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# HI-FI CHOICE

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EDIT POINT

## Real hi-fi steals the show

**A**s this issue of *Hi-Fi Choice* goes to press, the *Sound and Vision '94* hi-fi and video show at the Marriot Hotel in Bristol has just drawn to a close.

One of our favourite events, not least because it gives us the chance to see so many west country readers, the show was well attended by manufacturers. They were all keen to show new products first seen at the *Winter Consumer Electronic Show* in Las Vegas (see report in last month's *Choice*).

Home cinema equipment was much in evidence but, in common with the bigger show across the water, real hi-fi was fighting its corner too. More importantly, perhaps, representatives from both sides of the audio/video divide were keen to point out that you can have your cake and eat it.

Enjoying the thrill of being in the control room as the sub plummets out of control in *The Abyss* need not prevent you from appreciating (I think that's the word I'm looking for) the finer points of some of Color Me Badd's impressively close-knit harmonies.

Having a multi-channel sound system can provide you with the best of both worlds, as representatives from Meridian, Dolby Labs, Lucasfilm (the originators of the THX system) and others have been keen to point out.

All of which is good news for hi-fi enthusiasts who have perhaps felt a little marginalised by the recent surge of interest in all matters to do with home cinema. Hi-fi is all about capturing the excitement and magic of music, and whether that comes from a tape cassette, vinyl record, CD or video film soundtrack is almost incidental.

Multi-channel stereo is, potentially, the next big advance for domestic hi-fi. The fact that such a system can also double as a home

cinema surround sound system can only serve to strengthen its appeal and not, as some people would have us believe, weaken it.

The fact that AV demonstrations were taking place alongside more traditional hi-fi ones at the Bristol show further underlines this coming together of the technologies, and not before time. Quality sound is not the sole preserve of the audio purist, nor home theatre that of the gadget freak. The two must co-exist.

### It's showtime

If you require yet more proof that the world of hi-fi is a vital part of the wider home entertainment market, make a note in your diary now to visit the *Live '94* show at Earl's Court between September 20-25.

Last year's event, held at Olympia, was a huge success and this year's show looks set to be bigger and better than ever, due in no small part to the fact that *Hi-Fi Choice* is sponsoring the High End Hi-Fi Show at *Live*, one of the key features of this, the UK's only consumer electronics show.

We certainly won't be taking the shrinking violets approach to showing hi-fi either. The *Choice* High End spectacular will be bang in the middle of the action, with audio specialists like Arcam and Marantz rubbing shoulders with computer software houses such as Microsoft.

It promises to be an intoxicating mix of high technology, with the experts from *Choice* on hand to provide help and advice on all aspects of hi-fi, video and multi-media system integration. Watch this space for more details on the hi-fi event of the year.



Simon Davies

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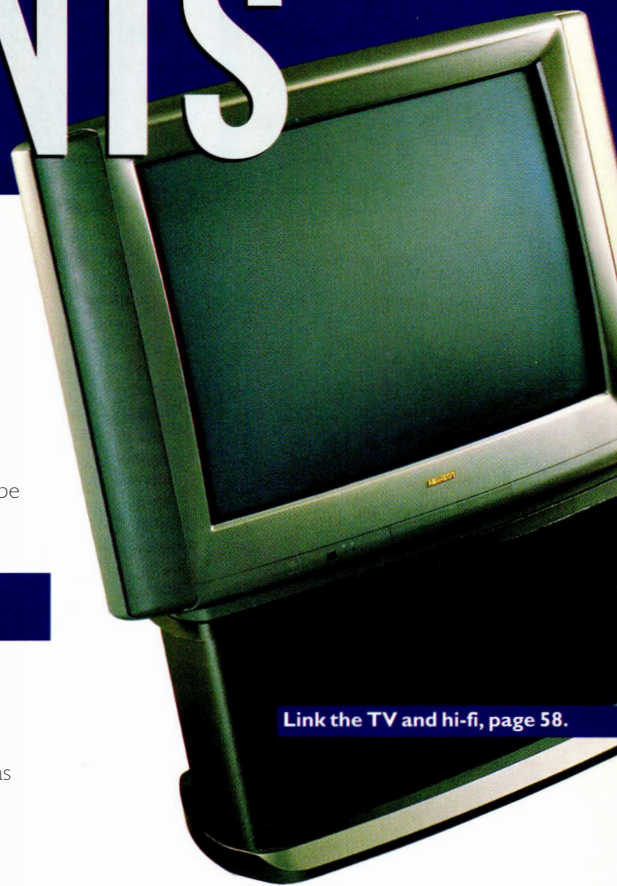
### THE REVIEWS

Paul puts eight of the latest mid-priced integrated amplifiers to the ultimate test in his laboratory and in front of the *Choice* listening panel.

what to look for when shopping for an amp to go with your system.

The dazzling DaCapo DAC.

*Iso/Argo/Alecto* amplifiers and Pink Triangle's *DaCapo* digital converter. We find out if they live up to their high flying reputations.



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The pick of the latest tuner crop revealed, plus our favourite radio stars of old in a survey of the best of the rest.

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**COMING UP**

In the May issue, we'll be looking at budget loudspeakers, cinema sound processors, exotic CD transports and the latest Mission Cyrus amplifier. Plus, the first issue of our new specialist hi-fi magazine — absolutely free!

**COMPETITION**

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**BUMPER £4,000 PANASONIC COMPETITION**

Your chance to win one of 10 Panasonic RQ-DP7 portable Digital Compact Cassette players, each worth £400!



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The original and the best — the UK's most exacting guide to hi-fi. Every significant model is there, and each one has been fully tested and rated by the *Choice* team.



Amps line up for review.



# Update

CHOICE NEWS FROM AROUND THE WORLD

## Mission unstoppable

A strong contender for most profuse product launch of the month, Mission has announced no less than six new products to expand the company's substantial portfolio.

Although the new *Cyrus 3* amplifier has also only just started to appear on dealers shelves, Mission has announced the *Cyrus Pre* and *Cyrus Power* amplifier combination.

With seven analogue inputs — one balanced — the *Cyrus Pre* is fed by a separate *PSX-R* power supply. It features plug-in phono modules, two tape monitors, the ability to talk to other

uses an 18 bit, eight times oversampling DAC with an isolated Philips CDM-9 transport mechanism. Once again, the *DAD-7* is upgradeable, with

the *780* as well. Called the *780SE*, it uses a redesigned bass driver, improved components, wiring and gold binding posts.

Building on the success of the *751* and *753* loudspeakers, Mission has introduced the two-way, floor-standing *752* speaker. This features a time-aligned, slanted baffle and a patented 170mm bass driver with an Aerogel cellulose membrane, which is said to improve sensitivity and dynamics. Finally, not content with



current Mission products via the *Cyrus MC-Bus* and both balanced and normal outputs. The stereo 50W *Cyrus Power* is truly upgradeable, as a separate *PSX-R* power supply can be added. It can even be used as a bridged monobloc.

Also new to the electronics arm of Mission is the *Cyrus DAD-7* integrated CD player. Drawing from the *Discmaster/Dacmaster* CD combo, the single box, top-loading *DAD-7*

### Mission's latest compact creation, the *DAD-7* compact disc player.

the addition of a *PSX-R* power supply and has a coaxial digital output. It also links with the *MC-Bus*.

Fuelled by the success of its hot-rodged *760SE* loudspeaker, Mission has announced an improved ver-

## B&O — the missing link

Bang & Olufsen has introduced the £900 *LCS 9000* active speaker system, for users of the B&O multi-room Beolink system.

Acting as a local



The stereo LCS 9000.

controller, the *LCS 9000* can be data linked to any Beolink master system so that sources can be changed, basic system status revealed and volume level adjusted.

One potential master system is the new £1,400 *Beocentre 9300* system. In B&O speak, it is a tri-centre unit comprising Bitstream CD player, cassette deck and 30 preset AM/FM tuner. It has a built-in 80 watt amplifier, but can also drive up to 10 pairs of active Beovox loudspeakers. The *Beocentre 9300* has extensive AV facilities. ☎ (0452) 307377

## Close to the edge

US cable extremist XLO has introduced a range of cables called Standard, and priced at £180 per metre for the interconnect cables and £299 for a 2.7 metre pair of speaker cables. It has a purple and black colour scheme, to distinguish it from the purple and green Reference. There is also a Reference powercord, the *PL10*, which costs £200 fully terminated

Treading boldly where no cable company has gone before is XLO's burn-in CD. In addition to the usual set-up and sampler material, the £35 disc includes a series of tracks designed to burn-in cables, as well as de-magnetising or de-gaussing a system. ☎ (0602) 284147

controlling the lion's share of the budget hi-fi loudspeaker market, Mission has announced two speakers intended for the ever-expanding home cinema market, the company's first formal venture into this field. Not much is known about the new *73C* centre channel speaker, save that the three driver speaker is designed to have good power handling and full bandwidth. This is allied with the *731*, a 90dB efficient, two-way stand-mounted design.

The price and availability of each of these components was still to be confirmed at the time of going to press with this issue.

☎ (0480) 451777

## In Brief

Now that flares are back in style, **Goodmans Industries** has introduced the £80 GS98 subwoofer for extra trouser flap from mini systems. Instead of adding a separate box to sit in the living room, the Goodmans passive sub is designed to act as a stand for the mini system itself. ☎ (0705) 673763

Take-no-prisoners US high-end **Madrigal** has announced the THX compatible Proceed PAV AV preamplifier. In addition to being able to switch 10 different sources, the PAV can operate different remote zones, making it a central controller for a multi-room AV system. A UK price has yet to be set, but it is probably going to be in the Big Money stakes. ☎ (0494) 441736

Furniture manufacturers **Standesign** has announced a *Modular Shelf System*, which includes a useful £55 bridge. This connects two £45 base units together. It is also possible to stack £45 modules on to the base unit. ☎ (0705) 697333

Danish speaker giant **Jamo**'s latest *Cornet 30.III* bookshelf loudspeaker is now available in a mahogany finish. To launch this speaker, Jamo is offering the model as a package, with its new £40 AP20 speaker stands for £130. Additionally, Jamo has improved the bass drivers and magnetic shielding of its *Centre 50* dialogue speaker. The price of the *Centre 50 MkII* remains at £100. ☎ (0327) 349449

Designer of the Inca-Tech *Claymore* amplifier, Colin Wonfor, is back with a range of high-end amplifiers, called **TOC'A**, which stands for Touch of Class 'A'. The range consists of the £2,000 *TOCA 1* preamplifier, with phono and line inputs and an infrared remote control, a 22 watt £1,500 *TOCA 22* power amplifier, and a £2,500 *TOCA 50* power amplifier. The latter boasts 50 watts, the first 15 of which are solidly in class A. In addition, Wonfor is producing the Inca-Tech *Oberon* integrated, preamplifier and power amplifier. ☎ (0460) 242290

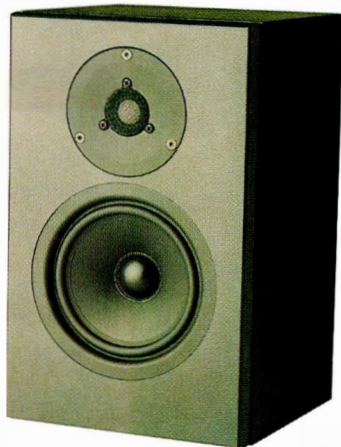
This year's sixth annual **Chesterfield Hi-Fi Show** is said to be the largest yet, with over 30 enthusiast manufacturers as diverse as Nottingham Analogue, Wilson-Benesch and Groove Tubes all showing out on Saturday April 23 and Sunday April 24 at the Ringwood Hall, Brimington, Chesterfield, Derbyshire. ☎ (0246) 200096

Simon Yorke of **Zarathustra Designs** has licenced the *Model 8* turntable and tonearm to David Manley, formerly with VTL but now of Manley Labs in California. The turntables and arms will be designed in England and produced in California. ☎ (0388) 730960

## Tukan play at that game

Moving away from the floorstanding loudspeakers and midi-sized electronics Linn Products has become associated with of late, the new £398 *Tukan* speaker is a small, stand or wall-mounted two-way loudspeaker.

Unusually for a Linn speaker, the *Tukan* is a reflex design, with a rear-firing bass port. It uses the same 19mm ceramic tweeter used in the *Keltik*, *Kaber* and *Keilidh* speakers, partnered with a specially designed 130mm polypropylene bass unit. The latter has a massive magnet with a second



magnet behind it, to increase the field strength of the voice coil and reduce colour shift problem, if the

*Tukan* is placed very close to a TV monitor.

The 87dB efficient *Tukan* is designed to be used both as a primary loudspeaker and in home cinema applications. However, at present, it will not be possible to use the *Tukan* as a centre channel speaker, as it

only available in pairs. It

can be driven single-wired, bi-wired, bi-amped or even actively, as and when its *Aktiv* cards are released.

☎ 041-644 511



## Trio from Trio

Trio-Kenwood (UK) has announced two new AV amplifiers and an AV receiver, continuing the company's attack on the home cinema market. The £300 KA-V3700 AV amplifier offers full Dolby Pro Logic surround, audio and video handling, 65 watts output for all three front channels and 25 watts to the rear channel.

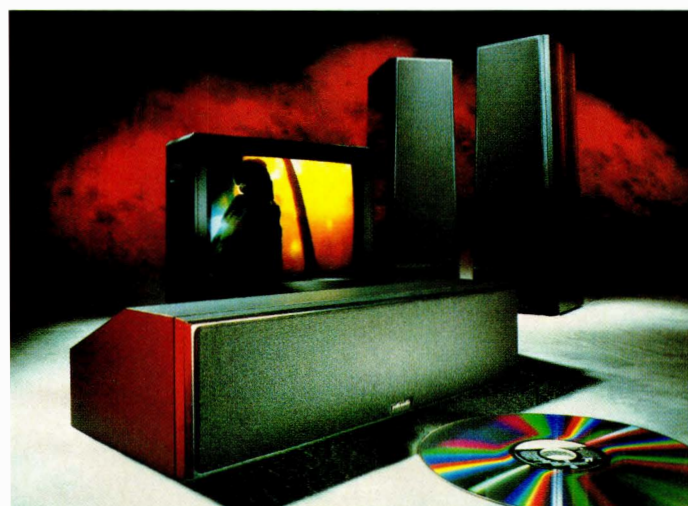
The new £600 KA-V7700 amplifier can route six inputs into three monitors, and has a variety of DSP modes, extensive S-VHS signal handling, low-pass filters to tame bright films and on-screen programming.

Finally, the new KR-V6050 AV receiver adds a 30 preset FM/MW RDS-equipped tuner to a specification broadly similar to that of the KA-V3700, in a £349.95 package. ☎ (0923) 816444

## Boston T(M) party

Boston Acoustics has introduced the £549.99 *Subsat 7* satellite/subwoofer system, together with a £199.99 *Centre 7* centre channel speaker.

The *Subsat 7* system consists of two 200mm high satellites, each with a single 25mm dome tweeter and 100mm copolymer midrange unit. The single *PVI 4* subwoofer uses two 180mm bass drivers in a push-pull arrangement, in a box which stands a mere 38cm high. Although the units are available in black or white, they can also be painted. ☎ (0494) 890277



## Polk pushes fourth

US speaker manufacturer Polk Audio's plans for world domination have taken another step forward this month, with the announcement of the up-market floorstanding LS loudspeaker range, together with the matching £450 CS350LS centre channel speaker. The three speakers are designed to mark the crossover point between hi-fi and video, and each uses Polk's SL6000 25mm trilaminar dome tweeter.

The range starts at £800 for the three-way LS50 and rises to £1,700 for the five-driver LS90, which stands some 94cm high. The slightly smaller £1,200 three-way LS70 is sandwiched in between. All three loudspeakers are claimed to be about 90dB efficient and this, allied with an eight ohm impedance, should pose no problems for most amplifiers. ☎ (0727) 827311



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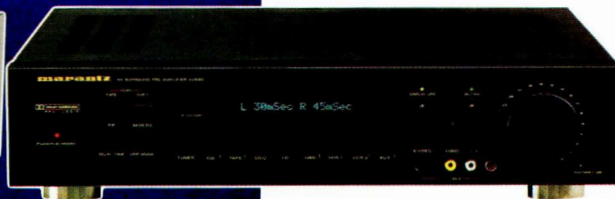
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## Counterpoint's counter attack

A brace of new products, upgrades and appointments form the core of US high-end Counterpoint's big push for the mid-nineties.

Traditionally, Counterpoint is best known for its hybrid valve/solid state power amplifiers and the new £2,495 NPS-200E and £3,995 NPS-400E mark a return to form.

However, the Natural Progression stereo amplifiers break from previous Counterpoint hybrids by using bi-polar transistor output devices instead of MOSFETs. Counterpoint claims that it has overcome the impedance mis-matches between valves and bi-polar stages.

The company has developed a reputation as a front runner in the high-end US home cinema sweepstakes too. The new £1,195 HC-808E Dolby Pro-Logic surround preamp is said to be one of the first processors that uses high-grade audiophile components and the well-regarded Analogue Devices SSM2126A Pro-Logic chip, but the quality is not at the expense of facilities or ease of use. It has three DSP modes and selectable 20/30ms delay for the rear channel signal.

Additionally, the remote controllable HC-808E can be selected for

either stereo or mono subwoofer outputs, has a unique pink noise test mode and can be upgraded by adding the £1,595 HC-818E audio controller and the dedicated £995 HC-828E video switcher.

Counterpoint has



The revised Solid 8E preamp.

also introduced a handy half-width mono amplifier, to be used as a centre channel amplifier. Priced at £895, the 100 watt Solid 1EaM amplifier is designed to complement its existing £1,295 Solid 1Ea 100 watt stereo amplifier.

Counterpoint is seeking THX approval for the Solid 1EaM, to bring it in line with the recently upgraded and THX-approved Solid 1Ea and Solid 2Ea. The £795 Mystic dipole surround speaker has also received THX approval.

On the audio side, there have been upgrades to the digital front end. Both the £1,675 DA-10E D/A converter and £1,495 DA-11E transport can now be used in AES/EBU balanced mode for a £200 premium. Existing players can also be 'balanced', but need to be returned to the factory for the upgrade.

Additionally, the DA-11E transport can now be fitted with a synchronous master clock which is said to improve jitter.

Counterpoint's £1,095 Solid 8E solid state line preamplifier has also come in for some revisions.

Although the device remains virtually unchanged externally, internally it has been completely redesigned. It uses encapsulated modules containing the analogue circuitry, which is said to build on the strengths of the original Solid 8 preamp, both sonically and in its measured performance.

Finally, Counterpoint has appointed John Loughlin, former Roksan director, to the position of vice-president of engineering. ☎ 061-777 8522

## NAD has got you Pro-Logically surrounded

NAD, champions of high quality, budget hi-fi, has added the £400 910 Dolby Pro-Logic preamplifier to its range. Designed to work either as an add-on processor, or as a preamplifier for a dedicated AV system, the remote control 910 handles both audio and video signals, and has four surround modes, in addition to conventional stereo.

Although the preamplifier has no built-in amplifiers of its own, it is laden with useful features. These include a sibilance filter to overcome hiss in bright soundtracks, and the CDR button, which compresses the dynamic range of the recording — useful for late night listening. ☎ 081-343 3240



## Original Orelle

The latest product from Orelle Hi-Fi is the CD-480 CD player. Priced at £399, the CD-480 uses a single beam, CDM-4 transport mechanism, partnered with a selected Philips 16-bit, four times oversampling chipset.

Styled in a slightly upmarket but typically Orelle manner, the CD-480 is supplied with an infra-red remote handset.

It has all the basic functions seen in most Philips players, but also boasts a DC coupled output stage. ☎ 081-810 9388

Paul Gower furniture has produced a new combination CD stack and speaker stand. Finished in American Cherry or black, the £195 stand will hold up to 48 CDs. ☎ (0460) 75959

North London specialist hi-fi dealer Grahams Hi-Fi has got into home cinema in a big way. The store now has a permanent AV demonstration room, the centrepiece of which is the £4,000 Thomson TVP3100 projection video system. It's capable of projecting a picture up to 13 feet wide. ☎ 071-226 5500

Not content with shaking the floor of many a hi-fi enthusiast, Californian loudspeaker designers and part-time earthquake specialists Cerwin-Vega has announced the £500 HTE-10 home theatre package. Cerwin-Vega was originally involved in Universal Studios SenSurround cinema system, and the four 91dB efficiency satellite speakers, subwoofer and single speaker centre channel unit try to recapture those Oscar winning days. ☎ (0423) 359054

Alpine is upgrading its range of radio/cassette units by introducing The new low-price models and revamping more of its existing units. Its new £200 7510R has an RDS-EON tuner and 2 x 25 watt output, while the £230 7511R adds Dolby B, music search and pre-amp out to the basic specification of the 7510R. The £300 7514LS and £350 7515RS are now 4 x 25 watt units, with the latter featuring Dolby B noise reduction. The upgraded £425 7521RS/RM now features dual preamp outputs. Alpine's new V12 power amplifiers use a new power supply, together with discrete components and wireless construction. Prices are £300 for the 30W MRV-F300 and £430 for the 40W MRV-F400. ☎ (0908) 611556

We would like to point out that Hi-Fi Choice has never reviewed the Monitor Audio Studio 50 loudspeaker and, at the present time, has no intention of doing so. As such, the quotation attributed to Hi-Fi Choice in the Monitor Audio Studio 50 advertisement in no way relates to this publication.

In Paul Miller's review of the Arcam Black Box 50, in February 1994 (issue 127), he refers several times to Yamaha's PCM 69 DAC and its predecessor, the PCM 67. These are Burr-Brown components, not Yamaha. Our apologies for any confusion this may have caused.

Our review of the REL Strata subwoofer, in March 1994 (issue 128), the address of the manufacturer was published instead of that of the UK distributor. The correct address is Harman Audio, Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. ☎ 081-207 5050

D E S E R V E S  
C L O S E R I N S P E C T I O N



## NAD 302. European Amplifier of the Year '93-'94

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# CHOICE SESSIONS

## LOUDSPEAKERS

### Systemdek Systym 939

Systemdek, well known for its excellent turntables, has obviously been feeling the chill digital winds. Its response is a three strong range of loudspeakers, at the top of which stands the £700 Systym 939 floorstander.

The cabinet, which is pretty well square in section, has real wood veneer on the wrap and a matt grey, nextel-like finish on the well radiused front and rear baffles. The driver complement looks pretty regular. A 25mm cloth tweeter sits above a 100mm doped paper woofer and a reflex port. On the back, however, it says that the 939 is a three-way design and the 20kg weight backs this up. The third (bass) driver is located face up inside, within its own infinite baffle cabinet.

The 939s proved difficult to get a handle on. They have no gross characteristics and the subtle ones are pretty benign. Next to the Dali 104s (March '94) they sound very solid and focused but don't have the openness and relaxed presentation of that model. The 939's skill lies in its ability to extend bass articulately and create well proportioned three dimensional images.

They are very responsive to improvements in source and amplification and prefer something with a little welly. I found an Audio Innovations *Alto* amplifier slightly too laid back but a Shearman pre/power combination proved to be just the ticket. I would imagine that the Arcam *Delta 290* or Audiolab *8000A* would also work.

The question really is; are the Systym 939s a match for the likes of *Chesters*, *753s* or *Keilidhs*? From memory, they resemble the Linn



in many respects and have imaging skills to match any of these. Whether they can compete is a moot point however.

Which speaker appeals to you will depend on the rest of the system. What is certain is that the 939s play the tunes they're presented with. A bit less, maybe, but no more.

Jason Kennedy

Systemdek Ltd, 34 Kyle Road, Irvine Ind. Est, Irvine, Scotland KA12 8LD. ☎ (0294) 271251

## CD PLAYER

### Marantz CD-63

The name Marantz *CD-63* rang a bell. It was the name of the first Marantz CD player ever, a shiny top loading machine that was very popular in its time. The new *CD-63* costs £250 and isn't as shiny or substantial, but it's neat and slim and, unlike its namesake, listenable.

The *CD-63* features all the usual programming features, a four level dimmable display, both optical and electrical digital outputs, and volume control. The latter feature is on the remote only but most of the others are duplicated on the fascia. The headphone socket, therefore, can be volume controlled.

The *CD-63*'s most striking sonic characteristic is its ability to resolve the temporal elements of the material it's playing or, to put it into hi-fi speak, it 'boogies'. The *CD-63* sounded equally fluid in the company of very open tube amps and civilised transistor designs, drawing you into the musical experience with an innately correct sense of timing. For this reason, I found it more engaging than the Arcam *Alpha 5*, even though that player is more relaxed and has a little more to offer in the way of foundation.

After the Arcam, the *CD-63* sounds tight and a little bright. Although it's nowhere near as brash as older multi-bit players, a degree of mid to high frequency brashness did turn up with some discs. But that seems to be the price you pay for dynamics in budget players. I've not heard an interesting player in this price range that doesn't get gritty from time to time.

Ultimately, this Marantz is a very entertaining, if occasionally

## VERDICT

### Systemdek Systym 939

- ▲ Substantial, well finished and confident design.
- ▼ Timing could be better.

► £700.00

### SOUND QUALITY

■■■■□□

### VALUE FOR MONEY

■■■■□□

SYSTEM

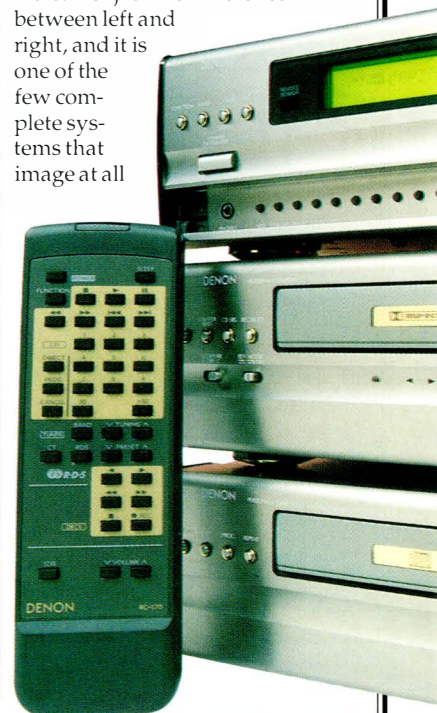
**Denon D-90**

The latest £700 *D-90* shows Denon's audiophile aspirations. It's ideal for people who want a true taste of real hi-fi at a knock-down price, but who are not prepared to do without a tuner or a tape deck. Not to mention the fact that you get a neat little stack of matching components instead of the usual mish-mash of black boxes.

Discounting loudspeakers, the remotely controllable *D-90* fits neatly into three gunmetal finished midi sized boxes. These contain an RDS receiver with discrete amplifier stage, CD player and tray loading auto-reverse cassette deck. It has a good balance between gimmicks and ease of use; it lacks fancy (and largely superfluous) signal processing and flashy displays, but can be got up and running with minimal hassle.

Two ribbon connectors link it all together, carrying power and signal around the system. It does, however, have one line level and one turntable input, and these inputs mean that non-Denon components may be used. There is also talk of an add-on Dolby Pro-Logic processor/amp, which should be available soon.

The sound quality of the *D-90* puts it in a league of its own. It gives a fair account of what was being played off air, from disc or tape. A real soundstage is created instead of just the difference between left and right, and it is one of the few complete systems that image at all



'Listen to the tunes': the Marantz CD-63 can boogie along with the best of them.

over enthusiastic, player that will suit warm or neutral partnering equipment. Its ace card is a sense of timing that players costing two or three times as much struggle to attain. And it kicks butt.

Jason Kennedy

Marantz Hi-Fi (UK) Ltd.  
Kingsbridge House, Padbury  
Oaks, 575-583 Bath Road,  
Longford, Middlesex UB7  
OEH. ☎ (0753) 680868

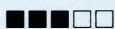
**VERDICT**

Marantz CD-63

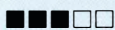
- ▲ It boogies very well and just refuses to be ignored.
- ▼ Not as listenable in the long term as some rivals.

▶ **£249.95**

**SOUND QUALITY**



**VALUE FOR MONEY**



**INTERCONNECT CABLES**

**The Chord Company  
Solid DIN**

The hi-fi cable and interconnect bandwagon has been rolling for nearly 20 years, but one group of consumers has remained marginalised. This is the large and still steadily growing band of Naim amplifier users.

For various, well justified, reasons, Naim amps use DIN plugs almost exclusively. Audiophile interconnects, however, invariably

come terminated with phono plugs. Would be experimenters therefore face the compromising prospect of using some sort of adapter.

Besides being based in the same cathedral city of Salisbury, The Chord Company has always had informal links with Naim Audio. Although standard phono leads and some very interesting flat speaker cables are all part of the product mix, the company has found a useful niche producing leads for Naim users who want to incorporate non-Naim components.

