luxury piano-gloss compact sets class-leading standards for coherence and communication, can sound a shade dark and shut in	40x22x23	45	87	• 114
Thiel CS1.2	1219	G	Elegant compact floorstander has fine balance and dynamic range, but transient timing and dynamics are less convincing	94x27x27	30	86	• 118
▲ Totem Model One	995	G	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	31x16.5x23	28	86	• 122
Vandersteen 2Ce	1395	G+	This compact American floorstander's elegant staggered baffle arrangement contributes to a refreshing freedom from boxiness	100x30.7x25.6	23	87	• 86
Visonik David 6001	163	P	Sharp styling but the complex grillework worsens a sound which starts off with too much top and not enough bottom	20x12x13	130	87	• 74
▲ Wharfedale CRS3	89	A+	Loads of fun — a remarkably coherent and lively performer at any price; pity it doesn't look prettier	38x22x18	50	88	• 122
Wharfedale Diamond V	130	A	This miniature is smoother than most, but rather stodgy with it, inspiring little enthusiasm among our listeners	27x18x20	50	86	• 114
▲ Zyp A1	199	A+	Cute metal cased micro-miniature is quite coloured but great fun, with surprising dynamics and fine wall-loaded room balance	22.5x14.5x13	30	85	• 110

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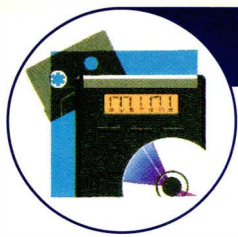
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Systems

Systems is a generic title that we've chosen to describe any form of complete system package. Fundamentally what we're talking about here is midi and mini systems, you know those all singing all dancing, lights blazing systems that hi-fi snobs are allergic to. Sold on the basis of their ability to play virtually all mediums at the flick of a remote control switch stack systems offer a plethora of features, and the dearer the system the more complex they tend to

become. With things like double cassette decks, multi preset tuners, CD players and graphic equalisers supplied as standard the big boys of the stack world offer such luxuries as Surround Sound, separate chassis for different components and occasionally a record player. They usually have a few line inputs for extra sources and a few are available without loudspeakers. As the latter are often the weakest part of a stack system buying good quality speakers separately will bring

worthwhile improvements. The section headings for stack systems include size of the complete stack without speakers and rated output per channel — where a system has more than two channels this is indicated in the comments. Tuner presets and the existence of a remote control are self explanatory. A blob in loudspeakers shows that they supplied, an "o" indicates that they are optional. The final column is for those of you with records to play.

▲▲ **Best Buy**

Systems

Product	£Price	Comments	Size: HxWxD (cm)	Rated output Watts	Tuner presets	Remote control	Loudspeakers	Turntable	Issue No.
▲ Denon D110/S	870	G Nearly hi-fi from pretty but pricey silver stack; richer, fuller speakers would help	37x27x33	40	30	•	•	o	125
Goodmans System 700	600	A Separates flexibility and upgraeability in remote midi package; anodyne sound	69x35x37	50	20	•	•	•	125
▲ JVC Adagio G7	799	A Wondrous 2-speaker surround movie sound system, but a very uneven package elsewhere. Four by 20W output	42x28x28	20	40	•	•		125
▲ Kenwood HD-1000	1000	E Mini lifestyle system, well built with minimalist facilities and exacting performance standards all round	30x27x35	40	30	•			131
Marantz 1020	1000	G Component lifestyle system which is as elegant on audition as it is to look at	22x42x32	30	20	•			131
Onkyo L-909	1200	G Simple yet flexible lifestyle mini system suffers iffy cassette deck set-up, but otherwise satisfies	38x28x32	40	30	•			131
Philips FW91	999	A+ Good looking and performing package rendered expensive by inclusion of DCC deck	37x26x32	60	30	•			125
▲ Technics SC-CH950	1000	A+ Classy if rather bland allrounder includes useful Dolby Pro-Logic AV capabilities	42x27x34	60	39	•	•		125



Tuners

The radio medium operates at a much lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live Prom concerts can rival all other sources from a hi-fi perspective.

Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for certain transmissions in the UK.

Something of a hi-fi afterthought, tuners are often selected merely to match a chosen amplifier

cosmetically. However, the task they carry out is far from simple, combining the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on local reception conditions, but money invested in a high quality outside aerial system is well spent.

Tuners come in two basic types. Analogue models tune gradually (and usually manually) across the bands, and can have analogue or digital displays; they are often preferred for sound quality,

and are certainly best for AM bands. Digital tuners offer convenient automatic tune facilities and preset memories.

The 'Presets' column heading shows how many different frequencies a tuner can memorise for instant station access. FM, LW and MW shows which wavebands a tuner can access. 'Signal strength meters' are useful for aerial alignment. 'Automatic tuning' means that a tuner can seek out signals for you.

▲▲ **Best Buy**

Tuners

Product	£Price	Comments	Presets	FM	LW	MW	Signal strength meter	Manual tuning	Automatic tuning	Issue No.
Aiwa XT-003	120	A- Economically designed and built in the UK, but trade-offs have a marked influence on FM and AM sound quality.	30	•	•	•	•	•	•	93
▲ Aiwa XT-950	150	A Decent enough performance all round given the modest price, though RF tweaks have limited value	24	•	•	•	•	•	•	129
Arcam Delta 280	350	G+ Fine sound quality marred by mild synthesiser whine; RF performance only average, remote £60 extra	20	•			•	•	•	120
▲ Audiolab 8000T	700	VG Unusually combines fine sound quality and RF performance (inc AM); superb ergonomics are a joy to use	39	•	•	•	•	•	•	120
Aura TU-50	300	G Tonally neutral, but with rather poor imaging and a certain woodenness to the sound.	16	•				•		109
▲ Denon TU-260L	120	G+ Bare minimum of features. Careful designwork promises a surprisingly open and vivacious sound, so don't overlook it!	20	•		•		•	•	93
▲ Denon TU-580RD	220	G Fine feature package including remote and RDS, plus excellent RF performance and decent sound quality	30	•		•		•	•	120
Harman Kardon TU9200	219	A The listening panel appreciated its liveliness, but found it a little muddled.	32	•				•	•	109
▲ Harman Kardon TU9400	299	G+ Striking in appearance and with a sound to match, it comfortably exceeded our expectations. On stereo FM it's HK's best yet.	24	•		•		•	•	93
Harman Kardon TU9600	499	G Good bass and detail, and good - perhaps slightly enhanced dynamics	24	•		•		•	•	109
JVC FX-362	140	A- Disappointing all round performance — watch out for aerial input overload in strong signal areas. Tuning knob unspecial	40	•	•	•		•	•	129
Kenwood KT2050L	150	A- Decent RF capabilities despite simple front end. Sounds a bit bright and ergonomics are a bit complex	30	•	•	•		•	•	129
Kenwood KT-3050L	170	A Excellent RF performance and plenty of features including RDS, but did sound rather ordinary under our conditions	39	•	•	•		•	•	120
▲ Linn Kremlin	1995	E Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	80	•				•	•	120
▲ Magnum Dynalab FT101	825	G+ Although expensive for its fairly minimum set of facilities, its excellent sound makes up for what it lacks elsewhere	0	•				•	•	72
Marantz ST-53	170	A+ Sweet sound could well satisfy audiophile sensibilities, but selectivity is not great	59	•	•	•		•	•	129
▲ Meridian 604	1350	VG Unique digital conver or makes most sense in Meridian system context; smooth sweet sound with fine front end	30	•				•	•	120
▲ Naim NAT 01	1453	E There may be better sounding tuners in the world, but we have yet to hear one	0	•				•		50
▲ Quad FM4	434	G+ Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•				•	•	50
Quad 66	532	G+ Very pretty and compact but technically unadventurous. Smooth sound but only makes sense in Quad system context	19	•				•	•	120
▲ Rotel RT-930AX	175	G- A competent rather than exciting performer, with low audible interference though slightly compressed and muddled sound.	20	•	•	•				108
Sherwood TX-3010C	120	A Lots of features and fine RF discrimination for price. Sound is communicative but inconsistently tacky	30	•		•		•	•	120
▲ Teac T-X4030	120	A Not exactly special, but still a well balanced, tolerable and capable allrounder at a very reasonable price	20	•		•		•	•	129
Yamaha TX-350L	130	A- Enticingly pretty and compact presentation but performance isn't great; beware of aerial overload	40	•	•	•		•	•	129

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Sony TCK 415	£179.99	£149.99
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JVC S30 MINI	£429.99	£379.99