The Neutrik phono terminated *Solid* (£130 per terminated metre) was firmly Recommended in our 1992 Interconnect Guide. Sourcing and soldering up a decent quality DIN plug is a little more difficult, so the *Solid DIN* comes out at £135. This is well above the budget bracket, but a lot less than the interconnect cable high-end.

Like a couple of other designs (NVA, Cogan-Hall), the *Solid* uses comparatively rigid copper tubing for its outer sheath. This approach is fine in a semi-permanent set up, and confers superior immunity from vibration.

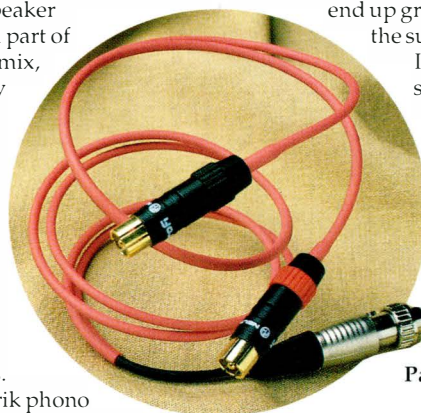
As a Naim amplifier user myself, I can't claim great experience in different interconnects,

for the reasons mentioned above, but have found that the *Solid* offers a significant improvement over Chord's less expensive cables in various respects.

Transparency, sweetness and dynamic range, particularly in the bass, are just the first that spring to mind. They're not dramatic improvements, but they're the sort of subtle advances that end up grabbing you by the subliminals.

If you've got a serious Naim-based system and also use non-Naim sources, persuade your dealer to let you spend a *Solid* weekend.

Paul Messenger



The Chord Co. 30A Sarum  
Business Park, Portway,  
Salisbury, SP4 6EA.  
☎ (0722) 331674

**VERDICT**

Chord Solid DIN

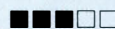
- ▲ Lovely coherence; splendid dynamic range.
- ▼ High mechanical stiffness can be awkward.

▶ **£135.00**

**SOUND QUALITY**



**VALUE FOR MONEY**



in my experience. As long as you are not intent on raising the roof, the system sounds pretty meaty and more than capable of dealing with the thumpy bass of *Blue Lines* by Massive Attack. Yet it's also capable of handling the subtle legato of Gorecki.

There are packaged systems that sound better, but they invariably cost considerably more than the little *D-90*. Hand picked components at the price will probably make a package that will challenge its sonic performance as well — but that's not the point of the *D-90*. For those who want a complete system, but still want a good sound, this has to be one of the best options.

Alan Sircom

Hayden Labs Ltd, Hayden House, Chiltern Hill, Chalfont St. Peter, Bucks SL9 9EW.

☎ (0753) 888447

## VERDICT

Denon D-90

- ▲ Looks cool; sounds great; no gimmicks.
- ▼ Better sounds are possible from well-picked separates.

▶ **£699.99**

### SOUND QUALITY

■■■■□□

### VALUE FOR MONEY

■■■■■■

*Don't judge a preamp by its cover; Concordant's Exhilarant has a few surprises up its hardwood sleeve.*



## PREAMPLIFIER

### Concordant Exhilarant

Occasionally, a product comes along which makes this reviewing lark seem worthwhile. The line level Concordant *Exhilarant* preamplifier, at £900, is just such a product.

In a wooden case, with dark blue front panel and gold piping, the chunky *Exhilarant* looks like a relic from the late sixties, but at least it's a change from the usual 19 inch matt black wonder, and you get used to the styling very quickly. Also, in complete contradiction to an almost universally accepted norm, the right channel sockets are on top of the left.

However, any misgivings melt away as soon as the *Exhilarant's* volume control is warm to the touch. Place a CD in the tray and suddenly it's several hours later and your entire CD collection is scattered across the living room carpet. Superb at conveying the flow of any music, the *Exhilarant* adds only a little warmth in the process.

Most stunning is the sense of rich naturalness about any performance. After playing with the *Exhilarant* for a while, most preamplifiers seem to synthesize the recording by comparison. The nearest thing to a downside

about the sound is the imagery. This is tight but lacks some stage width. But it has a depth to the soundstage which is staggering, although it may not appeal to everyone.

Finally, a healthy by-product of the Concordant design is that the tape loop uses every valve in the preamplifier, resulting in recordings with uncanny richness.

If you are serious about making music, and especially if you are a bit of a line level valve fan, you owe it to yourself and your system to listen to the *Exhilarant*.

Alan Sircom

Concordant Audio, 14 Glyn Close, Barwell, Leicestershire LE9 8GL. ☎ (0455) 843752

## SYSTEM TWEAK

### Gryphon The Exorcist System Demagnetiser

*The Exorcist* (£79.90) is a rather neat extruded affair, battery powered, about the size of a remote control and equipped with a pair of phono sockets and a switch.

To use, connect it to a line or tape circuit on your amplifier, switch on, and crank up the volume to deliver a 1kHz steady state signal which dies away after 35 seconds.

This AC signal is supposed to eliminate any residual magnetism in nickel and steel which may be found, says Gryphon, in connectors, component pins, and even PCB track and cables. How does this material become magnetised? Apparently as a result of DC turn-on thumps, or inside amplifiers from continuous low level DC leakage.

Accepting, for the sake of argument, that the problem has been correctly identified, I would still argue that *The Exorcist* is the wrong solution. My objection is not that the Gryphon's signal can't demagnetise effectively (though I have some doubts), but simply that if it does work, then so should ordinary music.

## VERDICT

Concordant Exhilarant

- ▲ One of the best line-level valve preamplifiers around; rich, vibrant sound.
- ▼ Styling and imagery may not be to every taste; odd rear panel layout.

▶ **£900.00**

### SOUND QUALITY

■■■■■■

### VALUE FOR MONEY

■■■■□□



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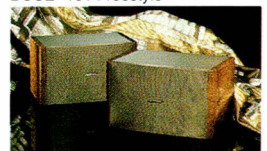
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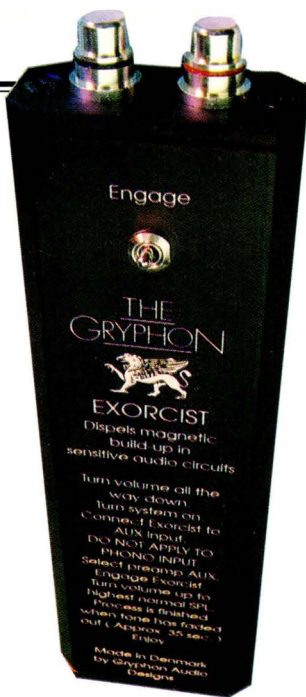
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The Exorcist. Tweaks for the demonically possessed.

Indeed it could be argued that music, whose spectrum approximates to pink noise, and which consists largely of transient signals which die away comparatively slowly, should be even more effective.

Empirically, *The Exorcist* did seem to work. Using a rather messy sounding Linn/Naim/Rega system, it had the effect of improving clarity and instrumental separation. Then I realised that having preconditioned my ears (temporarily giving my hearing a 1kHz notch), not forgetting the speakers with the high level test signal, it would have been remarkable if I hadn't heard something of the sort.

Sure enough, when I took precautions by blanketing the speakers during demagnetisation, I found myself unable to consistently identify differences. The same test was inflicted on a couple of visitors, and was repeated with three systems of varying capabilities with similar results.

Alvin Gold

Acoustic Energy Ltd. 3A Alexandria Rd. London SW20 0DE. ☎ 081-840 6305

## VERDICT

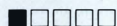
Gryphon The Exorcist

- ▲ Robustly made.
- ▼ For some reason, a phrase containing 'rope', 'money' and 'old' springs to mind.
- ▶ **£79.90**

### SOUND QUALITY



### VALUE FOR MONEY



## TURNTABLE

### Moth Alamo

This turntable was supposed to be a part of the four deck group test in issue 127, but had to be exchanged for the more expensive Rega *Planar 3* at the last minute. Still, using the Rega instead of the £175 *Moth Alamo* kept things in the family, as the *Alamo* is manufactured by Rega to Moth's specifications.

In fact, replace the MDF platter with a thin glass one and all the red Moth splodges with green Rega ones and you have something very similar to the popular £198 Rega *Planar 2*.

This is



no bad thing, as the *Planar 2* is probably the best built deck at the price, and the *Alamo* is every bit as well made as its illustrious cousin.

It is not supplied with a cartridge as standard. Moth believes that it can support a surprising variety of decent needles. However, it must be remembered that adjustment of vertical tracking angle is impossible to alter on this arm without the addition of arm-base spacers, so be careful with the choice of cartridge.

A bright and detailed performer, the Moth suffers from a thuddy, ponderous bass, probably caused by the platter material. With the right music, such as the latest Rickie Lee Jones LP *Traffic From Paradise*, the turntable can make the treble soar, in the manner of the best decks.

With less than perfect material, however, this can soon turn into harshness. Playing some industrial beats from Bandulu pushed the treble a little too far forward, while the bass was deep but stodgy, blurring synthesised staccato bass notes.

My only concern is that it is not significantly better than the com-



## PRE/POWER AMPLIFIER

### Orelle SC-200 & SP-150

Orelle has been around for a while — not long enough to become jaded, but long enough to have proved itself at the sharp end. The company produces a range of nine products (and counting), at the heart of which are a number of amplifiers, including a preamplifier, the SC-200, and two power amplifiers, the 100 watt SP-200, and the 75 watt SP-150. The SC-200 and SP-150 combination assessed here costs just under £900, which makes them relatively affordable as pre and power amplifiers go.

Sobriety is the name of the game here. Both units dress down, with international type symbols on the minimalist controls, and a total of six line inputs (phono boards are available to convert one input for MM or MC cartridges), one tape circuit and two preamplifier outputs, one passive and the other at a higher level from a gain/buffer stage. Headphones can't be connected, but there are few other surprises, and build quality is more than commensurate with the price.

Although not as solid or as dramatic sounding as some of its peers (naming no Naims), the Orelle's rather subtler virtues bring their own, perhaps more cerebral rewards. The Orelle is less grainy than a number of its more celebrated counterparts, yet it is unusually clear and transparent, fine detail and expressive cues being well articulated.

Stereo imagery follows a similar pattern. The Orelle is not as up-front as some, but it is capable of laying an image down in

petition. A deck like the Project 0.5, for example, is of a similar quality sonically, at a lower price. Despite this fact, the *Moth Alamo* is an excellent turntable for the money, and is superbly well built. If you want a simple, unassuming deck without spending a fortune, it's got to be a strong contender for your money.

Alan Sircom

Moth Marketing, 10 Dane Lane, Wilstead, Bedford MK45 3HT. ☎ (0234) 741 152

## VERDICT

Moth Alamo

- ▲ Simple and well built; clear, well defined treble.
- ▼ Can sound harsh; bass is thuddy and ponderous.
- ▶ **£175.00**

### SOUND QUALITY



### VALUE FOR MONEY



space, making good use of depth to portray distance and scale, and keeping a firm grip on the positions of individual instruments.

The package isn't designed for reactive, difficult or ultra-wide bandwidth loudspeakers, but used as intended it is a fine and, above all, musical performer.

**Alvin Gold**

*Orelle Hi-fi,  
Unit 11, I-Mex House,  
6 Wadsworth Road, Perivale,  
Middlesex UB6 7JD.  
☎ 081-908 4126*

## VERDICT

Orelle SC-200 & SP-150

- ▲ Crisp, spacious sound; good build and reasonable price.
- ▼ Occasional lack of drama; needs another tape circuit.

▶ **Combined price: £898.00**

### SOUND QUALITY



### VALUE FOR MONEY



## LOUDSPEAKERS

## Goodmans GLL Arena

The £90 *Arena* loudspeaker from Goodmans is a novel design. It has no voice coil as such, so you can't blow it up with a big amplifier, but instead uses Inductive Coupling Technology (ICT) to span the full frequency range.

Standing just eight inches tall, the diminutive *Arena* bridges the gap between hi-fi and home cinema needs with a sound that, at high levels, almost fills a medium sized room. Yet even at low volumes, fine detail is easy to follow.

The performance of the *Arena*

varied with the style of music. Although it had sufficient attack, some of the heavier pieces I played sounded slow and ponderous. This was especially true of a track by Snoop Doggy Dog. The *Arena* had no problems with gentler tunes but revealed a limited ability to cope with music that required lots of welly.

Video sound was handled slightly better. The *Arenas* image quite well, with a full bodied soundstage which presented dialogue, in particular, very capably. The *Arena's* magnetic shielding also allows it to be used as a centre channel speaker.

However, there are a few reservations. Bi-passing all the tone controls on my amplifier, for instance, left the *Arenas* sounding rather sharp at high frequencies.

The *Arena* is well suited to surround and centre channel applications. It can handle a lot of power without difficulty and is small enough to be used in the most unusual of locations.

**Rob Tribe**

*Goodmans Loudspeakers Ltd,  
3 Ridgeway, Havant,  
Hants PO9 1JF.  
☎ (0705) 492777*

## VERDICT

Goodmans GLL Arena

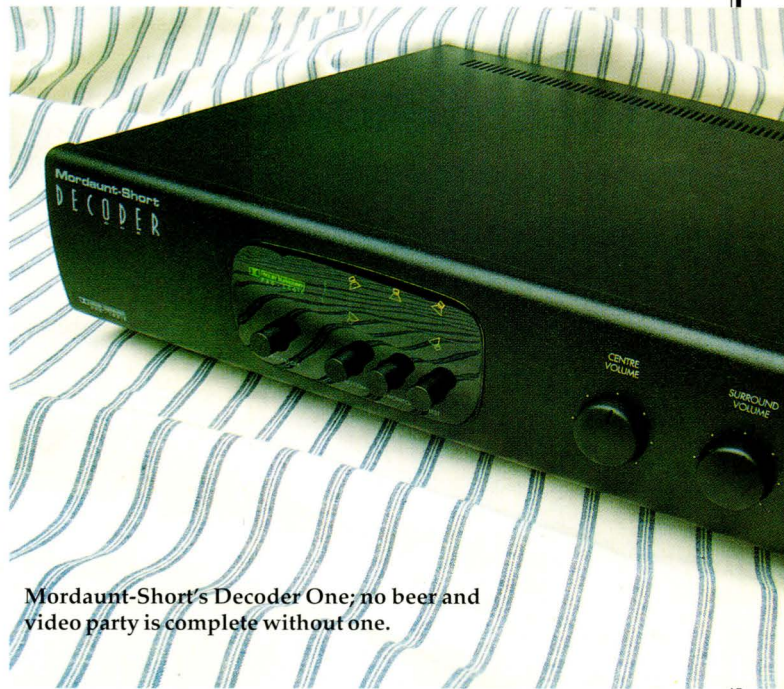
- ▲ Loud; powerful; big sound.
- ▼ A bit choosy and 'it ain't got that swing'.

▶ **£89.95**

### SOUND QUALITY



### VALUE FOR MONEY



**Mordaunt-Short's Decoder One; no beer and video party is complete without one.**

## HOME CINEMA

## Mordaunt-Short Decoder One

The £299 Mordaunt-Short *Decoder One* had a chequered start to its career. Some of the earliest samples had a degree of noise and digital distortion, especially noticeable in the rear channels with sensitive speakers. One or two slight modifications later and the *Decoder One* is back and ready for business.

It's a simple add on Pro-Logic decoder, intended to be used in the tape monitor loop of a conventional stereo amplifier. The features are rather basic; it lacks remote control and DSP options. However, it includes a passive volume control and built-in amplifiers to drive the centre dialogue and rear surround channels. These amplifiers may be bypassed and an active

subwoofer can be accommodated.

It makes for transparent Pro-Logic decoding at a reasonable price. It's more than capable of subtlety and sophistication, as well as the boom and blast required for today's movies. The hiss is still there, especially from the rear channels, but in use it was hardly noticeable.

As an experiment, I threw a beer 'n' video party, and by the end of it even the cynical gadget haters were sold on the idea of a room full of speakers. Even a hardened hi-fi buff was considering adding the *Decoder One* and a bunch of Mordaunt-Short CS-1 loudspeakers as soon as possible.

The *Decoder One* could prove to be the AV amplifier for the people. Although the lack of remote control is a bind, its flexibility and upgradability, allied to a well balanced overall sound, looks set to make many a hi-fi system take on a whole new dimension.

**Alan Sircom**

*Mordaunt-Short Ltd, 3 Ridgeway, Havant, Hants PO9 1JS.  
☎ (0705) 407722*

## VERDICT

M-S Decoder One

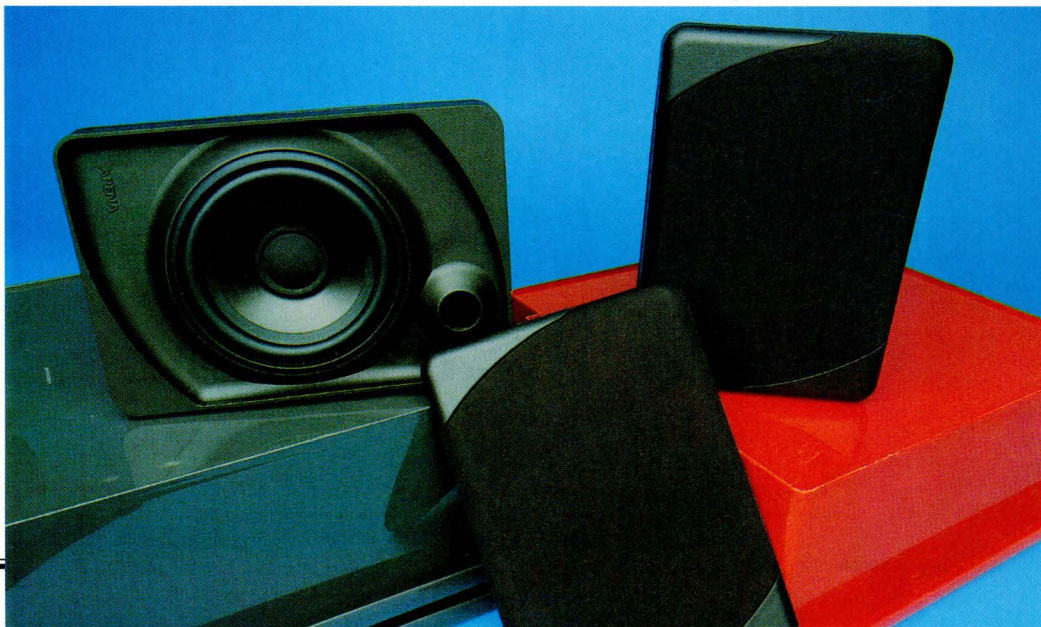
- ▲ Flexible, upgradeable decoder; very transparent.
- ▼ Somewhat hissy; lacks the convenience of a remote.

▶ **£299.99**

### SOUND QUALITY



### VALUE FOR MONEY





• ALBUM REVIEW • ALBUM REVIEW •

**Quad CD OP-1**

The best of Opus 3 selected for Quad

Equipment demonstration discs are perhaps rather passé these days; we're all too grown-up and mature to sit there listening to our hi-fi for the sake of sheer sound quality. Or are we? Isn't there still something thrilling about hearing high class sound through a top notch system? I'd like to think so . . .

Opus 3 is a small Swedish label which produces LPs and CDs of extremely high quality. Its recordings are made using just a single-point stereo microphone, to achieve outstanding clarity and naturalness along with excellent dynamics and bright, vivid timbre.

Opus 3 still prefers recording on analogue tape, even for CD issues. And listening to this diverse sampler one can understand why. The best tracks have the quiet background of good digital, with the ease and definition that only analogue seems to be able to give.

The disc contains 13 tracks in all; five jazz, six classical, and two folk. The proceedings get off to a splendid start with an arrangement of Rossini's *Barber of Seville* overture for winds. Beautifully recorded, the sound has space, richness and real presence, producing an immediate balance without sounding too close.

A movement taken from Larsson's *Concerto for Double Bass and Strings* is another highlight, and there are a couple of good tracks which feature guitar duo and guitar quartet. The sleeve notes not only comment

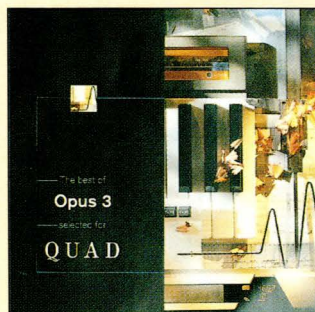
on the music, but also tell you where the recording was made and even how the microphone was positioned.

Since this sampler is made for Quad, Opus 3 points out the advantages of 'boxless' dipole speakers (like Quad's original ESL and ESL-63), and how this relates to the dipole 'figure-of-eight' pattern stereo microphone design.

The jazz tracks are outstanding too. A wide range is offered from small scale combo stuff to 1920s classical jazz using period instruments. My favourites include *Body and Soul* from Lars Erstrand's outstanding LP/CD *Lars Erstrand and Four Brothers*, and *Nobody's Blues But Mine* by Thomas Ornberg's Blue Five. The latter sounds incredibly big and three dimensional. It's a very good test track for evaluating any CD-based hi-fi system.

A definite 'must buy' then, but be warned. After hearing this sampler you'll probably want the parent discs too.

Jimmy Hughes



AV AMPLIFIER

**Rotel RSP-960AX AV Preamplifier/Processor & RB-956AX Power Amplifier**

Stepping smartly into the yawning gap for an affordable but serious AV amplifier, the £725 Rotel 960AX/RB-956AX combination looks ready to fulfil many heartfelt wishes. Packaged as traditional hi-fi separates, it lacks the tackiness and excessive complication that afflicts some over-dressed AV hardware.

Flexibility is its middle name (Rotel 'flexibility' RSP-960AX and RB-956AX has a certain ring about it, don't you think?), due largely to the peculiar configuration of the power amplifier. In one conventionally proportioned package, there are three separate stereo amps, bridgeable in pairs, giving 6x30 watts, 3x90 watts output, or a combination of four or five channels output.

The processor/preamp can be used as an add-on processor with an existing stereo system, or as a fully fledged preamplifier. In the latter role, it lacks the more gimmicky attributes of other AV amplifiers, and has just five inputs, the video ones with composite and the higher quality S-Video signal routing. A

subwoofer output is equipped with switchable 80Hz or 120Hz (nominal) low pass filtering, a

the reality doesn't quite live up to expectations. As a stereo amplifier, using two bridged outputs from the power amp, the Rotel sounded

well on the way.

The real disappointment, however, is the Dolby Pro-Logic decoder section which lacks the ability to image sharply while reproducing a large ambient soundfield. The processing seems somewhat leaden and poorly focused, giving the package a rather old-fashioned, lumbering feel.

Alvin Gold



real boon with passive subwoofers.

This evident concentration on the essentials at the expense of gimmickry should be a dream ticket for any audiophile interested in home theatre, but

clean and reasonably transparent. If it is not quite on a par with Rotel's widely known and liked dedicated stereo amplifiers, it is, at least,

Rotel UK, Gamepath Ltd, 25 Heathfield, Stacey Bushes, Milton Keynes MK12 6HR. ☎ (0908) 322707

**VERDICT**

Rotel RSP-960AX/RB-956AX

- ▲ Audiophile sensibilities; amazing versatility.
- ▼ Underwhelming Dolby Pro-Logic circuit
- ▶ **Combined price: £725.00**

**SOUND QUALITY**

■■■■□□

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## ECHOES FROM THE PAST

There are so many new brand names in the hifi world these days, it's reassuring to find some old favourites re-appearing in the British market. One of these is **Sugden**, who have been doing well in export markets for many years but are now getting back into the UK market. These hand-built units are superb to look at, particularly the '51' pre-power units, and produce some of the sweetest sounds around. Also worth an audition is their **SDT-1 CD Player**.

Then there is **Electro-companlet** amplifiers which many of you may remember from the late '70's when their 25 watt amplifier won rave reviews and a wide following. The new range from this Norwegian company include phono stages to 250 watt dual mono balanced power amps plus a 20th anniversary limited edition per-power combination with rare blue stone fascia at £4,972; only 400 available worldwide - so don't delay!

Another old favourite of our's was the American Dahiquist loudspeakers which are now available here in an improved build standard as the **Alon** range produced by Cori Marchisotto - chief design engineer at Dahiquist for 15 years - of Acarian Systems. The range starts at the **Alon I** for £1,300 and are now in stock with the **Alon II** at about £1,900 due shortly. Their top model, the Phalanx, costs a mere £25k, so we haven't got that yet.

So do come and hear some of the most interesting products around; we always have something out of the ordinary.

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# Pink Triangle DaCapo

It is becoming increasingly clear that our proud turntable manufacturers can no longer exist on analogue alone. Pink Triangle is a case in point, boldly taking on the digital Premier Division with the £1,450 *DaCapo* D/A converter (DAC).

For analogue die-hards who lament the lack of upgradeability and tweekery available with CD players, the *DaCapo* may be the key to their conversion. Dealers will have a

*Pink Triangle has come up with a digital-to-analogue converter that Ian Ward believes may well make analogue purists think again.*

Toslink, AT&T, 110ohm balanced, or four of the same if you so wish. The input/output blocks are also modular, allowing for extra ones to be added as further digital sources are purchased. The final icing on the *DaCapo* cake is the optional extra of an add on DC battery power supply — yours for £1,500.

Much has been

connection over optical when it comes to linking transport and *DaCapo*.

The fascia is simple and uncluttered, the appropriate LED lighting up for the digital input being used. There are also LED indicators for standby, de-emphasis, battery operation, and signal to show that *DaCapo* has locked onto the transport.

What we have so far then is a revolutionary DAC which, via its modular upgradeability, answers one of the CD medium's main criticisms, that of in built obsolescence. I would also largely agree with PT's claim that differences in transport quality are less apparent. My own experiments suggest that the *DaCapo* partnered with the transport section of a respectable £300-£600 integrated CD player will outperform a dedicated Transport/DAC costing £1,200-£2,000.

Indeed, I know of one *DaCapo* owner who preferred the sound of the standard Pink Triangle DAC driven by the relatively modest Pioneer PD-S901 CD player as

choice of 18 and 20-bit digital filters to hand at the demonstration via interchangeable plug-in blocks, allowing listeners to express a preference. Indeed, two further filters have just been made available, a 22-bit Yamaha type along with the latest Philips TDA1307. It therefore follows that future filter developments will be available as straightforward modular upgrades — preferable to having an obsolete DAC.

Perhaps the most innovative development under the lid is Pink's own one-bit converter. Contained within a rectangular can, of similar dimensions to the filter blocks, discreet components are utilised in preference to relying on off-the-shelf proprietary chips. To my knowledge, Pink Triangle is the first company to design its own DAC in this fashion. Certainly no secrets are given away as the DAC block is welded to the circuit board while the internal components are sealed within a resin compound.

Up to four digital inputs/outputs can be specified; phono/BNC coaxial, fibre-optic

**The *DaCapo* melds into any system, no matter its origin, and works its magic.**

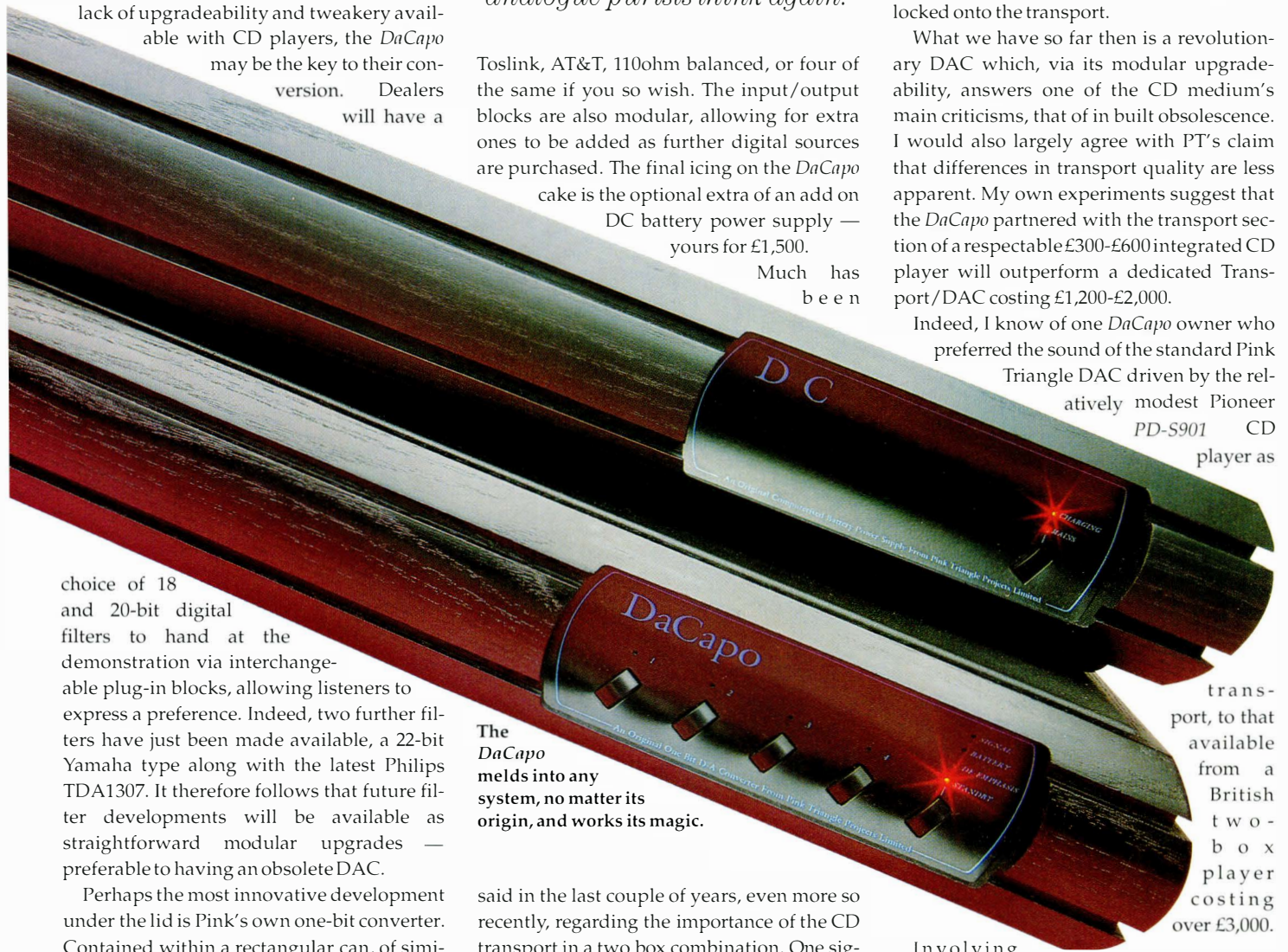
said in the last couple of years, even more so recently, regarding the importance of the CD transport in a two box combination. One significant claim made by Pink is that the *DaCapo* reduces the quality differences between transports. This is accomplished by reclocking the incoming datastream via three phase-locked loops thereby reducing jitter to miniscule levels.

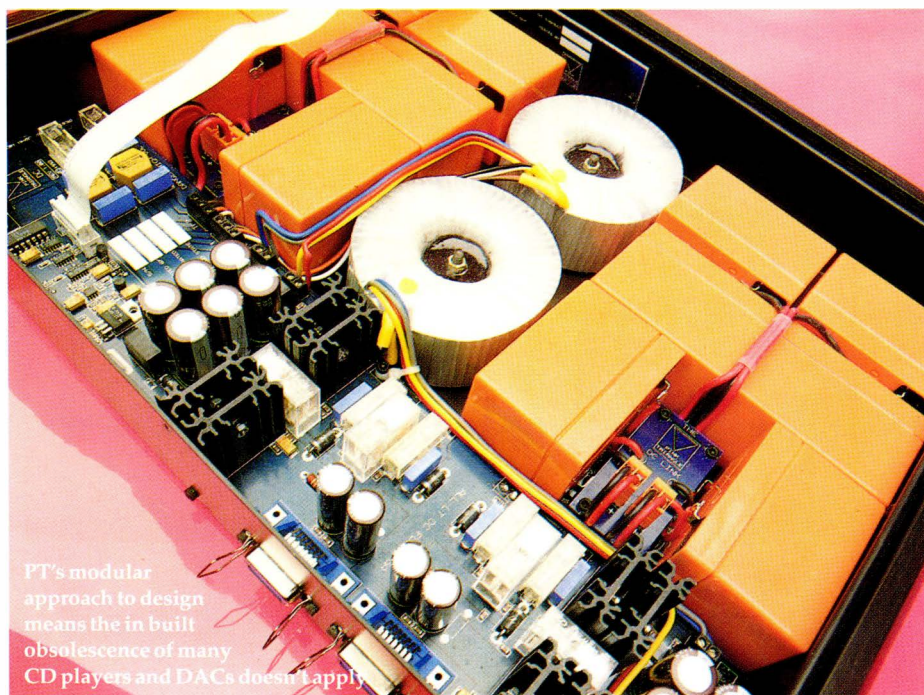
Conveniently, Pink has a matching CD transport due for imminent release. In the meantime, the company's preference is for Japanese designed transports over Philips types. Pink also prefers to use coaxial digital

transport, to that available from a British two-box player costing over £3,000.

Involving, unflagging, detailed, effortless, rhythmically quicksilver — the *DaCapo* is all of these things and more. It presents a wholly natural wash of sound that allows the listener to sit back and enjoy the music without nit-picking over whether an analogue or digital source is being used. Blinkered turntable fanatics, take note.

The string tone from period instruments on classical CDs can vary from mildly strident and acidic, at best, to bright and piercing, at worst, depending on the quality of CD





PT's modular approach to design means the in-built obsolescence of many CD players and DACs doesn't apply.

# Michell Alecto, Argo & Iso HR AMPLIFIERS

*Jason Kennedy assesses Michell's high-end amplifiers. They look very distinctive, but do they have an outstanding sound to match?*

player in use. However, with the *DaCapo* the slightly harder tone is thankfully evident without searing brightness or digital edge. The listener is left to revel in a seemingly authentic period performance.

The *DaCapo's* knack of extracting subtle nuances from a recording is breathtaking, helping to create an atmosphere around the performance. The very different ambience on the live albums by Eric Clapton, *Unplugged*, and Jethro Tull, *A Little Light Music*, were easy to detect. The intimacy of the Clapton venue contrasted markedly with the much larger scale venues of the Tull tour.

Similar levels of resolution were there to behold when the *DaCapo* tackled a disc of early church music. The atmosphere of Allegri's *Miserere* (Tallis Scholars) came alive as I have never heard it before, Alison Stamp's solo treble soaring toward the Merton College Chapel rafters. The Church of the Holy Trinity in Toronto was the next venue to melt into my listening room, only this time the music was a little more up to date, courtesy of the Cowboy Junkies. The intimacy and realism of this live CD are a test for any system. Interspersed among the performances are a variety of ambient noises such as tapping feet, counting in time and even creaking radiator pipes. These were resolved with uncanny precision — a most invigorating live experience.

## An argument for batteries

Just as I was becoming accustomed to the capabilities of the mains powered *DaCapo*, the DC battery power supply arrived. The battery pack is of the same dimensions and rounded black ash style as the *DaCapo* itself. Conversion for use requires just a little minor surgery which your dealer will see to.

The batteries supply between 16 and 30 hours of music from full charge. Recharging

is automatic, the *DaCapo* switching to a back up supply to give the batteries chance to recover.

The DC battery power supply entirely eliminates any physical connection to the mains in the digital to analogue conversion stage, totally preventing the unwelcome intrusion of RF mains spikes on the DAC's voltage supply rails.

The clarity, invigorating speed and timing of the standard *DaCapo* are all taken several rungs up the ladder with the two-box version. The Tatiana Nikolayeva interpretation of Shostakovich's *24 Preludes and Fugues* (Hyperion) was stripped bare. Each note stopped and started with impressive precision. The feeling and intent of the pianist could be sensed as each piece changed pace and intensity. KD Lang's richly recorded *Ingenuie* proved to be a very heady mixture indeed with the two-box *DaCapo*. The slower track, *Wash Me Clean*, witnessed Lang's graceful vocal delivery hovering pinpoint and spectre-like between the speakers.

As far as filter differences go, the 18-bit has a sweetness and purity difficult to resist, while the 20-bit offers a slightly more dynamic, up front presentation. I used a variety of amps and speakers and found that the *DaCapo's* magic gelled into the system no matter what its origin or reputation. Whether you are one of the last remaining resistors of CD or a committed CD enthusiast, the two-box *DaCapo* begs to be auditioned. For a first digital product this is an astonishing achievement and, what's more, PT can follow this performance simply and effectively via their modular approach.

Perhaps the last word should go to another *DaCapo* owner who returned his registration card to Pink Triangle with the words, "The digital versus analogue debate ends here,".

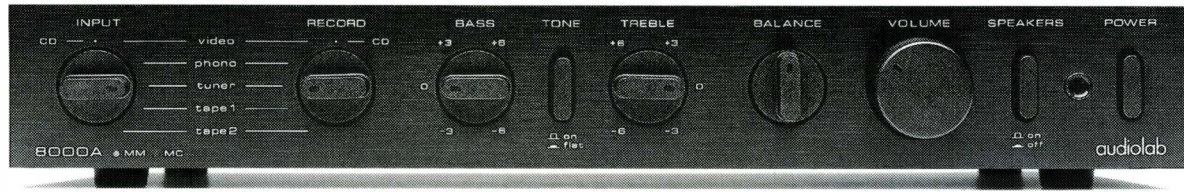
Long renowned for his turntables, John Michell is as aware as any of us that one grey day the record player will be as much an anachronism as the horn gramophone. The fact that he still sells quite a few turntables is as much of a surprise to him as it is to anyone.

However, given that he can't rely on the vinyl market forever, John decided to branch out into electronics. Starting three years ago with the *Iso* phono stage and latterly adding the *Argo* line preamp and *Alecto* power amps, he now has the makings of a complete amplification system.

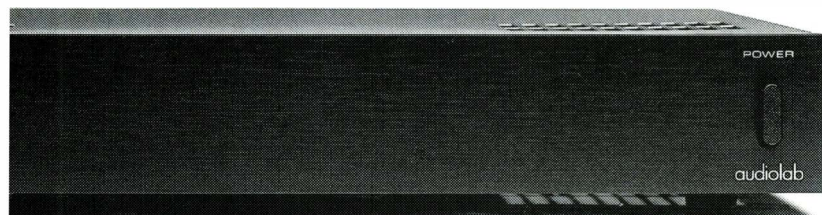
For Statements this month, we have gathered the HR (high resolution) versions of the *Iso* (£850) and *Argo* (£1,300), which come with chunky *Hera* power supplies, and the 100W *Alecto* monoblok power amplifiers (£1,879).

Michell electronics are characterised by the extensive use of black acrylic casework, a finish that looks great, as long as you live in a dust free environment, but which is mainly chosen for its electrically inert nature — you

# The Audiolab 8000A Integrated Amplifier



The Audiolab product range:  
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 8000M Monobloc power amplifier  
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**AUDIOLAB**

don't get problems with eddy currents and the like. The HR versions of the *Iso* and *Argo* are distinguished by bevelled plinths which add a bit of mass to these lightweight units and definitely improve their looks. The 350VA *Hera* power supply is available as an upgrade for the standard *Iso* and *Argo* and comes in a black medite case. These hefty lumps explain why the phono stage and preamp are so light. They are kept in their own cases for electrical isolation reasons.

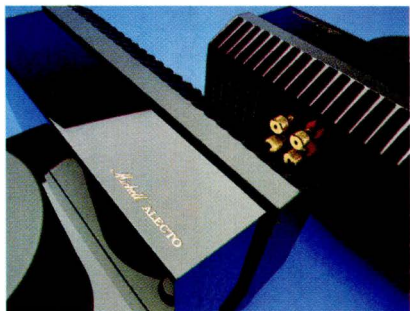
The appearance of Michell amplifiers is the work of John Michell. The internal electronics, however, were designed by Tom Evans, now of Trichord Research, who selected the higher specification components for the HR versions of the *Iso* and *Argo*.

The *Iso* HR I initially borrowed was set up for an Audio Note *lo* cartridge, an unenthusiastic candidate for active phono amplification with pitiful output and a penchant for desperately low input impedances. However, Tom was not perturbed and managed to set the *Iso* up so that it worked very well indeed. Recently though, I had to change cartridges and ended up using a regularly set-up *Iso* HR with a van den Hul *Grasshopper*. The decent output of this needle proved to be a very happy match that made some magnificent noises.

There's not a great deal to be said about the *Iso* HR. It's a small brick shaped unit with input and output sockets, and an earth binding post. Beyond that it needs to be kept away from stray magnetic fields, such as those that emanate from transformers. The way to find a good site is to turn the volume up leaving the needle out of the groove and move it around until you find the quietest place — a bit like a step-up transformer.

The *Argo* HR is a minimalist, line only preamp with six inputs, two tape and two main outputs. These are labelled both right and wrong way up which makes them more legible when craning over the top of the unit.

The *Alectos* are distinctively styled with a substantial transformer under the cylindrical front casing. The electronics lurk under a translucent acrylic cover that attaches to the substantial heat sinking which forms two of



**Not just another black box — the styling of the HR amps from Michell is very distinctive indeed, as well as being functional.**

**It's the complete antithesis of the analogue/tube enthusiast's perception of the recording world — what the heck is going on?**

the *Alecto's* three feet. The front support is an adjustable, conical affair that acts as a mechanical earth for the transformer. The connector array consists of phono input and two pairs of chunky Michell binding posts for the speaker cable. The aesthetic appearance may not be to everyone's taste but it's a stylish as well as functional design. One thing's for sure it's never going to be mistaken for just another black box.

### Coherence and power

I listened to this set up with a variety of sources and speakers and compared it with tube driven Audio Innovations and Audio Note amplifiers. In every instance, the degree of coherence and understated power had me engrossed in the performance. I even started to listen to it in preference to tubes — which, for me, is really saying something.

The combination of coherence, bandwidth and high resolution really made the most of good source material. Compared to good

tube components, I missed a degree of midrange clarity and dynamics but found that the extra bass extension and control, coupled with an extraordinary sense of order in the presentation, almost made up for this. Tom argued that this midrange clarity is just an anomaly of tube amplifier tonal balance, and the fact that they are rarely as good at the frequency extremes almost bears this out.

### Zappa lives again

The Michell amps proved remarkably low on character. Sometimes I found them a little dark, which is to say they weren't bright in the way that a lot of solid state designs can be. With the highly efficient Horning *Agathon* speakers, it was often necessary to play the music reasonably loud before it came to life.

The more power absorbent ATC *SCM10s* proved to be better suited in this respect, almost working better at low rather than high levels. These speakers were in a lot of ways very well suited to the *Alectos*, responding with great finesse to the subtleties in recording quality revealed by the source. The combination of Wadia 6, Michell amps and ATC *SCM10s* was one of the best digital systems I've used. It revelled in Frank Zappa's excellent live performances and proved to be the first system to make his modern recordings sound better on the whole than his older ones. It's the complete antithesis of the analogue/tube enthusiasts perception of the recording world — what the heck is going on?

As I hope you can tell, I thoroughly enjoyed Michell's top of the range amplifiers. They are extremely capable, subtle and coherent and, as a result, let the music speak for itself in a very intelligible and entertaining way. A positive contribution to road safety.

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# HELP!

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Each month we're giving away a one metre pair of Isoda interconnect cables to the writer of the most interesting letter. If you've any queries send them to: *Hi-Fi Choice* (HELP!) Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ.

## Bass on a budget

I'd like to upgrade my system which consists of a Rotel RA-920AX amp, Marantz CD-42 CD player, Dual CS503-2 turntable, Denon DRM-510 cassette deck, and Hitachi F-770 Nicam VCR.

My Goodmans Maxim 2 speakers lack bass response, and I've looked at the JPW subwoofer for improved bass at a low cost, but would I do better to save for speakers like the Epos ES11s?

**A Cook,  
Byker, Newcastle-upon-Tyne.**

*In real terms, your little Maxim 2s do lack deep bass, but sometimes a perceived lack of bottom end can occur because the treble is rather forward. Adding a subwoofer would give some improvement, but probably won't be the complete answer. In any case, subwoofers can be tricky to site — especially if you're listening in a small room and haven't got the chance to sit well back from the speakers.*

*Epos ES11s would certainly be worth hearing, but they're not noted for producing deep, full bass. The real wood veneered JPW AP3 offers very good bass for its size, and is well suited to being used under cramped listening conditions close to rear walls.*

## QUERY OF THE MONTH

### Wow! What a problem

I have a cassette based system comprising Rotel RA-930AX amplifier, Mission 760i speakers and an Aiwa AD-F810 tape deck. My problem is wow; it's so bad, it makes me feel sick.

There's an intermittent problem on the Aiwa and when I sent it for repair I was told that the capstans are worn from 'heavy use'.

Replacing them improved the problem somewhat, but not completely. Should I now try having the motor replaced? Or would I be better off buying a different machine altogether like a Nakamichi DR-3 or Sony TCK-611S that will withstand my so-called heavy use (20hrs per week at most)? I have a lot of tapes and can't afford CDs.

**Tom Ang,  
London SW9.**

*If you've a sensitive ear for pitch, even the best cassette decks can be found wanting. The music you listen to is also important; certain instruments (classical guitar, clarinet, piano) tend to highlight wow more readily. Some cassette decks seem more prone to wow than others, and much depends on the quality of the sample you buy — be selective.*

*Dual capstan machines like*

*your Aiwa are particularly finicky. This arrangement gives you a double flywheel and should (when working correctly) ensure that speed fluctuations are cancelled. However, it is also possible for the two flywheels to compound the problem,*

*increasing wow.*

*Cleanliness is very important with dual capstan decks, and the slightest bit of dirt on either capstan throws the system out of kilter.*

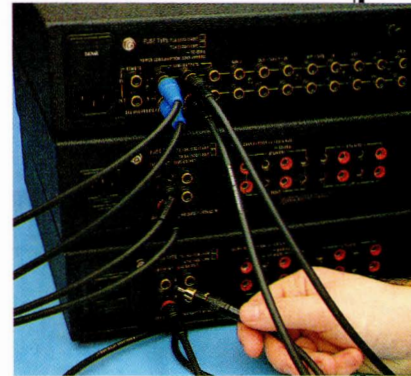
*Can you be sure your tapes are blameless? If they were recorded at a time when the Aiwa was playing up, the wow would be on the tape itself. So, no matter how perfect the playback, you'd still hear speed fluctuations. It's also possible you've got an Aiwa that is less tightly specified than the best examples.*

*It might be worth having the belts and pulleys replaced, and all driving surfaces cleaned. If all else fails, audition a replacement cassette deck, preferably using tapes from your existing collection. It's important that any new machine you buy has a head azimuth compatible with your Aiwa, and sometimes (for reasons hard to fathom) three-head decks like yours are very azimuth-sensitive.*

*Azimuth can be adjusted, but if badly out it leads to phasey treble, and a loss of extreme top-end.*



Isoda cable is good for tape decks too.



A brazen bit of bi-amping.

## To bi or not to bi-amp . . .

The sound of my system (Yamaha CDX-550E CD player, Pioneer A-300 amp and Tannoy 603 speakers) is sweet and easy to listen to, but the bass is 'slow' and unable to resolve fine textures and rhythm.

A friend's Canon S-30 speakers had lighter 'faster' bass, but less extension than my Tannoys. I want the system to sound dynamic, fast, coherent, solid and weighty. I'm not concerned with coloration, imaging, neutrality, or warmth. I'll be keeping the Tannoys, so how can I improve my sound? Should I purchase another A-300 or an A-400 and bi-amp? Alternatively what about replacing the speaker's crossover components with better quality types, upgrading the source, or replacing my amp with one that has greater control of the drive units?

**K Kiyokawa,  
Derby.**

*Bi-amping is a possibility, but it would not be wise to mix an A-300 and*



# "BIG AUDIO DYNAMITE."



WHAT VIDEO  
P. WHAT HOME CINEMA  
BEST BUY



Just one of the many quotable quotes from a recent review of the RM3000, CS100 and M3 combination in *What Video and What Home Cinema* magazine. Not surprisingly the system was awarded a BEST BUY status. Polk Audio, one of the USA's leading manufacturers of loudspeakers, designed each of the products to work to the highest audio standards either as a combined system or as discreet components in any good quality home cinema set-up.

Now for a few more detailed comments on the system.

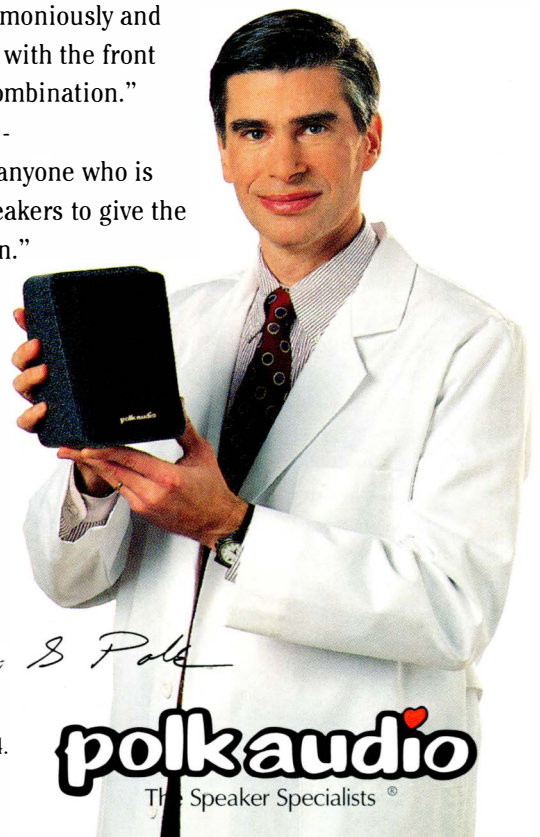
**Front Channels** - The Award-Winning RM3000 "is the first satellite subwoofer combo I've heard that actually convinces" "It sounded fantastic. Tight, sweet, deep-bassed, melodic, well-balanced." "The subwoofer ensures you get bass if you want it without disseminating any spurious midrange — very impressive."

**Centre Channel** - The magnetically shielded CS100 "does a damn good job of integrating itself with the RM3000's." "The CS100 demonstrates creditable bass and like the RM3000 satellites the dome tweeter produces a harmonious treble free from splashiness or a metallic edge."

**Rear Channels** - The M3 multi-application monitor with integrated bracket for flexible mounting "absolutely no complaints as rear effect speakers delivering music and all other content harmoniously and totally in keeping with the front RM3000/CS100 combination."

#### The Conclusion -

"I'd recommend anyone who is looking for AV speakers to give the Polk boxes a listen." Excellent advice.



*Matthew S. Polk*

All quotes are from the November 1993 issue of *What Video and What Home Cinema*.

For details and stockists of the Polk Audio range of loudspeakers, phone 0727 827311 or fax 0727 827284. U.K. distribution - Polk Audio Europe Inc., Tyttenhanger House, Coursers Road, St. Albans AL4 0PG

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Arcam Delta Twos are sophisticated beasts that will produce subtlety but aren't the first choice for clout.

A-400 as the two sound too dissimilar. There's also the danger that bi-amping will simply give you a bit more of what you've already got.

If you're into a bit of speaker DIY, you'll almost certainly achieve what you want by removing the damping from the Tannoys and fitting several Deflex Acoustic Panels. To get an idea of what they might do, try removing the damping from one of your speakers and listening to it undamped. If you like what you hear in terms of bass 'speed' and liveliness, the results will be comparable with panels fitted.

Adding Deflex panels will also give you more control and tightness, while still retaining the openness and ease of an undamped speaker. But remember that modifying equipment invalidates guarantees.

### Listening to the negative

You published my letter several issues back and advised me to listen to two amps. I tracked down a dealer who had both and chose the Kenwood 5020.

I found its sound very pleasing indeed, but then (after about four weeks) realised I'd connected both sets of speakers in reverse phase — that's to say I'd got the red and black wires transposed. However, when I wired the speakers correctly, I found I actually preferred the sound the way it was!

I've checked my speakers

internally to see if they're wired in reverse, but can't tell as there are no obvious markings. The question is, will I do any damage by using my speakers in reverse phase?

**J Slevin,  
Stockwell, London SW9.**

Experts are divided as to whether the ear can reliably detect changes of absolute phase, but when you reverse-wire your speakers you're doing more than just altering phase. You're also putting all the crossover components into the 'negative' side of the equation. It seems likely that this, rather than a reversal of absolute phase, is the reason the sound changes.

As to whether any damage might occur, it should be perfectly safe to reverse-wire your speakers in this way. Personally, I would strongly advocate reverse-wiring speakers in the way you've suggested, and have used my own system this way for several years now. One further tip; many integrated amps have two sets of speaker outlets, A and B, one above the other. Most people



use the upper set A, but often the lower B set sound better because they're closer to the amplifier's circuit board.

### Compatibility concerns

I want to buy hi-fi separates and have a budget of about £600 to £700. I've settled on a Marantz CD-52SEII CD player, but don't know what to do about an amp and speakers. I've got an old Trio-Kenwood KA-3500 integrated amplifier and a pair of Wharfedale Laser 40 speakers. Are these compatible with the Marantz, or would I be better off getting rid of them for something more up to date?

**Mr N Audain,  
Chessington, Surrey.**

The CD-52SEII should work well with your old Trio-Kenwood and Wharfedales, so why not get the CD player first and see how things sound before spending more? Having listened to the CD player via an existing amp and speakers, you'll find you're better able to

decide on what sort of sound you want from the new components.

Audition the Arcam Alpha 5, or Marantz PM-44SE, against your old Trio, if possible, and see what you think. Likewise, listen to Castle Trents, Heybrook HB-1S/3s, Rega Kytes and Rogers LS2a/2s to gain an idea of how changing speakers might help improve the sound.

### Swings and roundabouts

I'm in my late thirties, still attend occasional concerts, have two kids, a mortgage and Poll Tax arrears. My system

so far is an Arcam Delta 290 amplifier, Arcam Alpha 5 CD player and a Nakamichi DR-3 cassette deck.

I'm currently using Wharfedale E-50 speakers, but would like smaller boxes. I've short-listed Linn Index IIs, Epos ES11s, and Arcam Delta Twos.

**P McManus,  
Norwich, Norfolk.**

Your Wharfedale E-50s are quite efficient and punchy, so you may find moving down to smaller loudspeakers a bit disappointing. That said, both the Linn and Epos models you mention have reasonable grunt and are worth a listen.

The Arcams will not produce the clout you're used to but their extra refinement may be just what you're looking for. Audition the Rega Kyte as well, as these give a bright, forward balance that's probably closer to what you're used to. Bose 305s might be worth trying too.

### The ultimate goal

I have a Rega Planar 3 turntable with RB300 arm/Roksan Corus Black



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cartridge, Audiolab 8000A amplifier and Rogers LS4a/2 speakers. I think the speakers are good, and the system produces a smooth and unfatiguing sound, yet I feel it lacks realism. What should I change to get a more realistic 'as-if-you're-there' sound?

**Jose Manuel Lis,**  
Malaga, Spain.

*You can spend 10 times what you've spent on a system, and still not achieve 'realism'. Indeed, by the highest standards even the best hi-fi isn't truly realistic. You have a good, well-matched system, and to improve it isn't going to be easy unless radical changes are made.*

*The Rega turntable is the obvious candidate for an upgrade, but you'll have to spend a fair bit to better it. Roksan's Radius is a good middle-ranking turntable that should improve on the Rega without your having to spend very large sums. You could partner this with your Roksan cartridge, or perhaps go for a good moving-coil. If it wouldn't be too expensive, Orto-*

*stuffing used inside speakers which says life and immediacy from the sound. Removing the LS4a/2's internal damping and fitting some Deflex panels could be the answer to your prayers, but don't attempt it unless you're confident about what you're doing. Remember too that such action will invalidate any warranty.*

### Room restrictions

I have a Rega Planar 3 turntable with Corus Black cartridge, Marantz CD-52SEII CD player, Rotel RA-820BX4 amplifier and Celestion 3 speakers, all on Target stands. My room is 2.5x3.5m, and though I'm relatively happy with the sound of my system, it's too lightweight and bright, lacking bass weight.

I believe the weak link is the speakers. Could I use a set of floorstanders like TDL RTL 3s and get away with it in my small room? I may be moving to a larger room in the near future.

**T A French,**  
Emsworth, Hants.

*It's difficult getting a good full bass in a small room. In theory at least you need a certain size room to achieve the proper reproduction of long wavelengths — that's posh-speak for bass. Also, close listening has an adverse effect. I expect if you stand outside your room and listen, your system produces far deeper bass than in the room.*

*The TDLs would be worth trying though; they'll give you a fuller, deeper bass than you're currently experiencing with the Celestions.*

### Upgrade quandry

I am in the process of upgrading my CD player and amplifier, and would be interested in your opinions as to which would give the best performance. My budget is £1,300, and I've been advised to spend more on the CD player than the amp.

I've looked at the Meridian 506 and Arcam Delta 270, and have listened to the Arcam Delta 290 and Audiolab 8000A amplifiers.

Can you suggest anything else I ought to try in this price range?

**J McLagen,**  
Milford Haven, Dyfed.

*You're heading in the right direction, and have short-listed some good components. You might add the Technics SU-A900 and Triangle TE-60 to your amplifier list — the latter being especially refined yet dynamic, although limited in terms of facilities.*

*The Arcam and Meridian CD players are both very good. The Delta 270 is ergonomically easier to use, but its bright forward sound may not suit all systems and tastes. The Harman/Kardon HK-7725 is a good CD player worth auditioning. It's in your price range and is very impressive, especially if you like a bold, exciting sound.*

### Switching cables for more control and tighter bass

At present my system consists of an Arcam Alpha CD player, Rega Planar 3 turntable with Linn K-9 cartridge, Rotel RA-950BX amp and Linn Index II speakers on KitStone stands. I use QED 79 Strand cable, and

**Welly mungous: TDL's substantial RTL3 will give you as much bass weight as the room can handle.**



Audioquest Ruby between CD player and amp. The main problem is the CD player — I find it sounds too bright and harsh. Vocals seem to jump at my ears, and the bass seems a little out of control.