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	WAS	NOW
Aiwa XT003	£119.99	£79.99
Sony STS 311 RDS	£199.99	£159.99

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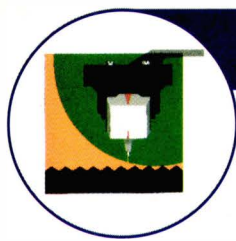
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Turntables – cartridges

Cartridges fall into two groups: high output models, capable of working directly into most amplifiers and categorised as having a normal (N) output, and more expensive low and very low output models (L, VL). Stereotypically, low output cartridges use the moving coil principle of operation, have better mechanical integrity and tighter tolerances, and give better performance but

at much higher cost. With CD now the dominant medium many amplifiers are no longer equipped with the necessary phono input for a cartridge and a separate phono stage is necessary. Valve designs need either an extra head amp or transformer to cope with the low output of moving coil cartridges.

Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs

benefit in overall balance from optimised amplifier capacitance loading. The mechanical characteristic of cantilever compliance ('springiness') needs to be considered in the light of the effective mass of the tonearm, and to achieve a good match compare the effective mass requirements figures with the actual effective mass of specific arms. 'turntables' and 'tonearms' sections.

Turntables – cartridges

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲▲ Arcam C77	30	A+ A sensible moving magnet package with good bounce at a competitive price	6-16	N	•		48
▲▲ Arcam C77Mg	40	A Punchy sound quality with plenty of extra energy to liven things up. The solid body seems well worth the extra £10	4-8	N	•		67
▲ Arcam E77Mg	60	A Our sample had a disappointing stylus, but gave a coherent, rich and laid back sound, with good 'scale'	3-8	N	•		48
▲ Arcam P77Mg	73	A+ Preferred to its cheaper partner by virtue of a better tip. Channel balance could have been better	4-9	N	•		48
▲ Audio Note IO IIV	1395	E One of the best, giving 'an extraordinarily relaxing midrange clarity', needs a transformer	8-18	VL		•	100
▲ Audio-Technica ART1	850	VG This is a delicate and very fluid-sounding MC that tracks well, offers very low distortion and exceptionally good separation	9-18	L		•	72
▲ Audio-Technica AT-420E	36	A Better suited to pop recordings, this MM bears some of the sonic hallmarks of the Linn K5	7-14	N	•		67
▲▲ Audio-Technica AT-95E	20	A Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ Audio-Technica OC-5	130	G For the price, it's unusually effortless and detailed, but it tends to become rather relentless and tiring after a while.	5-14	L		•	103
Audioquest AQ 404i-L	500	G+ Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge	8-16	L		•	84
Audioquest AQ 7000	1295	G+ Stunning stereo imaging and good detail at low levels are spoiled by less-than-perfect tracking and high sensitivity to arms.	6-20	L		•	91
Denon DL103	100	A+ Good performance in bass and general 'life' is seriously let down by its spherical stylus which kills subtle details.	9-22	L		•	103
▲▲ Denon DL110	70	G Firmly recommended as a fine all-rounder, this high-output MC model is likely to perform well in nearly all circumstances	6-16	N		•	48
Denon DL160	90	G Although listeners just preferred the 110, its brother here proved a twin in lab tests and is still "thoroughly competent"	6-16	N		•	43
Denon DL304	200	VG Uncoloured, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	450	VG Clear, detailed, neutral and generally very informative - excellent.	6-18	L		•	91
Dynavector XX-1	988	G+ Good, but not immensely competitive at the price, and not helped by comparison with the low output version	7-15	N		•	84
▲ Dynavector XX-1L	988	VG Very clear, very detailed, no troubles with tracking; response lift around 20kHz seems to do no harm	7-13	L		•	84
Empire Benz Micro MC-Gold	150	G Nothing is obviously wrong, but nothing is stunningly right either. Safe, but perhaps a little too safe	7-17	L		•	103
▲ Empire Benz Micro MC-Silver	150	G Ultimately not the peer of the MC Gold is more appropriate to the sort of equipment it's likely to be partnered with	8-18	N		•	103
▲ Empire Benz-Micro MC-3	800	G+ Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
Glanz GMC-10LX	80	A+ Bearing some of the hallmarks of the '10EH, the '10LX is still less competitive in the sonic stakes	7-15	L		•	67
▲ Glanz GMC-20E	129	G+ Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	G Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	G As with 1012, a touch harsh; detail and transient purity improved, though, and it goes well with electric guitar!	5-11	N	•		85
Goldring 1042	90	G Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	A A lightweight and frisky-sounding MM that appears to be based upon the same body as the Nagaoka mm4	7-15	N	•		67
Goldring Elite	200	G The basics are right, and it will cheerfully tackle any source material, but its sound possesses a certain dirtiness	8-18	L		•	103
Goldring Eroica H	100	G- More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	G Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
Goldring Excel	549	G Errs on the warm and heavy side of neutral. Strong bass lines are its forte, but resolution of subtle treble details is weak	6-13	L		•	72
Goldring Excel GS	600	G+ True high end quality in its lack of colorations, but tracking seems indifferent and high levels tend to sound rough and edgy.	9-20	L		•	103
▲ Linn K5	49	A+ Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	G Linn threw this model into the leading pack by beefing up the Basik's bodywork and adding a super stylus	6-15	N	•		Col
London Maroon	199	A+ Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
London Super Gold	339	A- Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Milltek Aurora	299	G+ An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲▲ Ortofon 510	32	G+ For the price, a good blend of virtues weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	55	A+ Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	85	G+ Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
Ortofon 540	110	A Graced with FGII stylus but possessed of too high a compliance for broad arm matching. It could also sound a little unforgiving	3-8	N	•		67
▲▲ Ortofon MC10 Super	85	G "What a delightfully sweet-sounding cartridge this is..." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	110	G+ A good all-rounder, with outstanding performance in detail retrieval, even if it can be very slightly bright and close-up	10-24	L		•	103
▲ Ortofon MC3 Turbo	110	G Not terribly subtle, but it obviously doesn't aim at that. The 3 Turbo is bright, cheerful and bouncy - take it as it comes!	10-24	N		•	103
▲ Ortofon MC3000 MkII	950	E Low levels of body resonance are a real ear-opener. Nothing to criticise elsewhere; one of the very best	9-16	VL		•	84
Ortofon MC5000	1500	G Review sample could not be fully run-in, limited tracking ability, bright and forward sound, though imaging is excellent	12-20	VL		•	91
Rega Bias	34	A+ Difficult to mount in some arms due to its shallow build, the bias offers a gentele, refined SQ	4-10	N	•		67
▲ Rega Elys	74	G Clearly superior to the Bias, despite their common heritage, the Elys is both more detailed, accurate and musically convincing	8-15	N	•		67
▲ Roksan Corus Black	130	G Recognisably related to Corus Blue, but distinctly more civilised and smoother.	7-12	N	•		91
Roksan Corus Blue	75	G Roksan-specified modified Goldring 1012; slight harshness detracts from otherwise good sound.	7-12	N	•		91
▲ Shure ME97HE	55	A+ It won't turn a sow's ear of a turntable into a silk purse, but will at least keep going and produce an acceptable result	8-20	N	•		48
Shure V15 VMR	220	A+ Initial listening gave promising results, but extended familiarity gave the feeling of a lack of energy and a "shut-in" sound	5-12	N	•		38

Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
van den Hul Grasshopper III/II GLA	3200	E Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	6-10	L		•	122
▲ van den Hul MC One	975	G+ This extended all the positive qualities of the '10 but added greater authority and scale worth it for the extra money	6-12	L		•	60
van den Hul MC One/High	1100	G+ Slight softening on transients was the only real flaw, but it didn't quite seem to have that special touch one expects	8-15	L		•	84
▲ van den Hul MC Two	1300	G+ Connected directly to any standard MM input it rewards with a highly detailed yet fluid and musically convincing portrayal	6-13	N		•	72
▲ van den Hul MC10	775	G+ A neutral balanced performer giving transparent midrange, fine depth and focus with firm extended bass. Gosh!	5-10	L		•	60
▲ van den Hul MM1	275	G+ If woody midrange coloration could be tamed, the excellent imaging and admirable security would make it excellent	7-15	L		•	103



Turntables and tonearms

Specialist turntables are what high fidelity sound is all about, CD may offer silent backgrounds and flat frequency responses but they can't match the dynamics and superlative timing that serious turntable users take for granted. Turntables at the cheaper end of the market (sub-£350) tend to be supplied with matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices amongst the

separate motor units and tonearms. Careful partnering and set-up is essential for these components, but 'sympathetic' combinations exist.