The record deck sounds better, but still a bit hard at times. I want to try and improve the sound, but hope

to spend as little as possible. I've thought about new speaker cables and possibly upgrading the

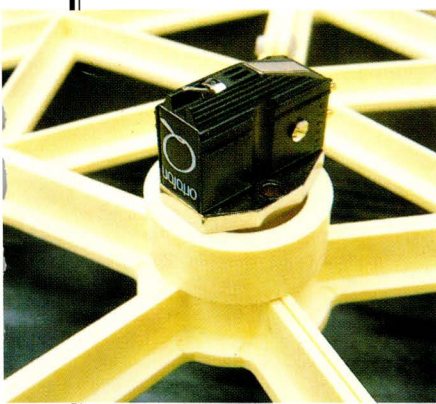
Arcam to Alpha Plus specification for £100.

**K Davidson,**  
Bathgate, Scotland.

*The Index speaker went through quite a few changes before Linn got it right, but a fairly recent pair should sound good. Maybe these speakers don't suit your room or taste. See if you can try something else just to get an idea of how well the rest of the system performs with another set of speakers.*

*QED 79 Strand speaker cable probably isn't helping, and a new set of cables should prove cost effective. Audioquest F-14 should do the trick. These solid core cables will sound noticeably cleaner and better defined than your QED items, though the tonal balance will probably stay much the same, albeit with smoother, tidier treble and tighter bass.*

*The Alpha Plus sounds quite a bit cleaner than the basic Alpha, so Arcam's modification would be worth doing. But try a new set of speaker cables first.*



**Ortofon's Quasar is a dynamic and affordable moving coil.**

*fon's Quasar should give a noticeably more detailed and dynamic sound compared to your Corus Black, and it tracks superbly.*

*If you're into a bit of speaker DIY, check out the Deflex Acoustic Panels. Very often it's the foam*

# Billy Vee

## SOUND SYSTEMS

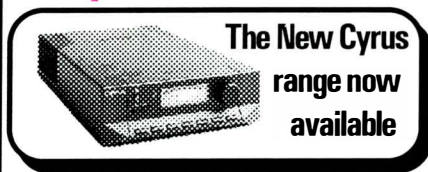
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# WRITE ON!

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

So get scribbling and send in your views on anything to do with hi-fi or music to: The Editor, *Hi-Fi Choice*, 19

Bolsover Street, London W1P 7HJ, or send a fax on 071-323 3547.



## Putting the record straight

In his letter in issue 127, Mr Courtney suggested that the solid hardwood used in the UKD *Callas* speaker comes from questionable, non-sustainable sources.

The charge is totally without foundation.

At UKD, we pride ourselves on being green, as well as craftsman working exclusively in solid hardwoods. We would like to make it clear that the hardwoods used in the building of the *Callas*, and all UKD speakers, do not come



A beautiful speaker, but not at any price — the UKD *Callas*.

## Widescreen worries

If my experience is anything to go by, all is not well with widescreen TV which has an aspect ratio of 16x9 inches, while standard TV is 4x3 inches.

I know several people who have bought widescreen TVs and are now complaining that when they enlarge a normal 4x3 TV transmission to 16x9, the top of the picture is reduced by about 15 per cent and the image is stretched to fill the frame.

On closer inspection, distortion and uneven colour also become apparent, a fact that even Philips — which makes TVs — acknowledges.

Widescreen TVs are good, but only for widescreen broadcasts and videos. These TVs shouldn't be bought on the assumption that you'll get true widescreen pictures, because you certainly won't.

**Anthony Ho,**  
Epsom, Surrey.

*You're absolutely correct. Stretching a TV picture with a 4x3 aspect ratio to fit one of the many widescreen TV ratios is not perfect, as it tends to make everything look as if viewed through a wide angle lens in addition to cropping the top and bottom of the picture.*

*However, if you are an inveterate watcher of movies, more and more companies are releasing films in widescreen format. Viewing such movies through a TV of normal dimensions is somewhat disappointing. The equation becomes even more weighted in favour of the widescreen TV with the addition of a Laserdisc player, as the majority of movies on this format remain in the original widescreen film aspect ratio. Ed.*

## LETTER OF THE MONTH

### A case of déjà vu

In *Sessions*, issue 126, Jimmy Hughes points out that removing the internal damping from speakers to install Deflex Acoustic Panels invalidates the guarantee. However, not only does the damping material help prevent unwanted internal resonances but, more often than not, it also keeps the temperature inside the cabinet down to a specified level.

On another matter, I regularly buy French hi-fi magazines, as well as English ones, and I often find the same review in both translated word for word. I thought the idea was to compare different reviews of the same product, in order to get a more balanced view, before venturing into demonstration rooms.

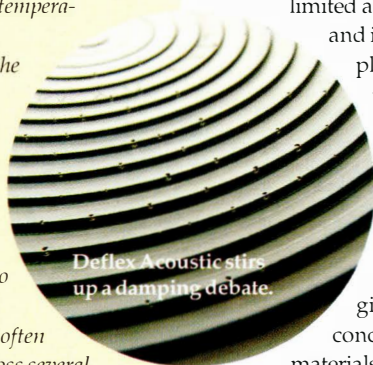
**Neil Hunter,**  
Thornton-Cleveleys, Lancs.

*It's unlikely that you could raise the internal temperature of a*

*speaker to a level where problems with the cabinet or the drive units would occur. Rates of change in cone and dome temperature can get unwieldy, but the temperature within the speaker itself is unlikely to rise drastically, no matter what happens to the damping.*

*Reviews are often syndicated across several languages. If a reviewer in England is handed a product that won't be available in Norway for several months, a Norwegian magazine may commission a translation in order to gain an air of exclusivity. The reader of the translation then has a chance to look at a product which may take months to arrive, though it's a case of déjà vu for the bi-linguist.*

**Jimmy Hughes**



from any controversial source.

The Sipo Mahogany used in the *Callas* originates in Zaire, from the forest estates of the Andrighetti Legnami company. Under the supervision of the local authorities, a strict policy of

limited annual felling

and immediate re-

planting is practised. The controls are genuine, and the cut timber is shipped with certification of its origin. We are

concerned that our materials come from

sustainable green sources and we will have nothing to do with any other source.

We use solid hardwood not only because it looks good and lasts a lifetime, but because its acoustic properties are, in our opinion and after extensive testing, superior to any alternative. Solid hardwood has a lot to offer but not at any price.

**Nick Green,**  
UKD, Iver, Bucks.

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What Hi-Fi, December 1993

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What Hi-Fi, Awards 1993



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# HI-FI CHOICE

## Budget loudspeakers

Does keeping a tight reign on the purse strings have to destroy the sound quality, or can you make a great system with the cheapest speakers? We test 10 of the latest budget super-speakers, including one of the most popular models around, the Mission 760i. How will it fare against its rivals?

## Add-on AV decoders

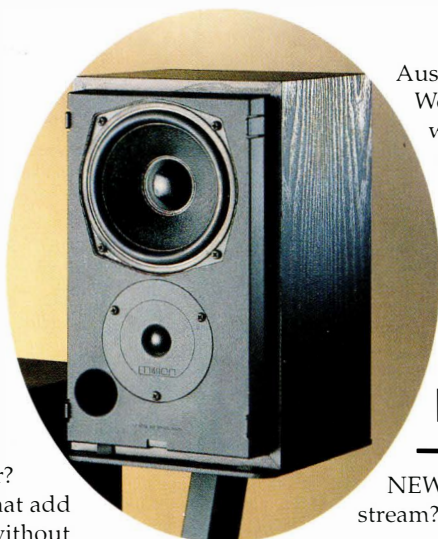
Do you want to add Dolby Pro-Logic sounds to your hi-fi system, but don't necessarily want a whole new amplifier? We look at four of the latest decoders that add Dolby Pro-Logic sounds to your hi-fi, without breaking the bank.

## CD transports

Six of the best high-end dedicated CD transports stand toe to toe to do battle in *Choice's* exhaustive blind listening tests. See them pit optical links against one another in a blistering display of the cutting edge of digital technology.

## A look at the high-end

We take a close look at the big and beautiful Metaxas pre/power amplifier from



Australia — £10,000 worth of shiny chrome. We also feature Bang & Olufsen's mouth watering 9000 system, slick, stylish and expensive.

## A man with a Mission

An exclusive first test: the new Mission Cyrus 3 amplifier. Is this new middle-market amplifier destined to be a classic, like the Cyrus 1 and Cyrus 2 before it?

## Plus: *The Esoteric Audio Review* — a brand new magazine

NEW! Are most hi-fi magazines too mainstream? Then read the *Esoteric Audio Review*, a magazine for the hard-core hi-fi enthusiast. It's packed full of thought-provoking articles, real hi-fi products and jammed with heaviosity. This superb new magazine will only be available with next month's *Hi-Fi Choice*.



## A complete list of all products currently on the hi-fi market

Look in the Buyer's Guide to find out what's available from who. Then turn to the Directory for a summary of every product tested in *Choice*.

May's issue parades on the magazine racks on Friday, April 8, 1994

(All contents subject to change due to circumstances beyond our control)

# DANIEL LEVY

## A PIANO RECITAL FOR THE WELFARE OF NATURE

**FRANZ LISZT**, Forest murmurs.  
 Au bord d'une source.  
 La Vallée d'Obermann.  
 Les Jeux d'Eaux a la Villa d'Este.  
 Two Legends: St. Francois d'Assise.  
 La Prédication aux oiseaux.  
 St. François de Paule marchant sur les flots.  
 Bénédiction de Dieu dans la solitude.  
**IN DEVELOPMENT**

## A PIANO RECITAL FOR THE WORLD'S CHILDREN

**DEBUSSY**, 'La fille aux cheveux de lin', Childrens corner, Reverie. **RAVEL**, 'Pavane pour une infante defunte'. **SCHUMANN**, unpublished pieces from 'Album for the Young'. **MENDELSSOHN**, Sechs Kinderstücke op. 72. **LISZT**, 'Inno del fanciullo al suo risveglio'. **SCHUMANN**, Impromptu n. 4 from 'Bilder aus Osten', Kinderszenen op. 15. **BACH**, Prelude n. 1 C Major from the 'Wohltemperierte Klavier'.  
**LIVE RECORDING**

DDD



## A PIANO RECITAL FOR VENICE

**LISZT**, Six Consolations.  
**MENDELSSOHN**, Three Gondellieder.  
**WAGNER**, Three Albumblätter, Sonate in A flat major.  
**WAGNER/LISZT**, Solemn March to the Holy Grail (Parsifal), Isolde's Liebestod (Tristan und Isolde) DDD



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is a great  
love story...*



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*Enter this month's great competition  
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RQ-DP7 Digital Compact Cassette (DCC)  
personal players worth £400 each.*

The new Digital Compact Cassette (DCC) system offers near-CD sound quality with easy track access and the ability to show track names. Furthermore, DCC players can be used with both digital tapes and conventional analogue cassettes. This backward compatibility is a real bonus if you already have lots of analogue tapes that cannot be replaced with digital types.

One of the first companies to champion the cause of DCC, Panasonic has just launched the new £400 RQ-DP7 portable player. It's about the same size as a CD personal and offers a digital sound that's both stable and well-resolved, as Alvin Gold discovered when he tested the player in the March edition of *Hi-Fi Choice*. Up to two and a half hours of top quality playing time is possible with the RQ-DP7's built-in rechargeable battery.

If we've whetted your appetite, you'll be delighted to hear that we have not just one, but 10 Panasonic RQ-DP7 players to give away.

### How to enter

All you have to do is call the telephone number below, leave your name, postcode, telephone number and address when requested to do so, and then answer the three questions correctly. The *Hi-Fi Choice* hotline will remain open until midnight on Monday, April 18, 1994.

**The *Hi-Fi Choice* telephone hotline: ☎ (0891) 424524**

All calls are charged at 36p per minute cheap rate, 48p per minute at all other times.

The questions

1. What does DCC stand for?

- a) Directly Coupled Cassette
- b) Digital Compact Cassette
- c) Digital Cassette Compressor

2. Who invented DCC?

- a) Sony
- b) Philips
- c) Panasonic

3. What is the maximum battery life of the RQ-DP7?

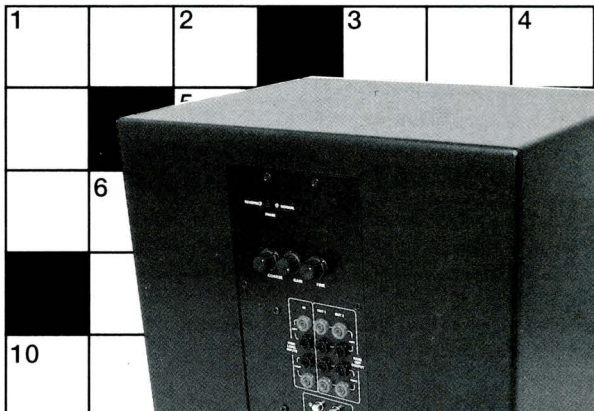
- a) one hour
- b) three and a half hours
- c) two and a half hours

### Competition rules

Callers with all three correct answers will be entered into a prize draw. Ten winners will be selected at random by computer after the competition closes at midnight, Monday, April 18, 1994. No entries will be accepted after this time. The Editor's decision is final and no correspondence will be entered into. Winners will be notified by post. The competition is not open to employees of Dennis Publishing Ltd, Panasonic (UK) Ltd, Livewire, their suppliers, agents or associates. 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. Postal entries will not be accepted. If you do not wish to be informed of any other promotions, please say so after recording your address. Should you have any difficulty entering the competition, call Livewire Customer Care ☎ (0223) 845588.

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HI-FI CHOICE MARCH 1994

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WHAT HI-FI FEB. 1994

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HI-FI WORLD MARCH 1994

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# No honeymoon in Vegas

Perhaps it was an error of judgement. Perhaps it was deliberate. Perhaps it was all part of a secret master plan hatched in Eindhoven (where the Digital Compact Cassette, DCC, management team are based), but by not showing DCC at the Winter Consumer Electronics Show at Las Vegas in January, Philips effectively killed DCC in North America and Japan, and very possibly in Europe, too.

Philips US head office in Knoxville is very good at selling mature products like TV sets and VCRs. But it has never shown any real enthusiasm for the new products, CD-i and

DCC, which need nurtur-

ing. The divisions of

Philips in Holland

which are responsi-

ble for CD-i have

recognised this,

sending switched-on

Europeans over to

drive the launch and

handle vital press

conferences, like those

at the two annual CES.

But there has been

no such policy on DCC.

As a result, the Las Vegas

show opened with Philips

only booking a stand in the

multimedia software annex,

and devoting it solely to CD-i.

The only sign of Philips'

commitment to DCC was on a

small stall mounted by the DCC

Group of America. This was in

the outer lobby of the main hall,

and looked like a flea market barrow.

Only Panasonic/Technics put on anything

halfway resembling a show of commitment to DCC.

"We don't want to say too much about DCC at this time,"

waffled the US Philips people. There won't be another time.

## Shakey supports

DCC has always looked very shakey in Japan, with support only from Marantz and Panasonic/Technics. The Marantz connection is of no real consequence, because the company is small and owned by Philips anyway. And at Vegas,

Marantz announced price cuts on its existing DCC stock.

Without the commitment from giant Matsushita (parent of

Panasonic and Technics), DCC would vanish from the

Japanese market. The same would happen quickly in Ameri-

ca and then, more slowly but inexorably, in Europe. Philips

has all along acknowledged that one company cannot now

create a new consumer format standard.

The traditionally close ties between Philips and

Matsushita have recently slackened. Last year, Philips sold

Matsushita its share in the electronics company which the

two giants had run as a joint venture in Japan for the last 40

years. Then, although supposedly

a CD-i supporter, Matsushita

backed the Californian rival, 3DO.

Although it is a deadly secret,

another two CD-i supporters

(Samsung and Goldstar) have

signed a bet-hedging deal with

3DO. So has Toshiba.

Matsushita is now in a tricky position. 3DO's shares are

falling back towards launch price from their early heights.

However, the Japanese company will lose face and market

share if it re-enters the multimedia race with a CD-i product

that is at least one generation behind its competitors. So it

will fight hard to make 3DO the winner over CD-i. This will

sour relations between Philips and Matsushita.

After Vegas, Matsushita's managers in Japan will already

be asking "If Philips does not support DCC, why should

we?" Matsushita's engineers know that the company must

move very fast with a decision. My bet is that Technics is

already working on an MD design.

Here they can take advantage of Sony's mistakes. Find the

right person inside Sony, and they will now tell you that the

best thing they could have done a year ago on MiniDisc, was

nothing. Launched nothing, and waited a year until prod-

ucts like those shown at Las Vegas were ready.

Launching MiniDisc with the chunky, clumsy MZ-1 units

just gave the system a bad name and generated nothing but

yawns. Spending a million pounds with Dixons last winter

on advertising to off load year old, unsold stock just soils the

company's name.

Sanyo did nothing on

MD, in the UK at least.

Like Philips Knoxville

in the USA, Sanyo in the

UK sticks with safe,

mature products. Sharp

looked as if it was run-

ning ahead of Sony,

with the MD-D10, a

small playback only

unit. This was promised

for July 1993, but Sharp

only brought around

500 into the UK for spe-

cialist dealers to sell.

By January 1994

Sharp had only four

MD-D10s in stock, and

would not be getting

any more in because

there is a new model,

the MD-D11, which also

records, which is due in

May this year.

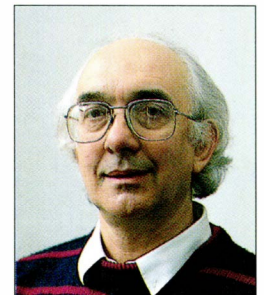
If Panasonic/Technics wanted to, it could still win a good

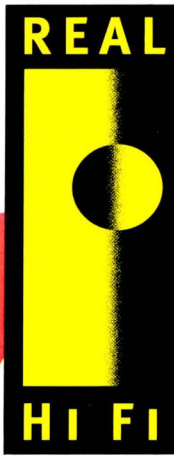
share of the MD market, even with a late 1994 launch.

One of the UK's top journalists, Barry Fox asks the awkward questions at press conferences all around the world.



**No DCC in Las Vegas prompts Barry Fox to ask if Philips has missed the mark in the US.**





*Hear the difference.*

## WHERE DO YOU START? Pick up a couple of your favourite CDs

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Congleton Hi-Fi - 1A Duke Street  
- 0260 297544

**Crewe (Cheshire)**  
Norman Audio - 106 Victoria  
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**Darlington**  
Hi-Fi Experience - 17 Coniscliffe  
Road - 0325 481418

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Leicester Hi-Fi - 6 Silver Walk,  
St. Martins Sq. - 0533 539753

Listen Inn - 6 Hotel Street -  
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Listen Inn - 32 Gold Street -  
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**Norwich**  
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# On test: amplifiers

## The cast list

Arcam Alpha 6	£329.90
Audiolab 8000A	£449.90
Harman Kardon HK1400	£399.99
Kenwood KA-5050R	£349.95
Linn Majik-I	£593.00
Marantz PM-80II	£479.90
Pioneer A-400X	£299.95
Rotel RA-980BX	£425.00

Last month we took a long, hard look at budget CD players, many of which proved to be a massive embarrassment to players at two or three times the cost. Amplifiers, however, are a very different proposition.

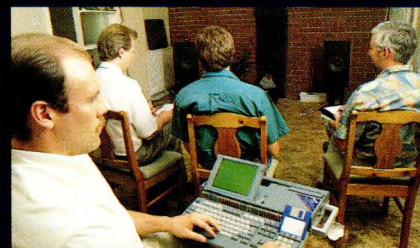
Unlike CD players, the crucial components of an amplifier cannot be condensed onto ever smaller and cheaper integrated circuits. Amplifiers will always demand the rather more expensive components such as chunky power supplies and robust power transistors so that they can wrestle with their unpredictable foe, the loudspeaker.

Naturally, there are a handful of integrated amplifiers below £300 that juggle the compromises of an effective

phono stage, main power supply and power amplifier circuitry very successfully indeed. But with a little extra cash to play with, the adventurous designer can advance the performance of these budget models in leaps and bounds. Just how far, of course, is a question we intend to discover from this group test.

Furthermore, the life of an amplifier is dominated by extremes — from handling the minute voltages produced by a moving-coil cartridge to levels that could be something like 100,000 times higher, as demanded by an inefficient and power hungry loudspeaker. Just how adequately an amplifier copes with these extremes is reflected in both its technical and subjective performance, two further

# How the listening tests were done



Variety and objectivity are the keys to the reliability of our comprehensive listening tests. Variety comes in our choice of music which extends from pop, rock and jazz through to classical, female vocal and folk — an extensive battery of software chosen by our listeners at the beginning of each session.

Objectivity, meanwhile, is maintained by the use of a consistent and familiar hi-fi system that allows the cross-correlation of results from one test to another. Once again, this comprised a combination of DPA's PDM2 DAC (CD) and Pink Triangle's PT/TOO (LP) with Audio Note's AN/EII loudspeakers bringing up the rear. The use of precisely matched listening levels across both CD and vinyl sources and from one amplifier to another also ensures that every amplifier is auditioned on a fair and level playing field.

Thanks too must go to Roger Batchelor (Denon), Tom Barron (Rotel), Mike Martindell (Arcam) and Andy Whittle (Rogers) whose ears regularly grace our blind listening panel.

heating systems, dimmer switches and all manner of domestic or external appliances. This is called Radio Frequency (RF) noise and, once inside an amplifier, will often mask subtle detail by disrupting the natural background of hiss. Even if background noise seems inaudible, RF interference can make music sound fatiguingly hard or gritty.

The magnitude of this effect shows up as raised areas on the 3D RF IMD plot. Our example, from the Marantz PM-80II, shows the amp's sensitivity to RF noise up to 150MHz. So, if the PM-80II is exposed to any electrical interference within this 150MHz range it's unlikely to storm through with flying colours.

Sadly, no-one can ensure that his or her electrical environment is entirely 'clean' of such interference. Fortunately, by referring to the RF plots, we can now determine which amps are more susceptible in the first place.

## Understanding the tests results

Most hi-fi buffs are interested in the macho areas of performance like power output, headroom and maximum current so it's as well to know that all three parameters are quoted to a maximum distortion of just one per cent. However, more power does not necessarily mean more quality.

Instead, look for amps that not only have a healthy current rating but that also get close to doubling their power output between 8 and 4ohm speaker loads. These models should have no trouble driving difficult or multiple speaker combinations. Unfortunately, any amplifier with an appropriately stiff power supply will also suffer from a limited dynamic headroom. This latter figure gives us an idea of the maximum short-term power available under dynamic music conditions.

It would be convenient for us to believe that very low distortion necessarily goes hand-in-hand with very high sound quality but, unfortunately, it doesn't. What counts is not the amount of THD (Total Harmonic Distortion) but how its composition varies with the changing power output of the amp. Broadly speaking, so long as distortion rises and falls in sympathy with the music, most listeners quickly become accustomed to its presence or colour. Of course, some types of distortion are more tolerable than others and this is where the 3D Ultrasonic Distortion plot comes in handy.

The Reference Plot includes a continuous tone at 20kHz, a sweep running from 0-20kHz and another stretching from 0-50kHz-0Hz. This combination of signals taxes the amp in a more realistic way than traditional single-frequency distortion tests. As with real music, both harmonic and intermodulation distortions occur simultaneously.

Our example plot, provided by Audiolab's 8000A, shows straightforward harmonic distortions represented by a diagonal track running from 0-40kHz and by a vertical track located at 40kHz. Both of these are 2nd harmonics of the original 0-20kHz sweep and 20kHz tone respectively. By contrast, the intermodulation distortions, visible as V-shaped patterns, are caused by one signal (the 20kHz tone) modulating or beating with another (the 0-20kHz sweep) and are often more distracting than simple harmonics.

This busy nest of distortion is further complicated by electrical noise leaking-in from central

## The headbanger's guide to high volume music

Achieving awesome SPLs (Sound Pressure Levels) has less to do with the power output of your amplifier than the sensitivity and power handling of your loudspeakers. After all, a 50W amplifier coupled with a 92dB/1W studio monitor will achieve the same loudness as a monster 200W amplifier grappling with a lower 86dB/1W sensitivity speaker.

On the other hand, squeezing an extra 3dB volume from your existing speakers will require a new amplifier rated at double the power output of your current model. Always assuming, of course, that the speakers don't fry-up in the process.

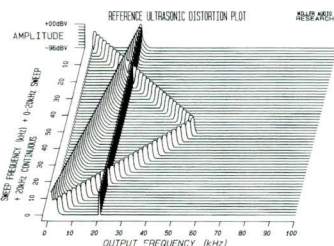
So for leviathan levels (>110dB SPL) you'll need a high sensitivity speaker (>91dB/1W/1m) with sufficient power handling to accommodate the fierce clout of a heavyweight amplifier (>100W/8ohm).

areas that are dealt with here in depth.

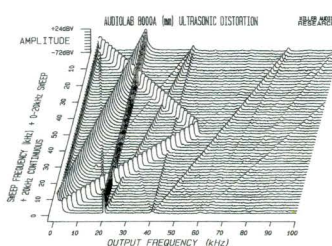
The Pioneer A-400X and Arcam Alpha 6 both have an impressive pedigree but sit right on the boundary between true budget and costlier mid-priced units. So can they continue to make their manufacturers proud? Audiolab's 8000A is another old favourite that receives regular updates to keep itself trim but how will this fare against relative newcomers from Marantz, Rotel and Linn?

Either way, for an amplifier to be Recommended it must achieve a given standard of quality within the £300-£600 band, a benchmark that is judged to be above average for the price. By contrast, a Best Buy is something very special indeed, representing astonishing value by combining subjective and technical excellence in a reliable and very compatible package. Many amplifiers are conceived with a Best Buy ticket in mind, but very few realise its glory.

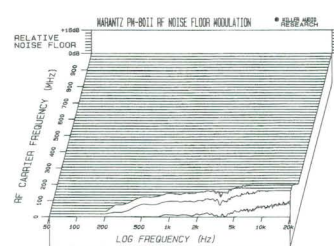
The 3D ultrasonic distortion plot should match the input.



Audiolab 8000A's plot reveals simple harmonic distortion.



Marantz' PM-80II shows the effect of Radio Frequency noise.



# Arcam Alpha 6



If the third model in Arcam's long-running Alpha Series proved something of a low point (see issue 104), then its successors look set to re-establish the authority of the range. These are the Alpha 5 and Alpha 6 amplifiers (the Alpha 4 never existed), that both include a derivative of the quasi-complementary MOSFET power amplifier first seen in Arcam's Delta 290 (issue 116).

The model 6 provides a lustier output than the 5 but still features the same complement of four line, tape and MM disc inputs. Incidentally, this disc stage, which has been upgraded over the Alpha 3 using a new PMI op-amp, can also be bypassed in favour of a fifth auxiliary input for line-only systems.

Meanwhile, for an extra £20, you can buy armchair remote control over the motorised volume knob, a facility that is already available to owners of the Alpha 5 and D270 CD players with their multi-purpose infra-red handsets.

## Sound quality

No sooner had the Mahler CD been loaded into the CD player than lamenting horns soared out into the room, creating a marvellous sense of anticipation that was just sustained by the final flourish of the orchestra as a whole. This made the Alpha 6 a whole lot more interesting than many of its rivals but there was always that nagging sensation of not quite letting go, a hint of restraint that prevented its music from exploding into a larger and even bolder acoustic.

Yet the Alpha 6 maintained a steady grip through the tricky rock and pop CDs that had flummoxed others in this test. Sting's boyish vocals retained their natural whine, despite being battered from all sides by multi-tracked harmonies, strings and percussion. Any restraint in this instance was interpreted by our panel as a little extra smoothness, keeping

any hardness or aggression in check without squashing the dynamics en route.

There is some slight muting of dynamics via the MM disc input. However, its sweet balance seems perfectly suited to the lush sound of classical woodwind and strings. With these instruments in particular, the Alpha 6 revealed a wealth of gentle detail without sounding sat-upon.

## VERDICT

▲ Arcam has successfully engineered a sound that's sweet and smooth with bags of insight.

▼ When a fast and dynamic sound is called for, the Alpha 6 can sound too conservative.

▶ £329.90

SOUND QUALITY

VALUE FOR MONEY



## Conclusion

This, Arcam's latest addition to the Alpha Series, continues its tradition for great music at an equally attractive price. In this instance, the sound of the Alpha 6 is very melodic, a performance that envelops and relaxes with appealing waves of warm and considered detail.