The columns show from left to right, 'arm effective mass' relates to cartridge compatibility with regard to compliance (springiness) and is explained in the 'Cartridges' introduction. 'Suspended subchassis' — decks which have some form of internal isolation, generally in the form of

springs but occasionally more solid materials such as rubber. 'Manual' and 'Automatic' refer to the operational tendencies of the deck/arm combination — automatic high end turntables are as rare as hens teeth. 'Cartridge' — if one is supplied. 'Belt drive' as opposed to direct drive is the preferred method in most quality decks. An 'Electronic PSU' offers switchable speed change and a 'smoother' power supply for better sound.

▲▲ Best Buy

Turntables

Product	£Price	Comments	Arm effective mass (g)	Suspended subchassis	Manual	Automatic	Cartridge	Belt drive	Electronic PSU	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	G+ Good sound in all areas - bass, clarity and neutrality all in the top class and bettered by very few decks at price	13	•	•				•	79
▲ Dual CS-503-2	160	A Not wholly inspiring; generally coarse and wooly sound is at least not offensive, but easily bettered by the CS505-4	10			•	•	•		91
▲ Dual CS-505-4	200	A Consistent sounding and well isolated turntable. It is slightly lacking in balls, compensates with a consistently un-muddled presentation	10			•	•	•		103
▲ Kuzma Stabi/Stogi Reference	2000	G+ Beautifully made solid oak plinth, the Stabi also sounds very clear, detailed and extended. Stogi Reference is very capable.	12	•	•				•	91
▲ Linn Basik	299	A+ Strong midband analysis and imagery, clean if sharp treble is matched to a good if occasionally wooden bass	10		•			•	•	103
▲ Linn LP12 Basik/Akito	904	G Trails the full LP12 significantly, but pace, rhythm, timing etc. still in top class, and bass tauter than of old	10	•	•				•	103
▲ Linn LP12-Lingo/Ekos	2642	G+ The classic reference is improved by the Lingo but charming character remains. Ekos is well made and suited to many decks	9	•	•				•	91
▲ Michell Gyrodec	697	G Sweet and natural sounding player, well suited to Rega RB300. Aesthetics, and the acres of clear acrylic are very distinctive	NA	•	•				•	55
▲ Michell Syncro	325	G A happy blend of qualities endows the stylish Syncro with a blend of subtlety and force - the mailed fist in the velvet glove	NA	•	•				•	67
▲ Pink Triangle Anniversary	1495	E Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny	NA	•	•				•	91
▲ Pink Triangle Export	890	E The PT TOO with built in PS. Retains features of great transparency and neutrality. Review sample had highish motor noise	NA	•	•				•	91
▲▲ Rega Planar 2	185	G A remarkable product at the price, surprisingly articulate and confident	11.5		•				•	48
▲▲ Rega Planar 3	250	G A long time leader in its category, the '3 (with excellent RB300 arm) sounded nicely 'musical' in a balanced and coherent manner	11.5		•				•	48
▲ Roksan Radius/Tabriz zi	740	G Design is subtle, refined and easy on the eye. Musically it offers exceptional performance with a minimum of fuss	9		•				•	103
▲ Systemdek 1.920	235	A- The motor unit is derivative of the Rega Planar 2 with a Moth arm. Up tempo even bright at times but never lacks enthusiasm	12		•				•	115
▲ Systemdek IIX/900	230	G A high performance budget turntable which is particularly strong at fine detail resolution and imagery	NA	•	•				•	103
▲ Systemdek IIXE/900AP	388	G+ The acrylic platter'd IIXE is one of the most capable budget decks on the market, good resolution, dynamics and timing	NA	•	•				•	103
▲ SME Model 20A	3763	E Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval.	10.5	•	•				•	118
▲ Thorens TD-3001/TP90SF	760	G Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas	NA	•	•				•	103
▲▲ Thorens TD166 V/UK/RB250	280	A- Refined and articulate sound with well focused imagery, suitable for use with good MM and budget MC cartridges	11.5	•	•				•	103
Thorens TD2001	650	G- Similar to TD320 but much dearer - why? Sound is comfortable but not very detailed	15	•		•			•	91
▲ Voyd 0.5	3368	E Halfway between standard and Reference Voyds with the latter's platter and bearing. Superb finish, colourful and dynamic sound	NA	•	•				•	72
▲ Voyd Reference	5950	E Voyd's flagship, equipped with three substantial motors, a Lexan platter and brute PS. A strong contender for world's best	NA	•	•				•	C91
▲ Well Tempered WTAT	1800	G+ Intriguing/challenging design. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards	7.5		•				•	67