So, rather than being stunned by forthright dynamics, the Alpha 6 is an amplifier to savour and enjoy at your leisure. It comes highly Recommended.

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

☎ (0223) 440964

## LABORATORY REPORT

	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	65.7W	68.3W	63.9W
4ohms	107.0W*	113.0W*	104.1W*
Dynamic Headroom (IHF)		+1.4dB (94.6W)	
Maximum Current (5msec, 1% THD)		22.0A (1)	
Output Impedance	0.061ohm		
Damping Factor	130.2		

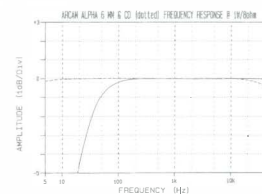
	CD	MM (Vinyl)
Stereo Separation (1kHz)	76.4dB	77.5dB
(20kHz)	50.3dB	48.9dB
Channel Balance (1kHz, -20dBV)	0.24dB	0.29dB
(-60dBV)	1.07dB	1.11dB
Total Harmonic Dist. (0dBW)	-87.1dB	-76.1dB
(2/3 power)	-88.6dB	-77.0dB

CCIR Intermod. Dist. (0dBW)	-94.5dB	-80.5dB
(2/3 power)	-96.2dB	-84.6dB
Noise (A wtd, 0dBW)	-80.4dB	-78.7dB
(2/3 power)	-94.7dB	-82.9dB
Residual noise (unwtd)	-63.9dBV	-63.9dBV
Input Sensitivity (for 0dBW)	25mV	277uV
(for full output)	195mV	2.15mV
Disc Overload (1kHz)		90.5mV
(20kHz)		856mV
(50kHz)		1855mV

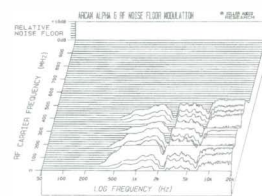
Tape Output/Impedance 8.0V (disc) / 1.88kohm  
 Input loading 8.5kohm/100pF 47kohm/150pF  
 DC offset, left/right +0.5mV/+0.6mV  
 Serial Number 002100  
 \* Fuse protection

Incredibly, the Alpha 6's output is reinforced by a massive 22A of clean current which not only supports the 68W/8ohm figure but also sustains momentary bursts up to 480W into loads as low as 1ohm. Theoretically, this amp should be able to drive short pieces of damp string. However, by protecting the Alpha 6 with speaker-line fuses that pop at just 2.5A, Arcam prevents its 113W/4ohm figure from being achieved in practice. I changed these fuses solely for my lab tests (consumers should not follow suit).

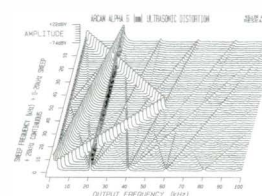
Otherwise, the Alpha 6 is a model of low distortion (typically 0.005 per cent), low noise and high sensitivity (just 195mV for full output) and is a credit to the range.



Tailored disc response prevents damage to ported speakers from warped LPs.



A greater susceptibility to RF noise than we've seen from past Arcam amplifiers.



Intermodulation distortions dominate as amp drives lower impedance loads.

# Audiolab 8000A



## VERDICT

- ▲ Very powerful and highly consistent; above all, it's a very faithful sounding amplifier.
- ▼ Slightly rounded sound via LP; can begin to appear harsh or colourless if pushed too hard.
- ▶ £449.90

**SOUND QUALITY**

■■■■■□

**VALUE FOR MONEY**

■■■■■□

### Conclusion

This evergreen design has the ability to sound exciting without becoming tiring, relying on a peculiar but highly successful mix of energy with sobriety. What's more, it's a genuinely wideband amplifier capable of dragging oodles of detail from every corner of the musical spectrum without ever seeming to lose its cool. Discipline is the cornerstone of every performance heard via the 8000A, and guarantees its continued Recommendation.

Cambridge Systems Technology Ltd, Spitfire Close, Ermine Business Park, Huntingdon, Cambridgeshire PE18 6XY. ☎ (0480) 52521

Flavour of the month products will come and go yet old stalwarts like the Audiolab 8000A seem to live on indefinitely. Such longevity is not achieved by complacency, however. Instead, the 8000A amplifier is continually reassessed and any improvements, no matter how subtle they may be, are regularly implemented in order to maintain the amplifier's competitive edge.

Naturally, little of this is evident from the familiar black alloy fascia, the gentle bass/treble controls, or the rotary input and rec-out facilities that cater for MM/MC disc, CD, tuner and three tape sources. In fact, 1994's £450 version of the 8000A looks identical to the model that was reviewed some three years ago in issue 97.

But inside the refinements are apparent. Modifications that include revisions to the PCB layout, new ELNA Starget signal-coupling capacitors and a new toroidal mains transformer. Furthermore, an optional muting relay can now be fitted for £25, preventing switch-on thumps when the 8000A is used as a preamplifier together with an external power amplifier.

### Sound quality

Cool and thoroughly self-assured, this latest version of Audiolab's 8000A performed in a very confident manner throughout the listening session — as had its predecessors — despite the musical diversity. Regardless of input, this amplifier produced a slightly dry but very clean and measured sound that reflected the rasp of horns as clearly as the deep rumble of kettle drums. In practice, vinyl LPs sounded just as vivid and rumbustious as CD, conveying all the power and dynamics of classical material without ever tripping up.

Several listeners applauded the 8000A for the sheer depth, extension and detail of its bass, achieved without any soft or boomy

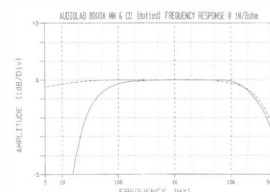
overhang. The amplifier certainly revealed a hidden texture from the drumline of Sting's latest CD. It managed to draw out a natural colour from an instrument that can so often sound like an amorphous splodge. Neither did the complexities of multi-tracked recordings present too great a problem. The 8000A managed to pick its way through the liveliest of tracks without ever losing its grip.

## LABORATORY REPORT

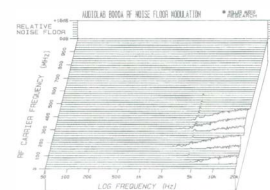
	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	76.3W	79.5W	74.9W
4ohms	116.9W	127.6W	118.7W
Dynamic Headroom (IHF)	+1.0dB (99.4W)		
Peak Current (5msec, 1% THD)	8.1A*		
Output Impedance	0.0076ohm		
Damping Factor	1054		
		CD	MM (Vinyl)
Stereo Separation (1kHz)	76.6dB	75.9dB	75.9dB
(20kHz)	52.2dB	49.3dB	49.3dB
Channel Balance (1kHz, -20dBV)	0.22dB	0.18dB	0.18dB
(-60dBV)	1.61dB	1.56dB	1.56dB
Total Harmonic Dist. (0dBW)	-90.5dB	-90.6dB	-90.6dB
(2/3 power)	-92.0dB	-92.1dB	-92.1dB
CCIR Intermod. Dist. (0dBW)	-96.5dB	-71.0dB	-71.0dB
(2/3 power)	-98.9dB	-71.5dB	-71.5dB
Noise (A wtd, 0dBW)	-80.5dB	-78.2dB	-78.2dB
(2/3 power)	-94.7dB	-82.2dB	-82.2dB
Residual noise (unwtd)	-68.3dBV	-68.4dBV	-68.4dBV
Input Sensitivity (for 0dBW)	14.9mV	298uV	298uV
(for full output)	122mV	2.45mV	2.45mV
Disc Overload (1kHz)		183mV	183mV
(20kHz)		1560mV	1560mV
(50kHz)		1680mV	1680mV
Preamp Output Impedance	8.5V (Disc) / 615ohm		
Input loading	23kohm/100pF 50kohm/380pF		
DC offset, left/right	+2.5mV/-2.3mV		
Serial Number	207B84170		
* Limited by output protection			

Comparing these results with those recorded — under identical conditions — in issue 97, proves very interesting. For starters, we can see that the basic 80W/128W power output remains unchanged though its protection has been relaxed to allow some eight rather than seven amps of current. This is still too conservative.

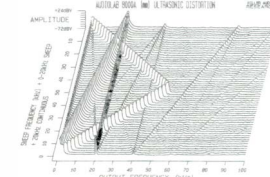
Stereo separation, distortion and noise levels have remained equally consistent though tighter selection of its volume control has halved the low-level channel imbalance. More importantly, the amp's output impedance has been sharpened from 0.04 to 0.008ohm, conferring tight control over the speaker, while its sensitivity to spurious RF noise has been reduced. Just compare the 3D RF intermodulation plots. A very solid set of figures.



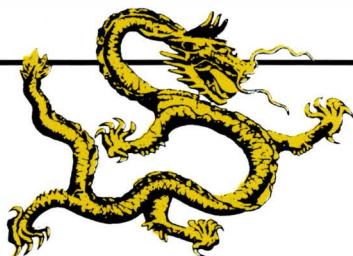
Bass roll-off prevents cone-wobble from warped vinyl records.



Reduced sensitivity to RF noise, greater compatibility with different CD players.



Mild second-order IM distortions remain unchanged from issue 97.



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# Harman Kardon HK1400



**VERDICT**

- Stress-free listening with a large, laid-back sound that goes with, rather than against, the flow.
- Can get into trouble with complex or multi-tracked recordings.
- £399.99

**SOUND QUALITY** ■■■■□

**VALUE FOR MONEY** ■■■□□

## Conclusion

It's a sad fact that the simpler things become, the more expensive they seem to get. So it is with Harman's *HK1400*, an amplifier that's no more powerful but considerably less versatile than older and cheaper models like the *HK6300* (issue 104). Fortunately, its easy-going sound quality and brave specialisation go a long way to justifying this premium, ensuring the *HK1400* is heartily Recommended for modern, CD-based systems.

Harman Audio, Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. ☎ 081-207 5050

There was a time when Harman Kardon's feature-packed amplifiers lacked the simplicity of decent speaker switching or even a source direct option. So the blank fascia of its line-only *HK1400* marks quite a significant change in attitude. Tone, balance and loudness controls have all been discarded, together with the headphone socket, subsonic filter and phono disc stage.

This leaves the bare bones of an HK amplifier with localised input selection for seven line-level sources, including two tape decks. The only twiddly-bit is a switch that reduces the preamp gain by 10dB (about a third) to accommodate the higher output of CD players or outboard DACs.

Left in normal mode, HK's preamp section (before the volume control) provides a necessary boost to lower-level sources like tape decks and tuners. Importantly, however, the final maximum power output of the *HK1400* remains quite unchanged. My one complaint is that the screw-down speaker terminals are not as compatible with 4mm plugs as HK would have you believe.

## Sound quality

Relaxed but powerful, music seemed to flow in a remarkably even-handed way with this amplifier at the helm. The kettle-drums and horns of Mahler's *Fifth Symphony* were no less detailed than with the Audiolab *8000A*, for example, but neither were they muted by any overt sense of control or discipline. So rather than sounding frayed or sloppy, the *HK1400* exhibited what was described as a relaxed confidence, an engaging quality that's especially apparent in its -10dB setting.

Tonal colours were reflected in a very natural fashion, allowing favourite instruments to be picked-out from within an orchestra without destroying the overall structure of the

piece. Nevertheless, the *HK1400* tended to restrain the dynamics of the busiest material rather than sound spitty or aggressive.

Vocals remained just as tangible but accompanying instruments often failed to break free under these circumstances. Yet as soon as the pressure backed off, the soundstage opened right up again to reveal a fresh, snappy and enthralling performance.

## LABORATORY REPORT

	20Hz	1kHz	20kHz
<b>Maximum Continuous Power Output</b>			
8ohms	48.8W	52.3W	50.8W
4ohms	79.3W	87.5W	86.1W
<b>Dynamic Headroom (IHF)</b>	+0.9dB (64.4W)		
Peak Current (5msec, 1% THD)	12.0A*		
Output Impedance	0.123ohm		
Damping Factor	65.1		
<b>Stereo Separation</b>	(1kHz)	89.0dB	
	(20kHz)	62.6dB	
<b>Channel Balance</b> (1kHz, -20dBV)	0.21dB		
	(-60dBV)	0.05dB	
<b>Total Harmonic Dist.</b> (0dBV)	-70.5dB (-75.7dB)		
	(2/3 power)	-71.9dB (-77.8dB)	
<b>CCIR Intermod. Dist.</b> (0dBV)	-73.5dB (-81.6dB)		
	(2/3 power)	-75.9dB (-84.5dB)	
<b>Noise</b> (A wtd, 0dBV)	-98.8dB (-96.7dB)		
	(2/3 power)	-107.7dB (-106.1dB)	
<b>Residual noise</b> (unwtd)	-86.6dBV (-85.5dBV)		
<b>Input Sensitivity</b> (for 0dBV)	21.0mV (6.4mV)		
	(for full output)	155mV (511mV)	
<b>Line</b> (CD) Overload (1kHz)	2.72V (8.95V)		
	(20kHz)	2.62V (8.32V)	
	(50kHz)	2.57V (7.60V)	
<b>Tape Output/Impedance</b>	10.4V (11.3V) / 715ohm		
<b>Input loading</b>	39kohm/100pF		
<b>DC offset, left/right</b>	-1mV/+44mV		
<b>Serial Number</b>	00023		

\* Limited by output protection  
(Bracketed figures refer to -10dB gain setting)

**HK's normal mode of operation offers an extra +10.4dB gain at the expense of compromised overload margins and slightly higher distortion (typically 0.03 instead of 0.02 per cent). By contrast, the overall signal-to-noise ratio actually widens to a magnificent 99dB — one of the best figures ever recorded for 1W/8ohm. Either way, digital sources whose peak output exceeds 2.5V should only be used with the HK1400 switched to -10dB.**

**In terms of power, it's nothing special. Even the modest 12A current reserves are limited by HK's peculiar solid-state protection. Sadly, the output impedance is still rather high at 0.12ohm but at least the top-quality ALPs volume control promises a superb channel balance.**

Plenty of power maintained through the extremes of bass and treble.

Unperturbed by any RF hash emitted by CD players or outboard DACs.

Distortion (into 4ohm) is almost purely intermodulation rather than harmonic.

# Kenwood KA-5050R



## VERDICT

- ▲ Plenty of power; generally inoffensive and unchallenging sound quality.
- ▼ Far from the most riveting amplifier to emerge from the Kenwood stable.
- ▶ £349.95

**SOUND QUALITY**      **VALUE FOR MONEY**

■ ■ ■ ■ ■      ■ ■ ■ ■ ■

**T**ake one Kenwood KA-5040R amplifier with remote control, tear out its bipolar power transistors and replace them with flavour-of-the-season MOSFETs and, hey presto, you've got yourself a brand new £350 KA-5050R.

Of course, little of this internal jiggery-pokery is evident from the curvaceous fascia of the 5050 which, along with its logic-controlled input selection, motorised volume control, tone, balance, loudness/subsonic contours, rec-out and MM/MC cartridge selection, is a format that has been culled directly from the KA-5040R. In practice, Kenwood's new MOSFET Drive logo, which appears on the front of the fascia, is almost the only clue to any actual change.

The other tell-tale difference is that the sleek remote control of the earlier model has been replaced by an altogether more prosaic handset (which also happens to be shared with the cheaper KA-4050R).

### Sound quality

The Kenwood KA-5050R is a tricky amplifier to sum up. On the one hand its music sounded open and its sound staging pleasantly deep, yet the overall effect consistently failed to maintain the attention of our listeners. Sure enough, there was a thrill to the sound of classical strings and plenty of bite to percussion but there wasn't the warmth or weight to complete the entire musical picture.

This is a real pity because its bass proved usefully extended despite lacking in drive and impact. The tippy balance remained more obvious with pop rather than classical material, emphasising the zing of cymbals which rang clear but out of step with the milder sound of bass guitar and drums.

To a degree, these grey colorations were blunted by the MM input which sounded somewhat milder and less astringent than the

direct CD stage. Once again, the music bounced nonchalantly along, a carefree performance that was wasted on our listeners who were equally distracted by its slightly dry, bleak and even sterile outlook.

### Conclusion

Strictly speaking, there is no reason why Kenwood shouldn't have combined the versa-

tility of its more recent amplifiers with the attention to sound quality offered by its distant predecessors.

Unfortunately, the KA-5050R continues a more recent trend for providing a very even, pleasantly smooth and self-effacing sound that left the listening panel unruffled but, at the same time, distinctly unmoved. As with the KA-5040R tested in issue 109, Kenwood appears to have taken one step forward and two steps back.

Trio-Kenwood UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB.

☎ (0923) 816444

## LABORATORY REPORT

	20Hz	1kHz	20kHz
<b>Maximum Continuous Power Output, 8ohms</b>	104.8W	103.4W	98.5W
<b>4ohms</b>	169.9W	180.5W	173.8W
<b>Dynamic Headroom (IHF)</b>	+1.0dB (129.2W)		
<b>Maximum Current (5msec, 1% THD)</b>	13.5A		
<b>Output Impedance</b>	0.029ohm		
<b>Damping Factor</b>	272.0		
<b>Stereo Separation (1kHz)</b>	59.8dB	59.0dB	CD
<b>(20kHz)</b>	43.7dB	42.7dB	MM (Vinyl)
<b>Channel Balance (1kHz, -20dBV)</b>	0.39dB	0.42dB	
<b>(-60dBV)</b>	0.32dB	0.35dB	
<b>Total Harmonic Dist. (0dBV)</b>	-91.5dB	-94.7dB	
<b>(2/3 power)</b>	-97.6dB	-99.9dB	
<b>CCIR Intermod. Dist. (0dBV)</b>	-86.6dB	-85.5dB	
<b>(2/3 power)</b>	-83.6dB	-83.5dB	
<b>Noise (A wtd, 0dBV)</b>	-81.3dB	-80.6dB	
<b>(2/3 power)</b>	-97.7dB	-92.2dB	
<b>Residual noise (unwtd)</b>	-75.8dBV	-75.8dBV	
<b>Input Sensitivity (for 0dBV)</b>	23mV	278mV	
<b>(for full output)</b>	237mV	2.85mV	
<b>Disc Overload (1kHz)</b>		138mV	
<b>(20kHz)</b>		1290mV	
<b>(50kHz)</b>		1850mV	
<b>Tape Output/Impedance</b>	11.4V (disc) / 448ohm		
<b>Input loading</b>	53kohm/490pF 44kohm/490pF		
<b>DC offset, left/right</b>	+21mV/+23mV		
<b>Serial Number</b>	30199024		

**Although it has revamped the driver and output stages to use MOSFET rather than bipolar transistors, Kenwood still has both the output power, signal-to-noise ratios and input sensitivities of the original KA-5040R (issue 109). As a result, the hefty 103W/180W 8/4ohm output and low 0.03ohm source impedance ensures an equally firm grip over low sensitivity, low impedance speakers. The only major difference is a marked increase in high frequency intermodulation distortion tracks that distinguish the MOSFET 4050R (issue 121) and 5050R from the bipolar 4040R (issue 104) and 5040R (issue 109). Just compare the respective 3D plots. Other similarities, however, explain the correlation in sound quality across this family of amplifiers.**

**Extended bass response means speaker cones will wobble with warped LPs.**

**No appreciable reaction to RF noise beyond the bandwidth of the amplifier.**

**Feedback runs out at higher frequencies so intermodulation distortion increases.**

# Linn Majik-I



Unveiled to the accompaniment of a great fanfare at *Live '93*, Linn's £593 *Majik-I* has been designed for long term versatility with future applications as diverse as multi-room, multi-media and surround sound in mind.

In its most basic form, the *Majik-I* is like any other ultra-modern integrated amplifier, using solid-state input selection for its three line, two tape and MM (or MC) disc sources. These, along with digital volume and balance control, are toggled-up on the front panel or via its accompanying remote control.

Linn's upgrade theme begins with separate preamp out and power amp inputs but continues with an additional hidden input that accommodates any one of Linn's special modules. These adaptive cards locate into an expansion slot behind the amplifier and currently include the *Kudos* tuner stage, *Aktiv* electronic crossover for *Keilidh*, *Kaber* and *Keltik* loudspeakers and *Knekt* line driver/receiver modules for multi-room sound distribution.

The internal construction of the *Majik-I* is extremely advanced and relies heavily on miniature surface-mount components, including the integrated circuits found in its disc, line, input switching and main microprocessor stages. But does high-tech engineering necessarily promise the highest fidelity?

## Sound quality

The *Hi-Fi Choice* listening panel remained largely indifferent to the best efforts of the *Majik-I*, which managed to reproduce Mahler's *Fifth Symphony* in a more depressing vein than is ordinarily the case. The *Majik-I* is just not particularly passionate. Instead, the music it produced sounded like a collection of disparate threads, a tangle of information that made it difficult to appreciate the virtuosity of star performers.

Almost inevitably, those amplifiers that sound rather hard or grntry via CD will sound that bit smoother and more approachable via their MM disc inputs, and Linn's *Majik-I* is no exception. Strings still sounded rather parched and its imagery remained vague but there was less edginess to wear down the ears of patient listeners. But this could well be a completely different story in an all Linn system. The

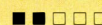
## VERDICT

- ▲ Very load-tolerant despite its modest power rating; great long-term flexibility.
- ▼ Lacks finesse and subtlety, crescendos sound irritating rather than stimulating.
- ▶ £593.00

SOUND QUALITY



VALUE FOR MONEY



family approach is, after all, what Linn is rightly famous for.

## Conclusion

Sadly, the brittle and grating colour of this complex machine has too much in common with amplifiers of a decade ago. This is a great pity because the concept of the *Majik-I* is far from unattractive, allowing the heart of an entertainment system to grow along with the desires and pocket of its owner.

Linn Products, Floors Road, Waterfoot, Eaglesham, Glasgow G76 0EP.

☎ 041-644 5111

## LABORATORY REPORT

	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	32.4W	33.0W	32.8W
4ohms	60.2W	60.5W	60.2W
Dynamic Headroom (IHF)	+0.2dB (34.6W)		
Maximum Current (5msec, 1% THD)	7.9A		
Output Impedance	0.263ohm		
Damping Factor	30.4		

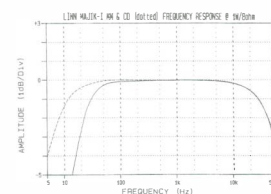
	CD	MM (Vinyl)
Stereo Separation (1kHz)	65.2dB	65.3dB
(20kHz)	52.5dB	52.6dB
Channel Balance (1kHz, -20dBV)	0.07dB	0.14dB
(-60dBV)	0.09dB	0.16dB
Total Harmonic Dist. (0dBV)	-75.0dB	-68.2dB
(2/3 power)	-74.7dB	-67.8dB

CCIR Intermod. Dist. (0dBV)	-75.3dB	-53.3dB
(2/3 power)	-74.5dB	-53.6dB
Noise (A wtd, 0dBV)	-86.7dB	-83.4dB
(2/3 power)	-95.1dB	-85.1dB
Residual noise (unwtd)	-83.9dBV	-84.9dBV
Input Sensitivity (for 0dBV)	50.0mV	506uV
(for full output)	269mV	2.65mV
Disc Overload (1kHz)		58.1mV
(20kHz)		272mV
(50kHz)		249mV

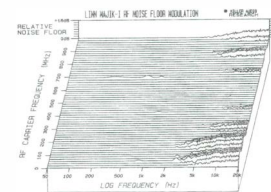
Preamp Output Impedance 8.0V (disc) / 204ohm  
 Input loading 8.9kohm/200pF 47kohm/200pF  
 DC offset, left/right -28mV/+16mV  
 Serial Number 001195

The unusual Linn *Majik-I* employs Philips power amp integrated circuits rather than discrete transistors at its output. These are connected in parallel to maintain a maximum 8A current rating while extensive power supply regulation ensures its 33W output increases by +2.6dB to 60.5W into 4ohm. So the *Majik-I* will successfully drive 4 and 2ohm loads (despite the high 0.26ohm output impedance) yet its exceptionally stiff supply also reduces dynamic output to a negligible +0.2dB.

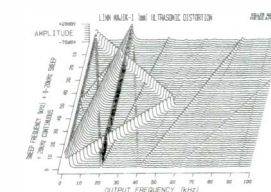
Distortion increases from 0.018 (CD) to 0.04 per cent (MM), unaffected by the low +21dB headroom available to the disc stage. Meanwhile, the digital volume control offers fine 1dB steps over the upper 55dB of its 68dB dynamic range before dropping into a full mute (-105dB).



Gentle downturn of extreme treble might have audible consequences.



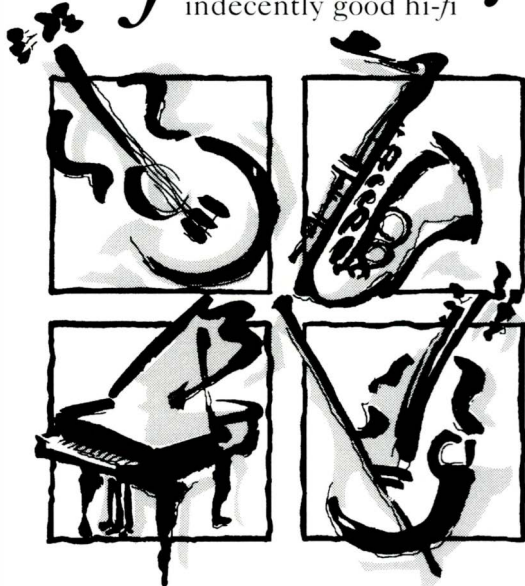
Sporadic sensitivity to RF noise is as high as 1GHz satellite frequencies.



Second and third IMD in audio band (far RHS) caused by MM phono stage.

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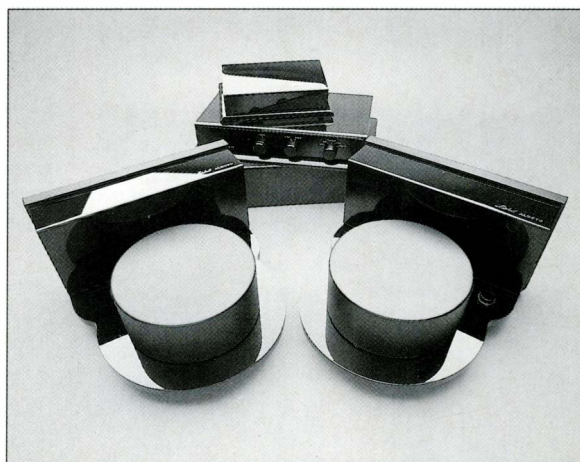
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# Marantz PM-80II



**B**earing in mind that we originally reviewed the *PM-80* some four years ago (issue 85), Marantz has obviously been in no hurry to launch its replacement. Finally, however, it has come up with the *PM-80MkII*, a heavyweight integrated amplifier that shares many of the features of the original, albeit executed in a more innovative form.

The disc, line and tape inputs (now marked up as DCC) have been condensed onto a single rotary selector while a subsonic filter is added in place of the extra tape/processor inputs that provided on the earlier *PM-80*. Incidentally, because of the very extended response of the *PM-80MkII*, this filter should always be engaged when phono (MM or MC) sources are in play.

Like its predecessor, the *PM-80MkII* may be fired-up in either Class AB or Class A modes, the latter providing a sweeter sound at the expense of power and headroom. Nevertheless, the guts of the *MkII* are highly evolved as Marantz has deployed discrete op-amps (known as HDAM or Hyper-Dynamic Amplifier Modules) in both the MM/MC disc and active volume control stages.

## Sound quality

Given the ponderous but hefty thump that announced Mahler's *Fifth Symphony*, the *PM-80II* seemed able to convey the weight and power of its music without quite realising the quickness, the dynamics and fleeting quality of lighter percussive elements. In Class A mode, the treble was undoubtedly smoother and sweeter in tone but also slightly subdued, even rather soft at times.

Up-beat pop tracks like Sting's *Seven Days* sounded cleaner and more civilised in Class A, yet the speed, excitement and energy is perhaps better reflected by the 'dirtier' power of its Class AB setting. As a consequence, cymbal crashes could sound uneventful in

Class A but harder and grittier, if more impressive, in Class AB.

This distinction was maintained regardless of input, though the phono stage sounded warmer and smoother still. It's a clean sound, if one that was described as valve-like because of the full-bodied but suspiciously tailored presentation. A listenable amplifier then, but not entirely convincing.

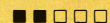
## VERDICT

▲ The smooth, rosy and ingratiating sound of Class A is a valuable option.

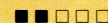
▼ Extra headroom but dirtier sound in Class AB; phono stage lacks crispness and insight.

▶ £479.90

SOUND QUALITY



VALUE FOR MONEY



## Conclusion

Despite its *MkII* badge, this particular version of the *PM-80* bears little relation to the original save for its basic specification. Once again the Class AB route provides plenty of power for the money. Nevertheless, it's the rose-tinted perspective of the Class A option that remains Marantz' strongest asset, if one that actually thwarts an all-round recommendation at the final post.