Tonearms

Product	£Price	Comments	Effective mass (g)	Height adjustment	Pivoted	Parallel tracking	Issue No.
▲ Alphason HR100S	490	VG S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	10		•	•	C86
▲ Kuzma Stogi Reference	1000	VG Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	12		•	•	79
▲ Linn Ekos	1297	VG Superb, state of the art design which builds significantly on predecessor Ittok's strengths	9		•	•	67
▲▲ Moth arm	95	G+ The ultimate budget arm? Refined, detailed, sweet and natural	12			•	60
▲▲ Rega RB300	139	VG Despite its modest price it sets exceptional performance standards and could be used on many high end turntables	11.5			•	60
▲ Roksan Tabriz	190	G+ Targetted at the Xerxes, this is a good alternative to the Rega arms in many cases - a trifle bright	9		•	•	91
▲ SME 309	568	VG Beautifully made and finished, fully adjustable, a highly neutral performer	10		•	•	79
▲ SME Series IV	828	VG Superb engineering and finish with a finely balanced sound, impressive stereo focus and low colouration	10.5		•	•	60
▲ SME Series V	1233	E Excellent in all respects, this arm arguably sets the standard for pivoted arms regardless of price	10.5		•	•	60

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Personal messages



Never mind the Teasmaid, what your bedroom really needs is a Bose. Paul's morning routine will never be the same again...

Bose has managed something of a coup: launching two new products sufficiently intriguing to get columns from Barry Fox and myself in the same issue of *Choice*. By mutual agreement Barry is covering the *Auditioner* acoustic simulator on his page (31, folio fans), while I get to play with a cute little toy called the *Wave* radio. All I'll say about the *Auditioner* is that I've challenged Bose to submit it for a live versus simulated comparison sometime, but the "we'll see what we can do" response didn't seem to carry much conviction.

Still, the new *Wave* radio is much more fun in its way. It's the latest of the company's 'lifestyle' products, which means first that it doesn't fit neatly into any normal product category, and second that only those rich enough to have a lifestyle will be able to afford one (or two, or three).

At heart it's a clock-radio, so at £350 it needs to be the definitive example of the breed. But you can't check it out down at your local hi-fi or electronics store, since Bose won't be marketing it that way. It's a Freephone or coupon, 14-day home trial, no obligation etc operation — the number, to save you scouring issues of *Choice* for ads, is (0800) 614293. However, having heard the *Wave* at home, I reckon that most people will send in the cheque rather than return the radio.

The *Wave* is a little larger than the typical Morphy Richards, but is still ridiculously small considering what comes out. The sound, in short, makes

No, not a hog's intestines, but the secret behind the *Wave* radio's deeply impressive bass.

a passable imitation of a hi-fi system, or at any rate the general perception of a hi-fi system — so much so that several visitors refused to believe all the sound was coming from just this one little plastic box. One cynic observed that if that was bass he'd far rather do without it, but the majority just smiled in perplexed amazement.

It's a very neat ergonomic package too, with full remote control handled by an exquisite little handset the size of a credit card. Handy touches include an automatic dimmer on the display, so that it doesn't glare in the night, and battery backup for clock and alarm (but not display), so you wake up in spite of power cuts and can move it from room to room without having to reset. It also has stereo line-in and line-out sockets, adding great flexibility — just plug in a CD personal; feed it with a tape-out lead from the hi-fi in the next room; connect up the bedroom VCR, etc and so forth.

So how come it sounds more like a hi-fi than a clock radio? Well, each side of the central display sits a small, full range Bose driver with a 60mm cone. Behind the left hand one lies a tape-worm of a precision moulded column, which zigs and zags for 86cm before appearing as a port just beside the right hand driver. Bose calls this a wave-guide, though a folded tuned column is perhaps more precise for something which acts a little like an organ pipe, delivering an energetic and well defined resonance.