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

☎ (0753) 680868

## LABORATORY REPORT

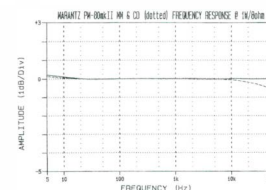
	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	133.0W	129.0W	127.4W
4ohms	227.3W	222.8W	214.0W
Dynamic Headroom (1HF)	+1.36dB (176.3W)		
Maximum Current (5msec, 1% THD)	13.7A		
Output Impedance	0.057ohm		
Damping Factor	140.7		
		CD	MM (Vinyl)
Stereo Separation (1kHz)		77.6dB	76.7dB
(20kHz)		63.5dB	63.5dB
Channel Balance (1kHz, -20dBV)		0.03dB	0.03dB
(-60dBV)		0.29dB	0.29dB
Total Harmonic Dist. (0dBW)		-93.6dB	-99.1dB
(2/3 power)		-89.3dB	-93.1dB
CCIR Intermod. Dist. (0dBW)		-100.6dB	-80.3dB
(2/3 power)		-98.5dB	-81.5dB
Noise (A wtd, 0dBW)		-96.6dB	-90.9dB
(2/3 power)		-109.4dB	-92.5dB
Residual noise (unwtd)		-84.3dBV	-84.4dBV
Input Sensitivity (for 0dBW)		17.7mV	301uV
(for full output)		201mV	3.45mV
Disc Overload (1kHz)			199mV
(20kHz)			1690mV
(50kHz)			2750mV

Tape Output/Impedance 11.7V (disc) / 1.37kohm  
 Input loading 22kohm/100pF 47kohm/120pF  
 DC offset, left/right -2.7mV/+1.5mV  
 Serial Number MZ009333120300

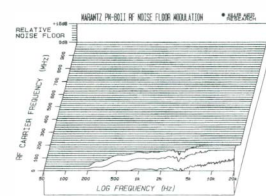
Marantz' Class A option increases the standing current in the *PM-80MkII*'s output stage, ensuring all its power transistors are permanently conducting. This prompts an insignificant 0.5dB deterioration in signal-to-noise ratio (2dB in residual noise) while crossover distortion (20kHz/1W) falls from 0.0027 to 0.0009 per cent.

Naturally, the maximum output falls from 130W in Class AB to 31W in Class A, the latter increasing to 58W into 4ohm with a headroom of just +0.4dB to accommodate musical peaks. Sensitive speakers are a must.

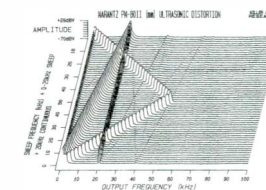
Other circuit innovations reduce noise from -83dB (PM-80, issue 85) to -97dB, one of the widest 1W/Bohm signal-to-noise ratios ever recorded for an integrated amp. Sadly, its effect on sound quality is uncertain.



All inputs are boosted by an alarming +5.5dB at an equally alarming 1.6Hz.



May be unpredictable with CD players radiating RF noise below 100MHz.



Minuscule distortion at high frequencies where negative feedback is less effective.

# Pioneer A-400X



**H**aving achieved Best Buy status for its A-400 in issue 92, Pioneer was bound to tread carefully when the time came for a replacement. Rather than a completely new amplifier, therefore, Pioneer has decided to launch a companion model, the £300 lookalike A-400X. This version shares the same minimalist virtues found in the A-400 though there are some changes in the circuit detail.

It has the same casework as both the A-300X and A-400 with all the features of the latter (MM/MC, two tape and three line inputs) minus, for reasons of simplicity, a headphone socket. By way of recompense, there's now a double set of speaker outlets to facilitate bi-wiring, though none of this betrays a hint of the metamorphosis within.

Here, Pioneer's Super Linear Circuit has been dropped in favour of a new Wide Range Linear Circuit where high gain, tweaky capacitors and improved signal-to-noise ratios are the order of the day.

## Sound quality

The net result of this rethink is a more contemplative sound than that provided by the original A-400 (issue 92). It certainly portrayed the drama of music in a thoroughly unforced way, captivating our listeners with a natural acoustic that hung between and behind the speakers rather than bursting forward into their laps.

Listening to Mahler's *Fifth Symphony*, we could easily discern the layout of the orchestra with violins and woodwind to the left, violas, cellos and double bass to the right, and brass bringing up the rear. More importantly, these instruments united to convey a mighty sense of scale without sounding confused or incessant. This sense of scale reflected the growing structure of the music while retaining a unique mildness of its own.

For example, the beautiful resonance of tympani and lower strings that mark the introduction to Rachmaninov's *Symphony* were heard in a completely new light via the Pioneer's MM disc stage. This richly detailed performance communicated the full scope and ambience of the venue in addition to the clear enthusiasm of the orchestra itself. It was absolutely fabulous stuff.

### VERDICT

- ▲ Believable sense of musical scale and acoustic regardless of input; easy going but utterly captivating.
- ▼ Nothing much to say against such a fine all-round performer at this price.
- ▶ **£299.95**

**SOUND QUALITY** ■■■■■

**VALUE FOR MONEY** ■■■■■

## Conclusion

In much the same fashion as Audiolab's 8000A, Pioneer's A-400X is a highly consistent performer. Unlike the Audiolab, though, the Pioneer is gentler and more even-handed. It's an amplifier that lulls the listener without betraying a breath of effort. It certainly offers a different perspective from its companion A-400 but is no less enthralling for its sobriety. As a result, the A-400X deserves a Best Buy all of its own.

Pioneer (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough SL2 4QP.  
☎ (0753) 789789

## LABORATORY REPORT

	20Hz	1kHz	20kHz
<b>Maximum Continuous Power Output, 8ohms</b>	63.5W	68.0W	65.7W
<b>4ohms</b>	99.0W	109.2W	106.1W
<b>Dynamic Headroom (IHF)</b>	+1.0dB (85.4W)		
<b>Maximum Current (5msec, 1% THD)</b>	15.6A		
<b>Output Impedance</b>	0.086ohm		
<b>Damping Factor</b>	93.5		
	<b>CD</b>	<b>MM (Vinyl)</b>	
<b>Stereo Separation (1kHz)</b>	93.5dB	90.3dB	
<b>(20kHz)</b>	70.0dB	64.3dB	
<b>Channel Balance (1kHz, -20dBV)</b>	0.09dB	0.18dB	
<b>(-60dBV)</b>	0.45dB	0.54dB	
<b>Total Harmonic Dist. (0dBW)</b>	-68.2dB	-67.9dB	
<b>(2/3 power)</b>	-77.5dB	-76.2dB	
<b>CCIR Intermod. Dist. (0dBW)</b>	-77.5dB	-77.1dB	
<b>(2/3 power)</b>	-82.2dB	-81.8dB	
<b>Noise (A wtd, 0dBW)</b>	-88.0dB	-87.1dB	
<b>(2/3 power)</b>	-101.1dB	-91.1dB	
<b>Residual noise (unwtd)</b>	-83.6dBV	-83.4dBV	
<b>Input Sensitivity (for 0dBW)</b>	30.6mV	453uV	
<b>(for full output)</b>	254mV	3.71mV	
<b>Disc Overload (1kHz)</b>		154mV	
<b>(20kHz)</b>		1160mV	
<b>(50kHz)</b>		1075mV	
<b>Tape Output Impedance</b>	10.5V (disc)/1.78kohm		
<b>Input loading</b>	37kohm/80pF 55kohm/300pF		
<b>DC offset, left/right</b>	-1mV/+2mV		
<b>Serial Number</b>	NC95000055		

**New phono, volume and power supply stages (plus shielded cabling) reduce noise, as can be seen by the massive 6-7dB widening of the A-400X's signal-to-noise ratio regardless of input (88dB for A-400X, 82dB for A-400 re 1W). However, the reduction of its output impedance is actually slightly higher at 0.086ohm (0.059ohm for A-400). Otherwise, the 68W/109W power output, 15-16A current reservoir and +1dB dynamic headroom are all remarkably consistent with the A-400 (issue 92). Distortion, however, now falls from typically 0.04 to 0.013 per cent as power increases — a direct contrast with the 0.005-0.02 per cent increase incurred by the A-400 under identical conditions.**

**MM input has more extended response than IEC-recommended bass roll-off.**

**No adverse reaction to RF noise beyond the far reaches of the 400X's bandwidth.**

**Tracks of high-order IM distortion appear outside main feedback loop.**

# Rotel RA-980BX



If power is at a premium, then truckloads of speaker-frying watts rarely come much cheaper than Rotel's RA-980BX. This £425 design represents the top of the company's integrated tree, combining the high quality bass/treble controls featured in all of its 900 Series (apart from the 935) with a Michi-based MM/MC phono stage and high current power amplifier circuit which has been culled from the RB-980BX power amp.

Three other line sources and two tape decks are also catered for, along with individual pre-output and power-input sockets to accommodate any future upgrades.

Underneath the bonnet, Rotel's chunky power supply combines a massive, shielded toroidal mains transformer, separate left and right rectification and a bank of huge, slit-foil reservoir capacitors. All in all, this amplifier adds up to a tour-de-force of cost-effective engineering.

## Sound quality

Anyone looking for a very bold and grand sounding amplifier should certainly audition the 980BX because size rather than subtlety is its forte. 'Rather like one of those large puffy anoraks', one member of our listening panel suggested, 'its sound is sometimes rather too heavily padded'.

As a result, it often failed to realise the natural weight and impetus of the music. This was particularly true via the 980BX's rather restrained MM disc input where music coasted along but unfortunately never really developed into the thundering crescendos we know to be possible.

On the other hand, elegant vocal tracks or simple up-beat rock and pop music usually worked quite successfully as the amplifier proceeded to carve out a broad and tangible acoustic. The sense of urgency and rawness came over convincingly enough so it's a great

pity that the RA-980BX started to harden-up and close-in on itself when the going got really tough. And, bearing in mind our use of sensitive, easy-load Audio Note *Ell* speakers, 'tough' was not, at any point, particularly tough at all.

## Conclusion

With lashings of power in tow and a blot-free

### VERDICT

- ▲ Big and full sounding amplifier; will drive evil speaker loads with ease.
- ▼ Fails to reflect the light and shade of subtle dynamic detail with some programme material.
- ▶ **£425.00**

**SOUND QUALITY**

■■■■□□

**VALUE FOR MONEY**

■■■■□□

specifications sheet to its credit, I expected a better result from Rotel's beefy RA-980BX. Nevertheless, the RC-980/RB-980BX prompted a similarly indifferent reaction from our blind listening panel some two years ago, so perhaps its strangely impassive sound should have been predicted.

Rotel has promised to re-think the 980 circuit in an effort to combine the poise of its cheaper models with the muscle expected of a £400 winner. Now that should be an amplifier worth waiting for.

Gamepath, 25 Heathfield, Stacey Bushes, Milton Keynes MK12 6HR. ☎ (0908) 317707

## LABORATORY REPORT

	20Hz	1kHz	20kHz
<b>Maximum Continuous Power Output, 8ohms</b>	127.4W	138.7W	133.8W
4ohms	211.0W	234.8W	227.3W
<b>Dynamic Headroom (IHF)</b>	+0.84dB (168.5W)		
<b>Maximum Current (5msec, 1% THD)</b>	17.5A*		
<b>Output Impedance</b>	0.0053ohm		
<b>Damping Factor</b>	1501		
<b>Stereo Separation (1kHz)</b>		<b>CD</b>	<b>MM (Vinyl)</b>
(20kHz)		79.3dB	78.6dB
		54.4dB	53.5dB
<b>Channel Balance (1kHz, -20dBV)</b>		0.00dB	0.00dB
(-60dBV)		0.74dB	0.73dB
<b>Total Harmonic Dist. (0dBW)</b>		-91.1dB	-90.4dB
(2/3 power)		-93.3dB	-96.5dB
<b>CCIR Intermod. Dist. (0dBW)</b>		-94.2dB	-89.5dB
(2/3 power)		-96.5dB	-90.5dB
<b>Noise (A wtd, 0dBW)</b>		-77.4dB	-75.1dB
(2/3 power)		-94.3dB	-79.6dB
<b>Residual noise (unwtd)</b>		-65.7dBV	-65.7dBV
<b>Input Sensitivity (for 0dBW)</b>		17.6mV	268uV
(for full output)		208mV	3.2mV
<b>Disc Overload (1kHz)</b>			175mV
(20kHz)			1590mV
(50kHz)			1690mV
<b>Preamp Output/Impedance</b>	11.5V (disc) / 102ohm		
<b>Input loading</b>	50kohm/100pF 47kohm/120pF		
<b>DC offset, left/right</b>	-42mV/-21mV		
<b>Serial Number</b>	41297-129		
* Limited by protection circuitry			

The similarity between the RA-980BX and the RC-980/RB-980BX combination is obvious (issue 109). The stiff power supply ensures its 140W output increases by +2.3dB to 235W into 4ohm, while even its 17.5A current rating can be increased to a massive 31A (see RB-980BX) as its protection circuitry switches intermittently on and off.

High levels of negative feedback are also implied by its vanishingly low distortion (typically 0.0016-0.0028 per cent) and minute 0.005ohm output impedance, which provides an 8ohm speaker damping factor of 1500. Only its channel separation has suffered thanks to the long track runs. Textbook stuff but perhaps a little too over-compensated for its own good.

Very flat and extended response with any choice of signal input.

The Michi-style power amp is resistant to RF noise; compatibility is assured.

Linear circuit design plus plenty of feedback cuts distortion to nothing.

Hi-Fi Choice April 1994 53

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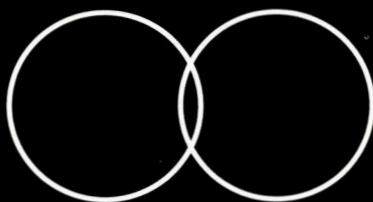
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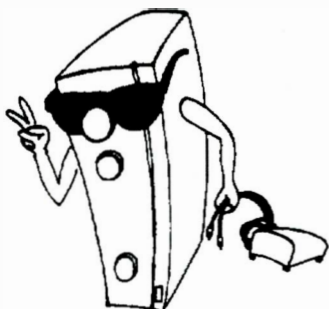
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PIONEER A400X



# Amplifiers: conclusions, best buys and recommendations

Having carefully selected this group of eight mid-priced amplifiers, there's every reason to believe the group is entirely representative of the £300-£600 breed. This being so, they represent a powerful argument for upgrading the forlorn budget amplifier currently collecting dust under your CD player.

Naturally, some of these amplifiers are more vigorous and authoritative than others, yet, as a whole, they demonstrate that the quality of mid-priced units is currently very high. Even those models that tripped up in the listening room are graced with a safety net of flexible features or are endowed with masses of power.

Kenwood's *KA-5050R* sounds rather too matter-of-fact, just as Linn's *Majik-1* trades the sweetness of other amplifiers for a hard, rough and aggressive style. But even this lack of subtlety ensures it's equipped to successfully brush-off the rough and tumble of modern rock.

Moreover, by dint of their comprehensive remote control, both amplifiers are a doddle to operate. And the Linn is backed up by a modular upgrade path including multi-room options.

Neither are Rotel nor Marantz up with the cream on this occasion, despite enjoying a heritage of great sounding separates. Our panel likened Rotel's *RA-980BX* to a PA system, one that creates a voluminous sound with little behind-the-scenes control. There's plenty of energy in its growling bass, make no mistake but, just like the Marantz *PM-8011*, decaying notes tend to stop dead rather than fade gently away. On the other hand, no competing amplifier has the *PM-8011*'s luxurious class A option or will match the Rotel for watts-per-pound.

Harman's *HK1400* is something of a contrast for it is neither especially versatile nor stunningly powerful. However, its liberal but highly engaging

character delighted our listeners as we moved from classical through jazz to rock and pop selections. The naturally bouncy quality of its bass keeps everything rolling at a fair lick without ever sounding hard or incessant.

Audiolab's *8000A* provides further contrast, conveying up front music and continuing the tradition for highly disciplined, neutral but faithful hi-fi. The *8000A* is still a must for all systems that read music strictly by the book.

This leaves us with the two stars of our show which, coincidentally, are also the most affordable. Both Arcam's *Alpha 6* and the Pioneer *A-400X* are below £330 and both recreate a marvellous sense of acoustic and anticipation, underpinned by very solid dynamics.

Furthermore, both are very easy-going yet, when the chips are down, the *Alpha 6* fails to delve as deeply, or fire the senses as convincingly, as the *A-400X*.

Only the Pioneer succeeds in punching through the hazy multi-tracking of modern rock and pop that leaves its costlier cousins sounding more than a little vague and confused. Once again, the Pioneer *A-400X* makes no great show of its dynamic ability yet its music never sounds soft or compressed. It simply kicks ass.

## Best of the rest

If nothing in this test really fits the bill then you must be really fussy, still, here are a few alternatives to chew over. The most persuasive of which include Pioneer's original *A-400* (£280) with its slightly forward and bubbly sound and Arcam's refreshingly dry and crisp-sounding *Delta 290* (£450). Both of these promise years of trouble-free music with the option of matching separates as a further bonus.

Nevertheless, if you are prepared to trudge off the beaten track then there are a number of exciting substitutes to tickle the fancy of the most hard-bitten enthusiast. At £400 Albarry's *PPI* integrated comes with a variety of disc options, all imbued with a decidedly warm and earthy character.

Then there's the compelling heat of Magnum's heavyweight *A-Class* (£500), wafting oodles of rich and colourful music your way. And finally,

## Best Buy and Recommended models

### Best Buy

**Pioneer A-400X (£300)** This looks like the established *A-400* but uses new circuitry to encourage a gentler if no less enthralling sound.

### Recommended

**Arcam Alpha 6 (£330)** A new MOSFET design with a subtle and melodic sound that takes a conservative view of powerful dynamics.

**Audiolab 8000A (£450)** Recent updates have maintained its competitiveness with a thoroughly refined, consistent and very disciplined sound.

**Harman Kardon HK1400 (£400)** HK's first line-only amplifier exudes a relaxed but confident sound that is only troubled by the most complex of recordings.

## Best Buys and Recommendeds

Products that make the grade are awarded *Hi-Fi Choice's* unique Best Buy or Recommended accolades. This sets them apart as being capable of a higher standard of fidelity than average at a particular price.

A product carrying the **Best Buy** swing tag is significantly better than the alternatives in its price band. It is of excellent quality and very good value for money. Watch out for this logo. It is your guarantee of quality.



**Recommended** products are also very good, but not quite in the same league as Best Buys. Despite being runners up, they are definitely worth considering, as they may prove more compatible in some systems.



Arcam's *Delta 290* is a key player in the sub £500 amplifier stakes.

the modular construction of Moth's *Series 30* combination (from £388) is especially attractive, allowing you to upgrade with a phono stage or new power supply when funds permit.

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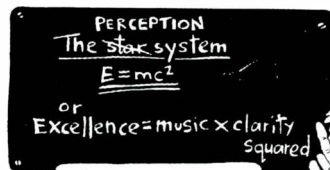


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HiFi Corner 031 220 1535.  
In HiFi 031 225 8854.
- Enfield**  
Sevenoaks HiFi 081 342 1973.
- Exeter**  
Radford HiFi 0392 218895.
- Falkirk**  
HiFi Corner 0324 29011.
- Folkestone**  
VJ HiFi 0303 256860.
- Glasgow**  
HiFi Corner 041 248 2840.  
HiFi Corner - Select 041 226 4268.  
James Kerr 041 332 0988.
- Godstone**  
Surrey HiFi 0883 744755.
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*Take one TV set and one hi-fi system.  
How do you put them together to  
reach audio/video nirvana?  
Paul Messenger explains.*

# Look, listen and

If your TV and hi-fi carry on entirely separate existences in the same room, it's about time you did something about it. You listen to your discs, tapes and radio through a hi-fi amplifier and speakers, yet put up with your television sound through something a decent portable stereo could embarrass.

It's such a shame. Television sound (even of the regular mono variety) is not at all bad, and can be really rather good, especially in Nicam stereo (and when they're not using those horrible tie-clip microphones). And getting the TV sound into your hi-fi system can be quite a simple matter. It can also be next to impossible, but more of that in due course.

Whether it's really worthwhile trying to make the connections with pre-Nicam monophonic TV and video equipment might be debatable, but failure to do so with the latest Nicam stereo equipment is to squander a great opportunity for quality sound.

## In the hi-fi corner

There are two key factors.

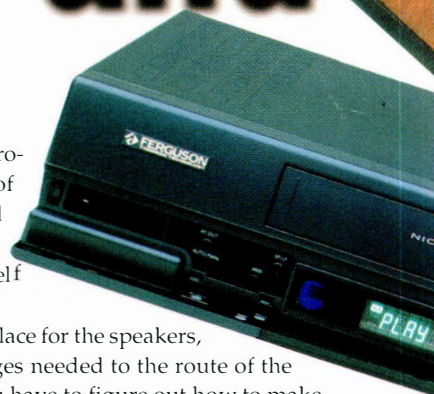
The first is that you must be able to get your speakers somewhere near — but not too close — to your TV set. A gap of at least a foot

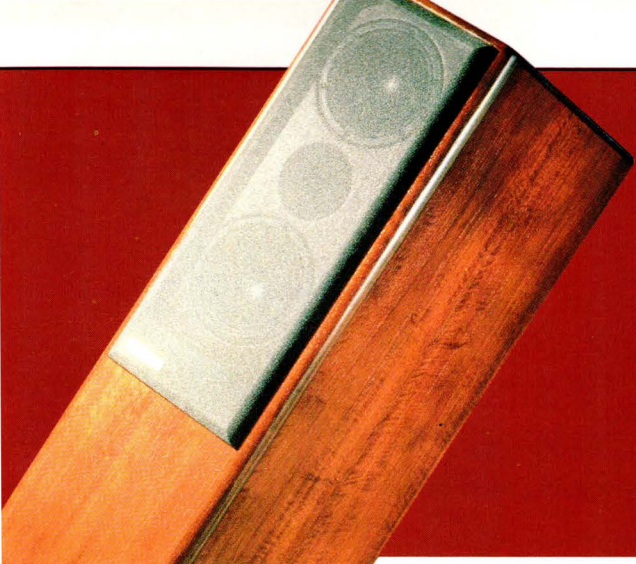
between the TV and the speakers will almost always

be ample to avoid the permanent magnets in the speakers creating colour purity (registration) distortions in the TV electron beams. Ideally, the speakers should be equally spaced either side of the screen, but some license is possible here without

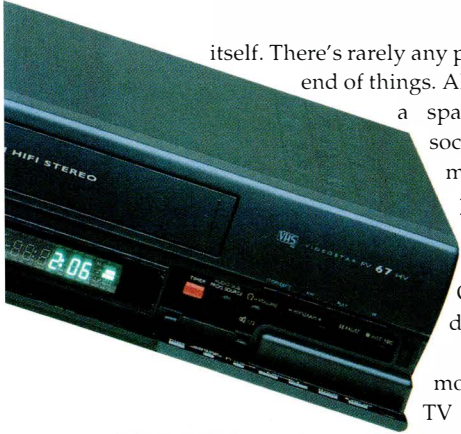
making too great a compromise. Fitting a couple of brackets to the wall behind can be the simplest solution with small bookshelf size speakers.

Having found the right place for the speakers, and worked out any changes needed to the route of the speaker-to-amp cables, you have to figure out how to make the vital connection which takes the TV sound into the hi-fi amplifier. This may be a matter of simplicity





# learn



itself. There's rarely any problem down at the hi-fi end of things. All you've got to do is find a spare pair of line input sockets, such as the one marked Aux. And if all your line inputs are already being used, you can always add one of QED's little input extender switch boxes.

The difficulties are much more likely to arise at the TV end of the equation.

Much will depend upon the age and specifications of your particular TV and VCR, and whether you have yet graduated to Nicam stereo with either or both.

### In the television corner

The most convenient solution involves using a stereo TV set fitted with a pair of audio output phono sockets on the back, and perhaps a convenient switch alongside to turn off the internal speakers. All you then need is the right length lead to reach your amplifier, and the whole package will be up and running.

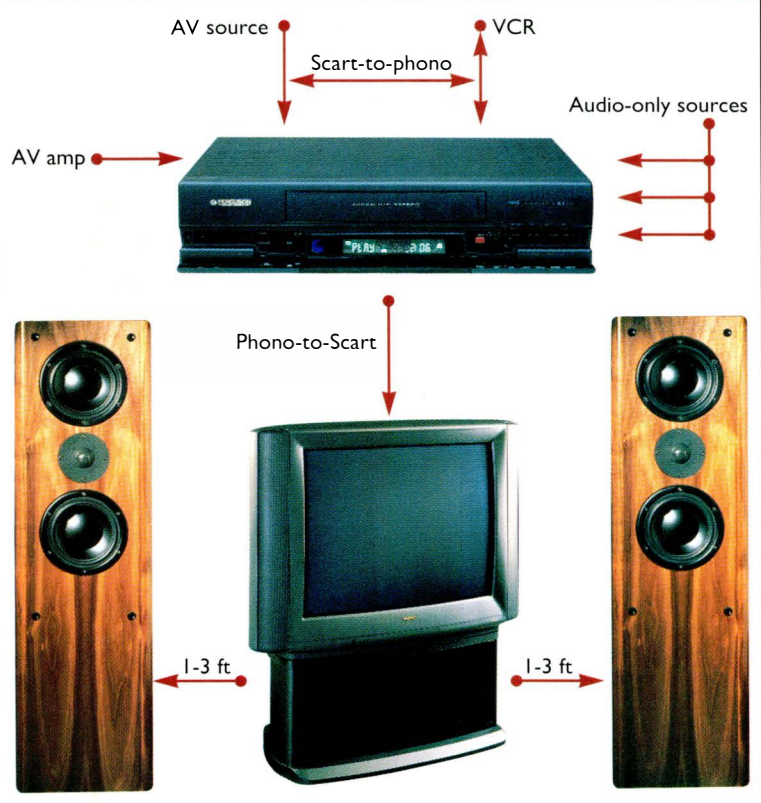
Well almost. Usually TV sound output sockets will be linked to what is being shown on the screen, but in some cases they mimic the Scart sockets in being linked directly to the TV's internal tuner. This is fine when you're watching broadcasts directly, but a nuisance when using external sources such as video recorders and satellite receivers, as these then have to have their own separate audio connections back to the amplifier.

Sometimes the TV audio output will be at a fixed (highish) level; sometimes it will be variable from the handset, which is undoubtedly convenient but, at the same time, more than likely compromises quality.

Sometimes there won't be an audio output at all, but in such cases there may be external speaker terminals or a headphone socket which can give a stereo output, albeit

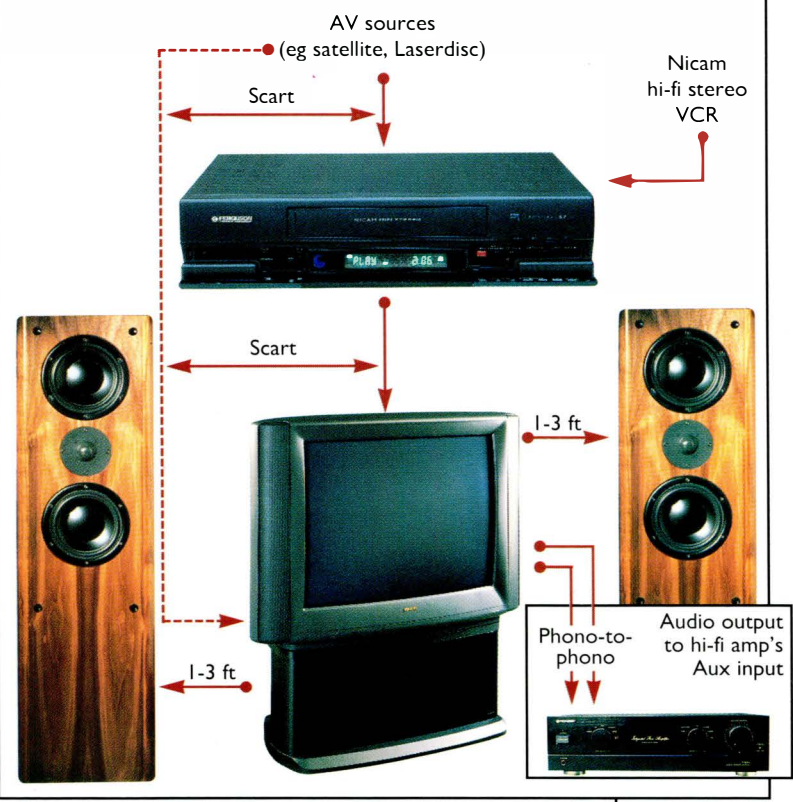
**A**t the one extreme, and providing your television has a pair of phono output sockets which are linked to the screen image (not all do), you can link up all the AV components using Scart leads, which carry video-plus-stereo-audio signals up and down the chain. The TV sound output can then be used to feed your stereo hi-fi amplifier and/or processor/amplifier arrangement.

### Simple connections

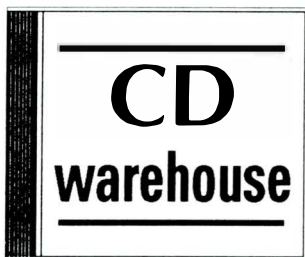


**A**t the opposite extreme, some AV processors, amplifiers and receivers can be used as the switching and routing centre of either the complete system, or of some or all of the AV components. It all depends on whether or not you're adding to or substituting for an existing stereo hi-fi amplifier. Scart-to-phono adapter leads may be needed to link the components together.

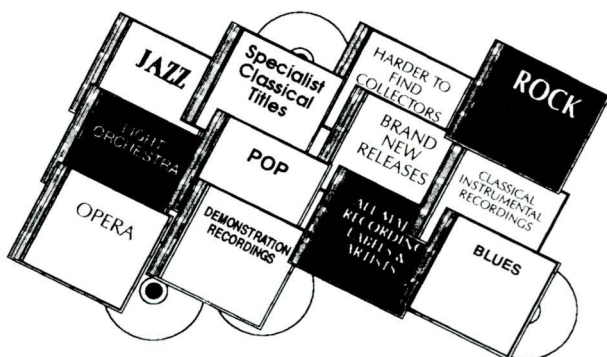
### Not so simple connections



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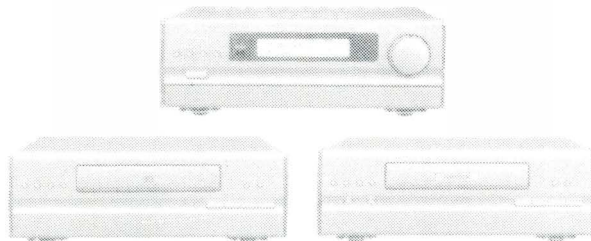


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*"TV sound is not at all bad and can be really rather good, especially in Nicam stereo."*



**The AV amplifier**

**H**ow does an AV amp differ from a normal stereo model, and do you need to trade up to one? To the second part of the question, the answer is 'not necessarily' and 'only with great care', as AV amplifiers and receivers don't sound anywhere near as good as proper hi-fi stereo amps.

One of the reasons lies in the differences which are the answer to the first part of the question; today's serious stereo hi-fi amplifier is a bare essentials affair, stripped of features to maximise sound quality. The AV amp, however, is a widget worshipper's wonderland. It's a remotely and microprocessor controlled device of sometimes fearsome complexity, which will switch and route every manner of audio and audio-with-video signal you can think of from its vast range of signal inputs and outputs on the back panel.

Stereo audio-only signals can remain in stereo-audio-only mode, of course, but stereo Dolby Surround movie soundtracks will be Pro-Logic decoded to extract the two extra channels, one for at least two extra rear/side 'surround' speakers, and another (optional) for centre-front 'dialogue'. Furthermore, simulated surround/ambience effects can be added to mono or stereo signals, in what is sometimes euphemistically termed an enhancement.

only hang-ups arise when you want to record one TV programme while watching another. The additional abilities of being able to record and keep programmes, and also replay pre-recorded videos, further strengthen the case for placing the VCR at AV centre stage and merely using the TV set as a picture display monitor.

heavily compromised by passage through all the TV set electronics, including the on-board power (sic) amps.

The headphone socket has the additional invaluable capability (unpublicised by set makers) of muting a TV set's on board speaker system — just insert a dummy (unconnected) headphone jack plug of the right size.

The final route is to use a 'spare' Scart socket (of the fully wired in/out variety) with a Scart-to-multi-phono lead, which will give fixed level stereo (or mono) audio outputs directly from the TV set's tuner.

Although it's handy to supply your hi-fi system from a screen-linked Nicam TV sound output, in reality a Nicam hi-fi stereo video recorder is usually the best quality source of stereo TV sound around, and often more accessible too. Hi-fi stereo VCRs always have audio in/out pairs, and can be treated for audio purposes just like a tape recorder. The

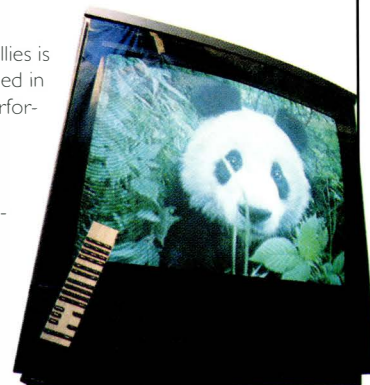
**Our pick of stereo TVs**

**D**espite pretending otherwise, television set makers — including brands just as well established in the manufacture of hi-fi, who might be expected to know better — show absolutely no recognition of hi-fi sound quality. They can't afford to. TV sets are highly price-sensitive, mass market products and the lowest manufacturing costs tend to win out. With only the rarest exceptions, built in TV sound systems are horrible, while at the same time the set makers show little inclination to make it easy to switch off the wretched things and get the potentially decent stereo sound out to a proper amplifier. Here follows a brief list of the TVs available at the moment that at least make it possible to capitalise on existing hi-fi systems.

**B&O Beovision MX6000**

The problem with many of the latest hi-tech tellies is that video signals are increasingly being processed in the digital domain. This should ensure good performance consistency over a long service life, but often has less welcome side effects too. For example, the practical real-world resolution, especially on moving, textured surfaces, falls distinctly short of the best achieved by analogue sets such as those made by Bang & Olufsen.

At £1,450 for a 28in screen, the MX6000 is expensive, has conservatively fixed resolution and perverse interconnection socketry that makes interfacing with other make components difficult. The built in speakers aren't up to much, but the rest combines exceedingly classy presentation and finish with quite the most transparent and watchable pictures around.



**Philips 32W962AC**

The current Philips models suffer from some digital side-effects, but the most pernicious can be switched off. The £1,650 32W962AC (phew!) is one of the new widescreen 16x9 aspect ratio sets. It's physically quite compact, giving a 27-28in image in 4x3 mode, but is able to magnify this to nearly the size of a giant 37in 4x3 set when in expand mode, which is great for viewing letterbox scan movies.

Resolution is (digitally) modest, but flicker-free 100Hz scanning gives impressive solidity. Socketry is convenient and — best of all — the latest Philips Nicam chips give about the most outstanding AV sound around.

**Toshiba 3327DB**

For a large 33in (4x3) image at a reasonable price the Toshiba 3327DB is obviously good value. It's not the best picture quality, but it's not bad either, and there's even basic (not Pro-Logic) Dolby Surround decoding, along with flexible socketry. Plain vanilla Dolby Surround may not have the glamour of Pro-Logic, but it's sonically less intrusive, which may well be an advantage with a serious hi-fi system. Since the Toshiba's internal amplifiers aren't exactly transparent, audiophiles can sac-



rice the convenience of remote volume control and take the main front channels direct from a Scart.



**Panasonic TX-29A3**

Panasonic's £1,000 TX-29A3, code named GA00, has an impressive 'super-flat' screen with superior geometry and colour balance, although it does suffer somewhat from the 'digital blandness' syndrome. The overall package is very compact with flexible socketry and fine ergonomics.

“*Sound: The Totems passed all my usual subjective listening tests with flying colours. Pink noise was played to determine midband colorations and the optimum listening axis. Colorations were not evident, and the sound was natural over a wide listening area.*”

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# On test: tuners

**M**arketing people talk about a tuner ratio, which is the number of tuners sold for every, say, one hundred amplifiers. This ratio is well below 50 per cent, which seems a shame, since the tuner is the one hi-fi source component that doesn't go on costing after you've bought it, as the music it reproduces comes free of charge.

How good is radio as a hi-fi source? At its best, very good indeed, though you do have to search out the high spots,

investing in a good quality hi-fi tuner (and aerial).

Our last tuner group test (issue 120), covered the widest possible range from £120 up to £1,779. This test made it clear that the engineering and sonic compromises start to become severe in the under-£200 sector. For this group review, we've consciously targeted the budget area. A £170 budget will buy you a dozen or so CDs — or any one of the six tuners we've assembled here.

The first question is whether such entry level models are capable of real hi-fi sound quality and/or superior radio reception performance. The second, of course, is which of the models shine out above their rivals on either count.

Choosing a hi-fi tuner rationally should involve weighing up price against different aspects of performance and capabilities, related to individual preferences and site. But the most important factor in nearly every buyer's mind is whether the tuner matches an already selected amplifier.

There's no reason why you can't use any tuner with virtually any amplifier, but several factors encourage partnering stablemates together. Most people will prefer the components to match cosmetically, and nowadays there's an increasing chance that the two will be linked to provide unified remote control over both. Furthermore, it's a racing certainty that the tuner designer will have used his or her company's amplifiers and other components when developing the tuner, so the two are likely to blend well in the subtler aspects of sonic compatibility too.

and these are inevitably found on the FM band because of AM's practical limitations. Radio broadcasts are often heavily compressed, partly to help motorists hear what's going on even with high background noise.

The transmission of a recording will never match the direct reproduction of the same recording in the home, so to that extent the tuner is usually regarded as a secondary source. But there's also no better way of broadening your musical horizons and gaining access to an enormously wide variety of material than by

## The cast list

Aiwa XT-950	£149.99
JVC FX-362	£139.99
Kenwood KT-2050L	£149.50
Marantz ST-53	£169.90
Teac T-X4030	£119.95
Yamaha TX-350L	£129.95

## What's in a test?

The FM test results are presented in the same order as the signal proceeds through the tuner. The front end is tested for noise at a given signal level, from which sensitivity and radio frequency (RF) noise figures are calculated. RF overload is the point where a signal 1MHz away worsens the signal-to-noise ratio of a weak (10µV) signal by 1dB.

Intermodulation is assessed during live aerial tests, with two signals 800kHz apart and both at a level of about 72dBµV.

Selectivity is measured as the level of fully modulated interfering signal that breaks through to -30dB on the audio, recovered from a 100µV silent signal 200kHz or 400kHz away.

Crosstalk is measured using a signal with heavily compressed programme fully modulating on only one channel of the stereo signal.

AM sensitivity and image rejection are judged during aerial tests on known weak signals in the day, and on the image of a strong local station. The test signal produces very low distortion, wide bandwidth amplitude modulation up to 15kHz, although these measurements cease to relate to broadcast audio above about 6.3kHz.

The Aircheck tests assessed each tuner's ability to receive, distinguish and reproduce weak and distant signals in both crowded and uncrowded sectors of the spectrum. This was carried out using a three-element roof aerial at a low level site some 50 miles from out-of-area transmissions, but also using strong local network signals and continental reception.

The tuners were then auditioned in an audiophile context over an extended period. Various components were used, including Naim's NAC52/NAP135 amplification and Tannoy 215DMT studio monitoring loudspeakers. Off-air signals were fed from a large multi-element Galaxy aerial in line-of-sight but 40 miles from the main Wrotham transmitter, giving a typical signal level of 75dBµV for the network stations.



# Aiwa XT-950



**B**udget price hi-fi separates have long been an important part of Aiwa's overall mix, and this £150 XT-950 is typical enough of the breed. It's not the least expensive Aiwa model around but it registers high on the widget scale.

The box is bigger (taller) than most, and the fascia sports a large collection of buttons, as well as quite an elaborate display. Assembly, at least, is carried out in the UK, and the unit is presumably marketed throughout Europe, judging by the multi-lingual manual. However, no attempt was made, in any language, to explain why there's a remote control sensor fitted below the on/off switch. There's certainly no handset, nor any mention of one.

From a performance point of view, there are buttons labelled RF LEVEL and IF BAND, the former providing some attenuation of local signals that are too strong, the latter a degree of selectivity adjustment. There's also an FM MODE button for selecting between mono and stereo. Large illuminated flags for any three of

the six positions share one section of the display with a reasonably useful signal strength meter.

The rest of the ergonomics were initially confusing, and with use became too tricky for their own good. There are 12 presets each for FM and AM, programmed through an excruciatingly tedious procedure, or (yet another) blasted digital clock. I can think of no useful function for the built-in timer, and the manual provides no enlightenment either.

## Aircheck

This is the only tuner in the test group with switchable selectivity on FM — but don't hold your breath. Only one extra filter is available, which gives a performance just a little better than some two-filter sets but it's no match for a full complement of four.

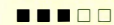
A clear selection of status indicators helps tuning, but the fitted local/DX switch is not as effective as an external passive attenuator when it comes to easing overload problems. Still, we have at least a signal strength indica-

## VERDICT

- ▲ A respectable balance of sound quality and RF performance at a relatively modest price.
- ▼ Depressingly cluttered ergonomics; RF performance features could have been better executed.

▶ £149.99

**SOUND QUALITY**



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tion (of sorts) and a more robust front-end than many at this price.

## Sound quality

Sound quality is above average in the group context, but that also means pretty poor by absolute audiophile standards. The midband is decent enough, with good dynamics that make voices suitably expressive, and a reasonable freedom from significant coloration.

But the treble doesn't really hang in there properly. The top end sounds both suppressed and also slightly detached from the rest. The net effect is not particularly sweet or transparent, but fortunately steers clear of unwanted aggression.

## Conclusion

One would hesitate to describe the XT-950 as special, and neither the bulk nor the ergonomics are particularly helpful. But its performance is a shade above average in both sound quality and RF reception, so Recommendation is appropriate, if not particularly enthusiastic, at the reasonable price.

Aiwa UK Ltd, Unit 5, Heathrow Summit Centre, Skyport Drive, West Drayton, Middlesex UB7 0LY. ☎ 081-897 7000

## LABORATORY REPORT

A more substantial box than most conceals its half-empty nature. This made in the UK tuner devotes a separate integrated circuit, the LA1245, to AM while using the I235 for FM and the ever-present LA3410 as a decoder. Two standard IF filters make for very good stereo separation in the wideband mode — 40dB as much as anyone could want. And although the front end could be part of a transistor radio, it doesn't disgrace itself in any way.

With the most praiseworthy noise floors of the group, this is the only tuner tested here to exceed broadcast specifications in stereo mode. In mono, 72dB down on the CCIR curve using a peak-reading meter is a very good noise figure, and speaks well of the quality of the synthesiser and local oscillator.

Distortion is a low 0.125 per cent in wide FM mode, and rises by only the smallest amount when the narrow filter is switched in. However, although the AM section has its own integrated circuit, which gives good noise figures, it doesn't have a ceramic filter of comparable quality. Treble is more than 10dB below the target level at 5kHz, and levels of distortion are bettered by a number of other implementations.

The tuner recognises that strong signals are nowadays as much of a problem as weak ones by providing a 'local/DX' switch. In practice, however, a passive attenuator is a much more effective way of treating overload problems and keeping them in check.

### FM SECTION: FRONT END

Ref O/P level 0dB

Sensitivity for 50dB (rms) S/N 4.0uV

12dB uV 52dB

S/N at 10uV input (CCIR, peak) 5dB

RF Noise figure 5dB

RF Overload 80dBuV

Intermodulation fair

### ADJACENT CHANNEL PROTECTION

IHF Selectivity +/-200 kHz wide -5dB

narrow +4dB

IHF Selectivity +/-400 kHz wide +54dB

narrow +65dB

### STEREO CROSSTALK (programme, peak)

Level -40dB

### DETECTOR AND DECODER

Noise Floor (mono, peak)

unweighted -76dB

'A' weighted -81dB

CCIR weighted -72dB

Noise Floor (stereo, peak)

unweighted -65dB

'A' weighted -70dB

CCIR weighted -64dB

### Distortion (100% modulation)

0.125% -58dB

### Frequency Response rel 50uS, 315Hz

5.0kHz 0.1dB

10.0kHz -0.3dB

12.5kHz -0.5dB

16.0kHz 5.3dB

### AM SECTION: RF PERFORMANCE

Sensitivity fair

Image rejection good

### AUDIO PERFORMANCE

Distortion (90% modulation) 100H 3.5%

-29

1kHz 2.2%

-33

### Frequency Response rel 2x 50uS, 315 Hz

2.5kHz (-4.09dB) +0.6dB

5.0kHz (-10.72dB) -10.3dB

6.3kHz (-13.75dB) -15.3dB

8.0kHz (-17.20dB) -21.3dB

### Noise Floor (saturation, peak)

unweighted -59dB

'A' weighted -62dB

CCIR weighted -59dB

# JVC FX-362



**A**ctive in all areas of audio and video electronics, JVC may have been championing the role of the receiver (tuner/amplifier combination) in recent years, but it still keeps the separates faith with a couple of budget tuners.

This £140 FX-362 is one of two such JVC tuners. The other model, the 342, is a tenner less. The justification for the FX-362's price premium is the inclusion of a rotary tuning knob, which is claimed to resemble the feel of an analogue tuning mechanism. This it singularly failed to do. Looking on the bright side, however, at least it's easy to distinguish from the other control surfaces.

Presentation is very attractive, with neatly ordered buttons either side of and above the centrally placed fluorescent display. Internal memory provides for up to 40 preset programmes, which may be randomly assigned to stations on the FM or AM bands. The latter unusually scans both medium and long waves contiguously and without distinguishing between

the two. JVC's 'compu-link' system will permit owners of the company's remote control amps to change programmes via the handset.

It's not the simplest tuner to operate, using three different buttons to handle the memory function, for example. I remain puzzled too by the explanation for the button marked FM MODE/MUTE; why wasn't the word mono included for clarification? Nor can I figure out why there's a permanent bright vertical line in the middle of the display.

## Aircheck

This tuner achieves good basic sensitivity, but it does so at the expense of a front end which is flattened by strong signals. No weak London signals could be heard at all when it was connected directly to the aerial, but their presence was detected when a 6dB or 12dB attenuator was inserted into the aerial lead.

Again this is a two-filter tuner, and in this case the filters are on the wide side, which makes it completely unsuitable for digging out

## VERDICT

▲ Attractive, symmetrical styling, with easy to find tuning knob for nostalgia buffs.

▼ Sound quality is fairly ordinary and RF performance worse than that.

▶ £139.99

**SOUND QUALITY**

■ ■ ■ ■ ■

**VALUE FOR MONEY**

■ ■ ■ ■ ■

weak signals in a crowded band. AM comes out too quiet (7dB softer than FM) and very heavily rolled-off in the treble.

## Sound quality

Sound quality was disappointing. Although the bass and midrange are quite firm, the top end sounds distinctly shut in, and this then tends to draw attention towards colorations in the upper midband. Slight 'quacky' and cupped-hands effects were both audible, and although the end result remained quite entertaining, it also sounded somewhat processed and echoey, lacking in the subtle delicacy and refinement of a true hi-fi performer.

## Conclusion

Although 362 could easily find a role partnering a JVC amplifier and borrowing its remote control, doing so would render the rotary tuning knob even less useful, implying that the cheaper 342 would more likely be the better bet. Assessed purely as a standalone device, it's hard to garner much enthusiasm for either the sound or the radio reception capabilities of the 362, even at this relatively modest price.

JVC UK Ltd, JVC House, JVC Business Park, Priestly Way, London NW2 7BA. ☎ 081-450 3282

## LABORATORY REPORT

A rudimentary front end lets the side down badly, signals of just above 3mV (70dB) beginning to impair the noise floor. If you live in a city area where strong local signals can give you stereo with just a bit of wire, then connecting this tuner to an outdoor aerial could be a disappointing experience.

Some IF (intermediate frequency) breakthrough was noted when attempting to test FM noise floors. The FM IF is in the middle of a busy part of the short waveband (around 10 metres). Usually this is not a problem, but it could be here. Whistles and warbles were noted on the noise floor tests which appeared to stem from direct breakthrough of 10.7MHz signals.

The ubiquitous LA1266/LA3401 chipset is used again. The two wide FM IF filters produce reasonable stereo separation, but signals 200kHz away from the wanted one need to be 8dB weaker before they stop causing serious interference. Many tuners costing not much more can cope with signals 10dB or even 20dB stronger than the wanted one on the adjacent channel. There are holes in the circuit board for a birdie filter to clean up stereo reception, but none is fitted.

The AM stage has a single-section filter of lowest-cost, with disastrous effects on the frequency response which, unweighted, is more than 34dB down at 6.3kHz (the frequency marking the end of useful energy on current AM transmissions).

What could have been 6kHz of audio bandwidth comes out as a lowly 3kHz — telephones do better than this.

<b>FM SECTION: FRONT END</b>			
Ref O/P level	+4.8dB		
Sensitivity for 50dB (rms) S/N	4.0uV		
	12dB/uV		
S/N at 10uV input (CCIR, peak)	52dB		
RF Noise figure	5dB		
RF Overload	71dB/uV		
Intermodulation	poor		
<b>ADJACENT CHANNEL PROTECTION</b>			
IHF Selectivity +/-200kHz			
	wide	-8dB	
	narrow	-dB	
IHF Selectivity +/-400 kHz			
	wide	+37dB	
	narrow	-dB	
<b>STEREO CROSSTALK (programme, peak)</b>			
Level	32dB		
<b>DETECTOR AND DECODER</b>			
Noise Floor (mono, peak)			
	unweighted	-71dB	
	'A' weighted	-71dB	
	CCIR weighted	-62dB	
Noise Floor (stereo, peak)			
	unweighted	-53dB	
	'A' weighted	-61dB	
	CCIR weighted	-54dB	
	Distortion (100% modulation)		
		0.25%	-52dB
	Frequency Response rel 50uS, 315Hz		
		5.0kHz	-0.4dB
		10.0kHz	-1.4dB
		12.5kHz	-1.2dB
		16.0kHz	-6.7dB
<b>AM SECTION: RF PERFORMANCE</b>			
Sensitivity			good
Image rejection			fair
<b>AUDIO PERFORMANCE</b>			
Distortion (90% modulation) 100H			3.3%
			-30
		1 kHz	1.5%
			-37
	Frequency Response rel 2x50uS, 315Hz		
		2.5kHz (-4.09dB)	-1.9dB
		5.0kHz (10.72dB)	-15.2dB
		6.3kHz (-13.75dB)	-20.5dB
		8.0kHz (-17.20dB)	-26.5dB
	Noise Floor (saturation, peak)		
		unweighted	-58dB
		'A' weighted	-58dB
		CCIR weighted	-52dB

# Kenwood KT-2050L



**W**ell known as a manufacturer of high quality radio tuners for both hi-fi enthusiasts and amateur radio hams, Kenwood's £180 3050L came under scrutiny in our last tuner group test (issue 120). This KT-2050L is one rung lower down the ladder at £150, but is still one step up from the beer budget 1050 (£120).

Given such close spacing, differentiating between the models becomes something of an art in feature specification, and it has to be said that the choices adopted seem a little bizarre. Down-grading from the 3050 involves sacrificing RDS, optional selectivity and signal strength metering. That the 2050 chooses to incorporate a plethora of timer and labelling facilities therefore indicates a strange sense of priorities.

I have plenty of clocks, thank you, and the best ones have hands on their faces. This doesn't, and merely duplicates the one on the VCR. It's all part of the system remote function, of course, which acts as a powerful incentive to purchase all components from the

same brand and enjoy remote control convenience by linking up the sockets on the rear. In a system context, this tuner clock then acts as the timer for carrying out absentee recordings and other even less useful functions.

In other respects this is a compact and handsomely finished device, although the attractively curved profile of the metal fascia means that the display itself is set rather deep behind its visor. This leaves the tuning mode tell-tales obscured when standing only slightly above the line of the unit.

## Aircheck

This tuner managed, now and again, to show up the Denon reference tuner on certain signals. The front end could take a fair blast without getting upset, and the basically good noise performance was also better maintained than some. But there's still only two (admittedly narrow band) ceramic filters sorting out the selectivity, so when things get tight, reception still gets into trouble.

## VERDICT

- ▲ Well presented and finished; open, clear balance and decent RF performance for the price.
- ▼ Strange feature prioritisation favours a role as part of a complete Kenwood system.

▶ £149.50

**SOUND QUALITY**

■ ■ □ □ □

**VALUE FOR MONEY**

■ ■ □ □ □

## Sound quality

Rated about average in the test group, it's interesting to speculate whether there is any correlation between the slight brightness in the measured response, and the observation that the overall balance here does err on the bright side.

The result is clear and open, but a little inclined to emphasise the upper midband, and also exaggerate any hiss in the programme material. There's a slightly 'shouty' effect here, as of not quite fully suppressed colorations. This also serves to distract the attention from the bass end, which sounds just a trifle squashed and constrained.

## Conclusion

The feature roster might suggest that this 2050L will be of most relevance in a Kenwood system context, where the remote and timer facilities have some relevance. As an entirely independent device, however, though it offers decent enough RF performance at a pretty reasonable price, the sound quality is nothing to make it stand out from the crowd.

*Trio-Kenwood UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB.*

☎ (0923) 816444

## LABORATORY REPORT

A lower than usual output level poses no practical difficulties but might make in-shop listening comparisons misleading. Kenwood manages to get a much better performance out of a Mitsumi front-end than the JVC implementation, the chipset here using the less common but hardly obscure LA 1255 IF/detector linked to an AN7470 decoder. Two narrow IF filters make up the FM selectivity, but AM has only one such filter section. A single-coil pilot filter and a dual-coil birdie filter indicate adequate provision in this area, but as usual the AM response drops off at the high frequency end, though not quite so drastically as some.

The audio filter has a sharp 19kHz notch to remove pilot tone residue, but this leaves 16kHz test signals 1dB up on what might be expected, which is unusual. The possible correlation between sound quality and audio filtering characteristics is interesting. Some tuners (like this group's Marantz and the Rotel tuner tested in issue 120) omit the filtering altogether in the interests of improved sound quality.

Stereo separation is an impressive 38dB despite the use of narrow IF filters. There's always a trade-off between good selectivity and good separation, but this tuner offers a good combination for its price and complexity. The level of AM distortion is nothing to write home about, while the frequency response is still too far down above 3kHz, and not down far enough above 8kHz, for the best quality reproduction of a medium which rarely gets its due.

### FM SECTION: FRONT END

Ref O/P level -4.0dB  
Sensitivity for 50dB (rms) S/N 4.0uV  
12dB/uV  
S/N at 10uV input (CCIR, peak) 52dB  
RF Noise figure 5dB  
RF Overload 82dB/uV

### INTERMODULATION

### ADJACENT CHANNEL PROTECTION

IHF Selectivity +/-200kHz wide -dB  
narrow +11dB

IHF Selectivity +/-400kHz wide -dB  
narrow +55dB

STEREO CROSSTALK (programme, peak) Level -26dB

### DETECTOR AND DECODER

Noise Floor (mono, peak) unweighted -70dB  
'A' weighted -74dB  
CCIR weighted -68dB

Noise Floor (stereo, peak) unweighted -56dB  
'A' weighted -66dB  
CCIR weighted -60dB

### DISTORTION (100% MODULATION)

0.2% -54dB

### FREQUENCY RESPONSE rel 50uS, 315Hz

5.0kHz +0.5dB

10.0kHz +0.4dB

12.5kHz +0.8dB

16.0kHz +1.0dB

### AM SECTION: RF PERFORMANCE

Sensitivity good

Image rejection fair

### AUDIO PERFORMANCE

Distortion (90% modulation) 100Hz 5.8%

-25

1 kHz 1.5%

-37

### FREQUENCY RESPONSE rel 2x 50uS, 315Hz

2.5kHz (-4.09dB) +0.4dB

5.0kHz (-10.72dB) -6.7dB

6.3kHz (-13.75dB) -10.2dB

8.0kHz (-17.20dB) -14.0dB

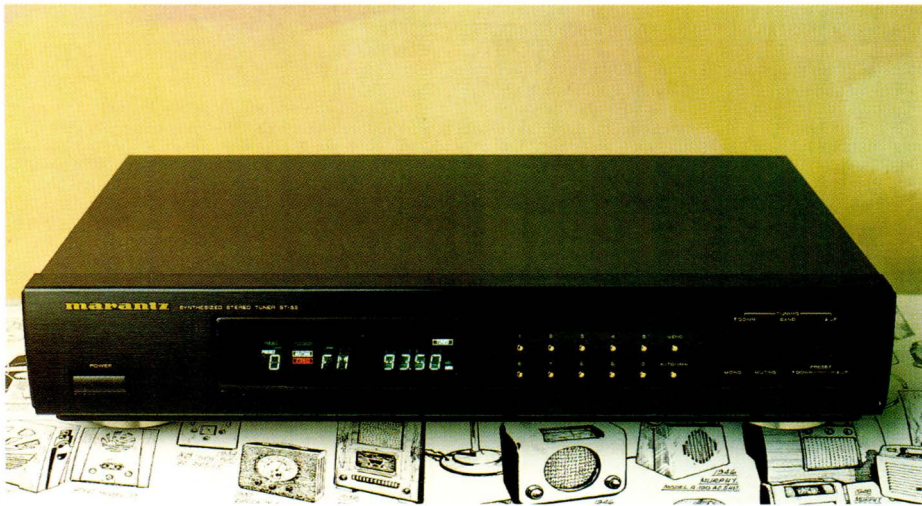
### NOISE FLOOR (SATURATION, PEAK)

unweighted -53dB

'A' weighted -53dB

CCIR weighted -48dB

# Marantz ST-53



Where CD players and amps lead, tuners must follow. However, this is more likely to be for cosmetic and system remote control matching reasons than for an independent life of their own. The Marantz ST-40L budget tuner has been around for several years and is beginning to look a little dated, so the arrival of this new ST-53 as a replacement comes as no surprise. That the price has crept up from £140 to £170 is, of course, regrettable.