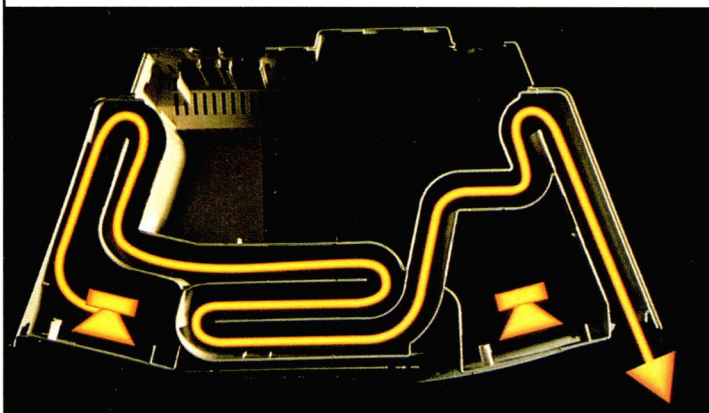
It's also a pretty hefty device, its 3.2kg allowing for amplification muscular enough to deliver a heavily equalised signal to boost the bass output of the little speakers. The net result is a combination that delivers a reasonably flat in-room balance as low as 75Hz — not quite a match for the 50Hz a typical pair of miniature hi-fi speakers can manage, but awesome for a clock radio. In short, it sounds remarkably big and beefy, though not very smooth.

Sadly there's also the small matter of the built-in automatic loudness compensation, which adds extra bass boost when the volume is turned down. It's a similar trick to the one that spoiled Bose's active Acoustimass speaker system for me, but somehow it's more acceptable — perhaps because I'm not approaching the *Wave* radio with the same expectations. Some compensation is probably beneficial here, but in my opinion Bose's decision to apply around 6dB of sub-120Hz boost for every 10dB drop in signal level is rather excessive. This works well enough at normal levels, but intelligibility tends to get swamped by background like traffic and wind noises when listening to an interview at very, very low levels, for example.

Still, the FM radio does a decent enough job, and the AM section is a real honey, even if it does only cover the medium and not the long wave band. I looked on in an amazement as radio guru Norman McLeod pulled in Irish, Dutch and Scottish AM transmitters after sunset and with considerable ease and clarity, using just the supplied ferrite loop aerial — far, far better than typical hi-fi tuners, and just the ticket for Radio Five Live fans.

There are a few niggles, nonetheless. The clock gained three minutes in the first week, which is irritating, and the display is absolutely determined to be a clock rather than a radio, refusing to display the frequency for more than a few seconds before reverting to time. It's a little too magnetic to sit on top of a TV, and you have to aim the handset quite precisely to elicit a response too.

On the other hand, basic ergonomics are superbly intuitive, and the product itself is great fun to have around. It's small enough to make a micro system seem bulky, yet is altogether neater and probably as good sonically. Only hi-fi purists are likely to be offended by the psycho-acoustic game it plays. I'd love to have three or four *Waves* to scatter around the house, but sadly my income isn't too likely to reach the lifestyle bracket for the foreseeable future...



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Even in the shaky surroundings of old Pompeii the New TEAC T-1 CD Transport would still have delivered the goods.

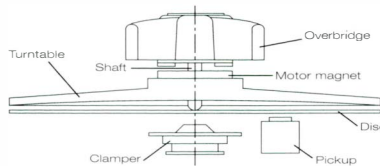
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What sets the VRDS mechanism apart from standard CD players is its ability to reduce the vibration induced in the spinning disc.

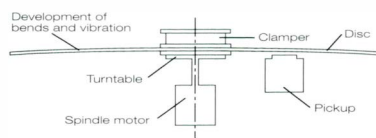
As the diagram on the right shows, a normal CD transport of the type used in budget and high end players alike, only clamps the CD at its centre.

As the disc itself is rotating at high speed it oscillates and vibrates making it difficult for the the pickup lens to track the minute pits on the CD surface with the necessary accuracy.

VRDS Mechanism



Standard CD Mechanism



TEAC

VRDS

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If it was available to the ancient Romans they would probably still be using it now - in spite of earthquakes!

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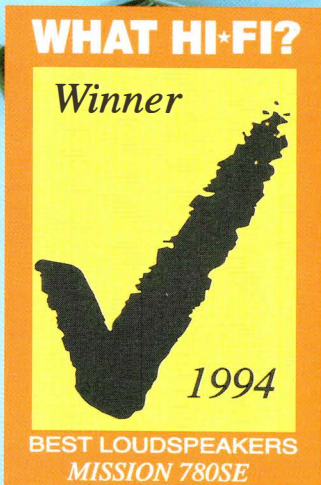
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