Presentation is slim and restrained, finish is excellent, and the button count is low enough to make life easy. If you have other Marantz (or Philips) based components, you may be able to link into remote switching of presets.

A large transparent visor covers the display and accommodates a dozen little, brightly finished buttons. The display itself is a lurid green colour, well offset from the centre line, which spoils the symmetry. It supplies most of the basic status, frequency and preset information, but includes nothing to indicate the incoming

signal strength, which is a real shame.

Positive impressions of the ergonomics started to pall the third time I accidentally hit the waveband switch. Then there's the auto/manual tuning mode button, artfully disguised as a preset. You can store up to 59 stations, randomly across FM and both MW and LW AM, but selecting them directly involves a 1.5 second pause; the preset up/down rocker is more convenient.

## Aircheck

All praise to the 25kHz tuning increments on FM. If this can be done without compromising synthesiser performance it's worth having. But essentially this is just a two-filter tuner, albeit with narrow-ish filters. It can't compete on RF performance with those that have three or four.

So stations with interference problems emerged at least one grade and often two below our reference, although quite often the optimum tuning point was found on a 25kHz offset. Weak signals failed to shine even when

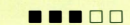
## VERDICT

- ▲ Unusually sweet sounding high class tuner system, thanks maybe to lack of pilot tone filtering.
- ▼ Lack of pilot tone filtering might have unwelcome consequences, especially when tape recording.
- ▶ £169.90

**SOUND QUALITY**



**VALUE FOR MONEY**



no interference was close. AM sounded better than average, but then the average is not good.

## Sound quality

Perhaps there is something in this omission of pilot tone filtering, at any rate as far as low cost tuners are concerned. Played through our upmarket reference system, the ST-53's relative freedom from treble colorations was obvious, the balance being sweet, if a shade shut in.

The bottom end, however, does seem a little lacking in purpose and drive, and the drama and tension of more dynamic devices was somewhat lacking. Background noise also seemed a little more audible than usual.

## Conclusion

From an audiophile perspective, the ST-53 is at least partly successful, and is certainly capable of a smoother, sweeter sound than its peers assembled here. The trade off is found in an indifferent RF (radio reception) performance and the £170 price-tag pushes it out of the realm of a truly 'budget audiophile' device and precludes it from Recommendation.

Marantz Hi-Fi UK Ltd, Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middlesex UB7 0EH. ☎ (0753) 680868

## LABORATORY REPORT

Internal line-up is a routine Mitsumi three-gang front-end: LA1266 IF/detector with two ceramic filters, a single-tuned discriminator, LA3410 decoder and no pilot-tone filtering at all. Output is a generous +3.2dB from 100 per cent modulation on FM, some 3dB lower on AM. Note that the FM frequency response curve is less than 1dB away from the theoretical ideal at 16kHz. This is because there is no pilot tone and supersonic garbage filter on the outputs, which usually begins to make its presence felt at this frequency.

The noise floors of this tuner are unremarkable in mono, but just plain silly in stereo, due to high levels of pilot tone present on the output. Only the CCIR weighted figure largely removes this from the equation. Having theoretically inaudible supersonic rubbish running around an amplifier may have unexpected effects, and can certainly cause interference on a tape recording made by a machine which is not itself fitted with a multiplex (MPX) filter.

Stereo separation is on the poor side at around 26dB on dense programme material, and interestingly it takes about 66dB (2mV) of test signal before even this figure is reached.

AM benefits from the relative generosity of a two-section ceramic filter, but this is still, as usual, too narrow for good quality reception — yet some 9kHz whistles are clearly audible on nearly every channel at night. Distortion figures are fairly good for the medium, though the Yamaha shows what can be achieved.

<b>FM SECTION: FRONT END</b>			
Ref O/P level	+3.2dB		
Sensitivity for 50dB (rms) S/N	4.0uV		
	12dB/uV		
S/N at 10uV input (CCIR, peak)	52dB		
RF Noise figure	5dB		
RF Overload	81dB/uV		
Intermodulation	fair		
<b>ADJACENT CHANNEL PROTECTION</b>			
IHF Selectivity +/-200 kHz			
	wide	-dB	
	narrow	+14dB	
IHF Selectivity +/-400 kHz			
	wide	-dB	
	narrow	+50dB	
<b>STEREO CROSSTALK (programme, peak)</b>			
Level			-26dB
<b>DETECTOR AND DECODER</b>			
Noise Floor (mono, peak)	unweighted		-74dB
	'A' weighted		-75dB
	CCIR weighted		-66dB
Noise Floor (stereo, peak)	unweighted		-36dB
	'A' weighted		-46dB
	CCIR weighted		-61dB
<b>Distortion (100% modulation)</b>			
			0.2%
			-54dB
<b>Frequency Response rel 50uS, 315Hz</b>			
	5.0kHz		+0.2dB
	10.0kHz		-0.1dB
	12.5kHz		-0.3dB
	16.0kHz		-0.7dB
<b>AM SECTION: RF PERFORMANCE</b>			
Sensitivity			good
Image rejection			fair
<b>AUDIO PERFORMANCE</b>			
Distortion (90% mod)	100H		2.4%
			-32
	1kHz		1.5%
			-37
<b>Frequency Response rel 2x 50uS, 315Hz</b>			
	2.5kHz (-4.09dB)		+3.2dB
	5.0kHz (-10.72dB)		-4.2dB
	6.3kHz (-13.75dB)		-8.3dB
	8.0kHz (-17.20dB)		-13.7dB
<b>Noise Floor (saturation, peak)</b>			
	unweighted		-54dB
	'A' weighted		-54dB
	CCIR weighted		-47dB

# Teac T-X4030



**K**nown primarily and originally as an open-reel tape transport specialist, Teac remains an audio specialist active in both professional and consumer fields to this day. It's fairly modest range of 10 hi-fi separates includes just this one £120 tuner, T-X4030, to partner the company's amplifiers (cosmetically that is; there are no remote control provisions of any kind).

It's a neatly styled unit, attractively slimline and pleasingly symmetrical with discreet but legible labelling. A straightforward (orange) display is large enough to be read from anywhere in the room, and is less glaring than most. The low cost is an obvious plus point, but it needs to be seen in the context of the lack of long wave provision and the lack of any signal strength metering.

The ergonomics are attractively simple. It's handy to have two separate buttons for selecting between scan- and step-tuning modes, and between mono-without and stereo-with-muting.

One of the other main controls is used to store preset stations into the 20-slot memory, covering any random selection from the FM and MW bands, and accessed from a long row of 10 clearly identified buttons: short push 1-10; hold it down, 11-20. Regrettably labelled 'MPX noise canceller', the remaining button provides an effective 'stereo blend' halfway house between full stereo and full mono with much less noise than the former when the signal is very weak.

## Aircheck

This tuner has a reasonable aerial performance, especially considering it bears the lowest price of the group. It held up well on weak signals while not suffering too much from overload and intermodulation problems. While adjacent-channel problems were always there, performance was not bad for a two-filter tuner. Even AM was less muffled than most, though the Marantz offers a slight improvement still.

## VERDICT

▲ Neat presentation and mostly good ergonomics; respectable sound and RF performance at a modest price.

▼ Lacks sonic solidity and coherence; limited features and basic RF engineering content; No Long Wave.

▶ £119.95

**SOUND QUALITY**



**VALUE FOR MONEY**



## Sound quality

Although it lacks the solid conviction and coherence of an audiophile tuner, the 4030 still turns in a respectable FM sound quality, only bettered by the Marantz among this particular test group.

The basic sound balance is just about right, which is a good start, and colorations are under pretty good control, though there's always some suggestion that they're lurking beneath the surface — a hint of spit and splatter, a touch of chestiness and low frequency timesmear. Dynamics do seem a trifle squashed and depth is a bit constrained, but basic stereo imaging is well formed.

## Conclusion

The sound of the Teac is less sweet and substantial than the best, but passes muster nonetheless. It keeps its inadequacies under better control than most too. The presentation is pretty and discreet, the ergonomics simple and straightforward. RF performance is as good as any and better than most, and the price is also less than the rest. No it ain't great, but it is pretty good value, so a Best Buy rating is the logical conclusion.

Teac UK, 5 Marlin House, The Croxley Centre, Watford, Herts WD1 8YA. ☎ (0923) 819630

## LABORATORY REPORT

An Alps front-end with three gangs performs better than the carelessly handled Mitsumi found elsewhere, while the noise figure of 6dB is more realistic than 'better' figures which collapse in the presence of anything slightly strong. But still we are in routine RF territory here, with the standard LA1265/3410 chipset, two narrow ceramic filters for FM frequencies and a single-section filter on the AM waveband.

A half-empty box contains highly exposed unswitched mains wiring. (We know you're warned not to take the lid off, but people do and it costs very little to make it safe for them.) There are single coil detector, pilot and birdie filters, and no signal strength meter.

Careful examination of the FM response curves show some high frequency ripple, probably due to the output pilot filter. Stereo crosstalk is a far from marvellous 29dB, falling to around 12dB when the MPX noise canceller and stereo effect diminisher comes into play.

The AM waveband comes out clean of major midband distortion, but the low frequency performance — determined by the AGC loop characteristics — is less praiseworthy. The response is 6dB lower than the target at 5kHz modulation — but in other implementations elsewhere it can be 15 or even 20dB lower still. Fortunately, there is only so much damage a single-section filter can do to the frequency response.

### FM SECTION: FRONT END

Ref O/P level	-2.2dB
Sensitivity for 50dB (rms) S/N	4.5uV 13dB/uV
S/N at 10uV input (CCIR, peak)	51dB
RF Noise figure	6dB
RF Overload	79dB/uV
Intermodulation	fairly good

### ADJACENT CHANNEL PROTECTION

IHF Selectivity +/-200 kHz	wide +20dB narrow -dB
IHF Selectivity +/-400 kHz	wide +42dB narrow -dB
STEREO CROSSTALK (programme, peak)	Level -29dB

### DETECTOR AND DECODER

Noise Floor (mono, peak)	unweighted -72dB 'A' weighted -75dB CCIR weighted -69dB
Noise Floor (stereo, peak)	unweighted -56dB 'A' weighted -67dB

CCIR weighted	-62dB
Distortion (100% modulation)	0.15% -57dB
Frequency Response rel 50uS, 315Hz	5.0kHz -0.4dB 10.0kHz +0.8dB 12.5kHz -0.3dB 16.0kHz -5.1dB

### AM SECTION: RF PERFORMANCE

Sensitivity	good
Image rejection	fair

### AUDIO PERFORMANCE

Distortion (90% mod) 100H	4.4 % -27
1 kHz	0.75% -43
Frequency Response rel 2x50uS, 315Hz	2.5kHz(-4.09dB) +0.2dB 5.0kHz(-10.72dB) -6.1dB 6.3kHz(-13.75dB) -10.2dB 8.0kHz(-17.20dB) -12.2dB
Noise Floor (saturation, peak)	unweighted -55dB 'A' weighted -55dB CCIR weighted -50dB

# Yamaha TX-350L



Yamaha has been so successful in the AV market recently that one might easily overlook the company's extensive range of hi-fi separates. Included in this range are two budget tuners, the least expensive of which is the £130 TX-350L.

The styling doesn't match with the latest amps quite as well as the newer TX-470 but the 350L remains a very popular alternative nonetheless, helped by its £30 price advantage and the inclusion of long wave alongside medium wave AM. Note also that an in-built sensor responds to commands from current Yamaha stereo and AV surround amplifiers.

The casework follows the full width (435mm) stereotype, but looks more compact than the other tuners in this group as it takes up much less front-to-back depth, which makes stacking deeper components on top difficult.

Presentation takes discretion to a logical conclusion, and the whole package has that touch of class which Yamaha manages so well. The offset display is very legible indeed, with

decent size digits and pleasantly gentle orange illumination. It's also good to have a signal strength meter, even if it is more use in distinguishing between the weak and the unacceptable than the strong and the very strong.

Control surfaces are kept to a minimum, though this necessitates some multi-mode operations. Eight big buttons select any of up to 40 memorised stations from FM, MW and LW wavebands, organised in five (A to E) groups of eight. The other buttons include a large pair for manual tuning, waveband selection and auto/manual-mono selection. The rear phono output sockets are not colour coded, making channel identification tricky during installation.

## Aircheck

The discrepancy between lab measurements and real world aerial performance, though large, is explicable. Actual off-air selectivity was better than the measurements suggest, but only after incoming signals had been reduced by 12dB with a plug-in attenuator. It's likely

## VERDICT

- ▲ Pretty and tastefully discreet packaging along with a realistic price-tag.
- ▼ Sound quality is unexceptional and RF performance indifferent, especially in strong signal strength areas.
- ▶ £129.95

**SOUND QUALITY**  
■ ■ □ □ □

**VALUE FOR MONEY**  
■ ■ □ □ □

that the 400kHz lab selectivity figures were limited by front-end performance problems rather than the shape of the IF curve.

Still, this is no DX long distance performer, being essentially just another two-filter tuner with rudimentary RF componentry. AM had low distortion but a dire frequency response.

## Sound quality

Sound quality is unexceptional, due mainly to a rather shut in top end which also manages to sound untidy. Midband dynamics are reasonable enough, but there's a touch of nasal coloration, and sufficient timesmear to introduce slight thickening and chestiness to voices.

## Conclusion

This is certainly an attractively presented tuner, with neater overall packaging than any of its rivals. Impressive ergonomics and a pretty display with signal strength metering, however, do not make up for the unexceptional sound quality and indifferent RF performance. The latter indicates that aerial attenuation might prove beneficial in high signal strength urban areas.

Yamaha Electronics UK Ltd, Yamaha House, 200 Rickmansworth Road, Watford, Hertfordshire WD1 7JS. ☎ (0923) 233166

## LABORATORY REPORT

The sensitivity figures here look too good to be true — and, of course, they are. Fed by a solitary signal in isolation, noise performance is very impressive, but connected to a jumble of real signals the front-end of Yamaha's budget tuner is a little overwhelmed.

Tuners with worse apparent noise performance but better overload characteristics will handle the real RF spectrum much better than this creation. A 6dB or 12 dB plug-in aerial attenuator might well actually improve the performance of this tuner in city areas close to powerful transmitters.

A generous signal meter (by no means universal in this batch) reads half-scale with just 10V coming in, and mono reception at this level is just fine. The Yamaha TX-350L would perform better than many of its rivals in this price bracket in weak-signal rural areas.

Particularly good programme separation figures were noted from the decoder, but then with no birdie filter it is easier to get good results, though it doesn't always happen. Audio passes through a two-coil pilot and supersonic filter, so no trouble with pilot leakage here.

The standard Sanyo 1266/3401 chips are used on a particularly small board which leaves two-thirds of the (small) box empty.

The AM waveband produced very impressive distortion figures but the two-section IF filter delivers heavy treble attenuation above about 3 kHz.

### FM SECTION: FRONT END

Ref O/P level -1dB

Sensitivity for 50dB (rms) S/N 3.2uV

10dB/uV 10dB/uV

S/N at 10uV input (CCIR, peak) -54dB

RF Noise figure 3dB

RF Overload 74dB/uV

Intermodulation poor

### ADJACENT CHANNEL PROTECTION

IHF Selectivity +/-200 kHz wide -6dB

narrow -dB

IHF Selectivity +/-400 kHz wide +29dB

narrow -dB

STEREO CROSSTALK (programme, peak) Level -40dB

### DETECTOR AND DECODER

Noise Floor (mono, peak) unweighted -71dB

'A' weighted -73dB

CCIR weighted -66dB

Noise Floor (stereo, peak) unweighted -65dB

'A' weighted -68dB

### CCIR weighted

Distortion (100% modulation) -61dB

0.16% -56dB

Frequency Response rel 50uS, 315Hz

5.0kHz -0.2dB

10.0kHz +0.1dB

12.5kHz -1.2dB

16.0kHz -6.3dB

### AM SECTION: RF PERFORMANCE

Sensitivity good

Image rejection fair

### AUDIO PERFORMANCE

Distortion (90% modulation) 100H 1.3%

-3%

1 kHz 0.85%

-4%

Frequency Response rel 2x 50uS, 315 Hz

2.5kHz (-4.09dB) -4.1dB

5.0kHz (-10.72dB) -14.7dB

6.3kHz (-13.75dB) -19.4dB

8.0kHz (-17.20dB) -25.2dB

### Noise Floor (saturation, peak)

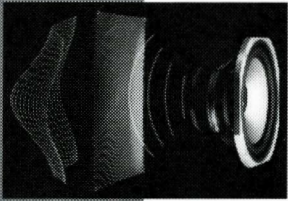
unweighted -54dB

'A' weighted -55dB

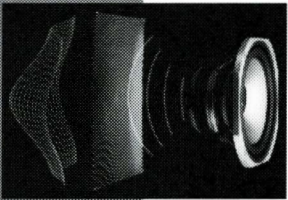
CCIR weighted -50dB



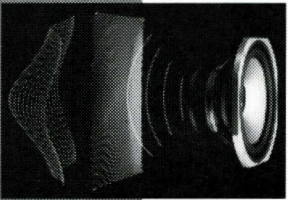
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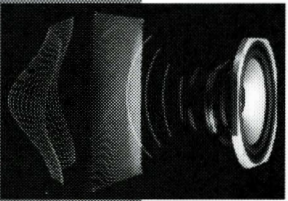
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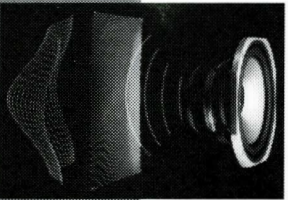
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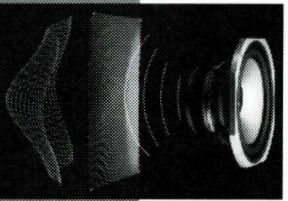
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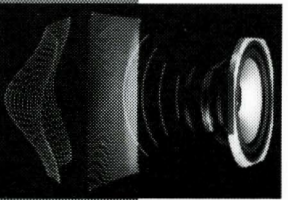
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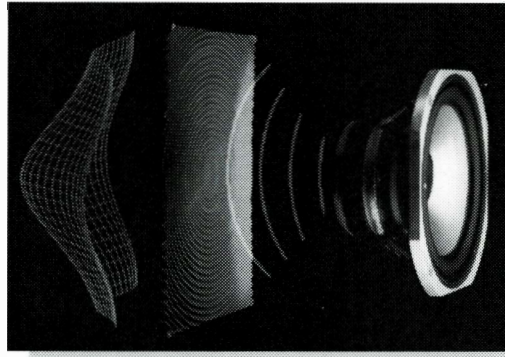
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# Tuners: conclusions, best buys and recommendations

So, is the tuner under £170 the answer to every audiophile-on-a-budget's dreams? More to the point, will it satisfy the high selectivity cravings of the long distance radio enthusiast? Sadly, the answer to both questions must be a resounding no.

True, the budget tuners assembled here could all receive radio transmissions. But they did so with such a lack of style it's difficult to raise any great enthusiasm.

Today's tuners are not that different from five or so years ago, apart from the incorporation of system remote control and, occasionally, timer operation. Add in the effects of inflation and currency shifts and the basic engineering available for £170 looks decidedly sparse.

Five years ago, the Akai AT-52L set an enviable Best Buy standard at £150. Brought out again for comparison, tuned to 100.0MHz and there was *Kiss FM* from 50 miles away, despite a 70dB louder local *Radio One* transmitter only 300kHz below on 99.7MHz. The current batch of tuners could only produced noisy and interference-laden *Kiss* reception.

What is galling is that the extra cost of parts to turn mediocre RF/IF performance into something really worthwhile is not great. A manufacturer can easily buy a full set of four ceramic IF filters for a pound, but the temptation to try and get away with cost cutting, using only two or three filters, seems almost irresistible.

Mediocrity proved the sound quality rule too, the differences between the best and worst amounting to a couple of points on a 10 point scale.

Midband and treble correlations were widespread, and none showed the sort of drive and purpose which has become the hallmark of real, as distinct from consumer, hi-fi.

Both the £140 JVC FX-362 and

£130 Yamaha TX-350L showed potential problems with front



end RF overload. Neither distinguished itself on sound quality either, although the Yamaha certainly passes muster, and also has both price and very attractive presentation on its side.

The £150 Kenwood KT-2050L showed a strange choice of feature priorities and a rather bright balance, but RF performance was just about the best of the bunch.

The £170 Marantz ST-53 proved rather weak on selectivity but, unencumbered by pilot tone suppression, also gave the sweetest sound of the group. Unfortunately, the price-tag precludes it from recommendation.

The £150 Aiwa XT-950 and £120 Teac T-X4030 simply did better than the group average on sound and RF performance, the former model rating a Recommended flag, while the Teac gains a Best Buy by being the least expensive of all.

## Best Buy and Recommended models

### Best Buy

At £120, the **Teac T-X4030** is the least expensive tuner in our test group, but performed near the top when it came to both sound quality and RF capabilities. This is more than compensation for the lack of Long Wave.

### Recommended

The £150 **Aiwa XT-950** simply did better than the group average on sound and RF performance, even though its performance enhancing tweaks might have been better executed.



## Best Buys and Recommendeds

Products that make the grade are awarded *Hi-Fi Choice's* unique Best Buy or Recommended accolades. This sets them apart as being capable of a higher standard of fidelity than average at a particular price.

A product carrying the **Best Buy** swing tag is significantly better than the alternatives in its price band. It is of excellent quality and very good value for money. Watch out for this logo. It is your guarantee of quality.



**Recommended** products are also very good, but not quite in the same league as Best Buys. Despite being runners up, they are definitely worth considering, as they may prove more compatible in some systems.



## Best of the rest

As the current tests amply illustrate, limiting the budget is very restrictive. Only the £120 Denon TU-260L accurately combines performance with low cost. Our test on this model goes back three years, so perhaps a revisit is now overdue, if only because this budget Best Buy has been the undisputed market leader ever since.

Spreading the net a little wider, few can match the £220 Denon TU-580RD's RF performance at

any price, although the sound quality isn't that impressive.

The £160 Rotel RT-930AX proved a competent all round performer with low audible interference, while the £200 Rotel RT-950BX delivered a fast and exciting sound alongside some RF limitations.

Last but by no means least, the £200 Technics ST-G70L presents the refined face of budget tuners, with a civilised presentation which retains plenty of sparkle.



The Denon TU-580RD (above); and the Rotel RT-950BX (below).



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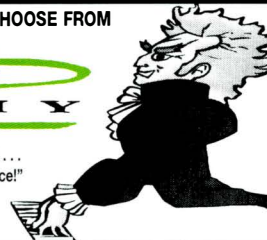
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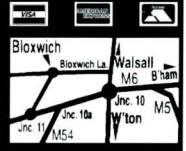
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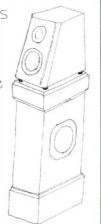
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Order ref	Length	Price
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ZLI4WR/2	2 metre	£32.80
ZLI4WR/3	3 metre	£36.70
ZLI4WR/4	4 metre	£40.60
ZLI4WR/5	5 metre	£44.50

If you require longer lengths, add an additional £3.90 per metre

### AudioQuest Type 4

This corking cable uses four solid OFHC conductors wound in a spiralled Hyperlitz configuration. You can either pair up conductors to form a superior single run of cable or the cable can be sent to you pre-terminated for bi-wiring, enabling you to enjoy all the advantages of this method of connection without the mass of spaghetti that normally threatens to take over the living room. A very cost effective up-grade.

**Order Ref: ZLT43PR - 3 Metre length £57.00**

**Order Ref: ZLT45PR - 5 Metre length £75.00**

### AudioQuest Indigo

The obvious next step up from Type 4, Indigo uses ten solid conductors, again in a Hyperlitz array and finished in a tasteful blue satin jacket. When the five red or black conductors are connected together this gives a 2.6 mm<sup>2</sup> signal area. Not the cheapest cable on the market, but nonetheless



highly recommended for those wanting to pull the very best from their systems.

**Order Ref: ZLI3PR - 3 metre length £75.00**

**Order Ref: ZLI5PR - 5 metre length £105.00**

### AudioQuest Crystal

Crystal uses twelve solid conductors, spiralled together in a Hyperlitz array under a slate blue satin jacket. The cable is rather unusual in that it contains a mix of conductors, six conductors are 0.65 mm<sup>2</sup> PHFC copper and six are 0.52 mm<sup>2</sup> FPC copper. In normal use Crystal is a 3.51 mm<sup>2</sup> cable. The FPC copper acts like a bypass, allowing most of the high frequency benefits of this superior material. The less expensive OFHC copper provides bulk so Crystal can provide a powerful full range sound. Together the OFHC and FPC allow Crystal to have extraordinary performance at a reasonable price. Crystal is also an extremely effective single biwire cable, which is best achieved by using the six OFHC conductors for the bass and the six superb FPC conductors for the treble.

**Order Ref: ZLCY3SBW - 3 metre £144.00**

**Order Ref: ZLCY5SBW - 5 metre £200.00**

## Interconnect cables

Although you could connect your equipment together with a damp piece of string, the chances are the results would be rather disappointing. What is often glossed over is that there are more than one type of interconnect cable on the market and that different cables are needed for different tasks. The first use for interconnects is to enable you to link line level signals between units, for example to wire the analogue output of your CD player to your amplifier, or to use between pre-amp and amplifier. We offer three choices of cable intended for this purpose.

AudioQuest Turquoise, Ruby and

Quartz, so there should be one there to suit your budget.

### AudioQuest Turquoise

Our cheapest interconnect uses four solid OFHC copper conductors in a novel symmetrical Hyperlitz arrangement. Two of these conductors are insulated and together become the positive conductor. The other two are uninsulated and make contact with the 100% coverage shield, together they become the negative conductor.

**Order Ref: ZIUP1 - 1 metre £34.95**  
**Order Ref: ZIUP2 - 2 metre £40.95**

### AudioQuest Ruby

Ruby is one of the most popular cables in the AudioQuest range, and it's easy to see why. A fully balanced cable featuring Hyperlitz construction. Ruby uses four solid FPC copper conductors, all polypropylene insulated. Two together carry the positive signal and two carry the negative.

Excellent value for a high performance cable.  
**Order Ref: ZIRP1 - 1 metre £69.95**

### AudioQuest Quartz

Quartz uses the same Hyperlitz balanced construction as Ruby, but with FPC-6 copper (99% purity). The RCA plug is resistance welded to Quartz in a process which actually commingles the molecules of the cable and plug into an alloy. The plug uses an unusual patented design which eliminates extra internal contacts, ensures a large, self-wiping (cleaning) contact area and provides extraordinary strain-relief. The plug is not difficult to push on, but it does make the best contact.

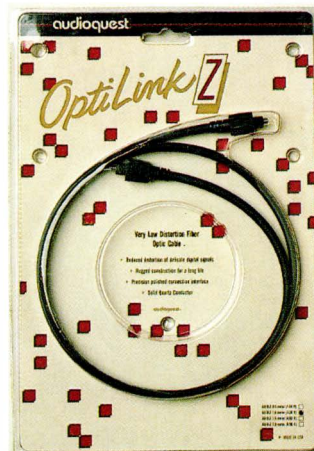
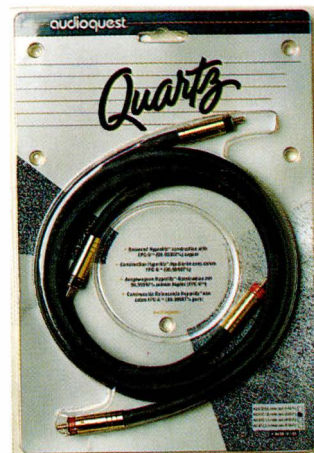
**Order Ref: ZIQP1 - 1 metre £99.95**

## Optical cables

Many CD players and transports feature a fibre optic digital output. This allows you to send the digital signal, in the form of light, to a separate digital-to-analogue converter.

The quality of the fibre optic cable used can make nearly as much difference as your choice of CD player. A poor fibre optic cable can totally destroy the value of a separate D/A converter. OptiLink X and OptiLink Z will make sure you get the performance you paid for. Available in 1 metre lengths.

**AudioQuest OptiLink X™**  
**Order ref: ZOXT1-OptiLink X (1 metre, Toslink) £49.95**



**AudioQuest OptiLink Z™**  
**Order ref: ZOZT1-OptiLink Z (1 metre, Toslink) £99.95**

## Digital cables

The characteristics a cable needs to carry a digital signal are very different from those required of an analogue cable and if you want to get the very best from your system then you need a cable designed to do the job. Video cables, which are designed for high frequency signals in the first place, are ideal for carrying digital signals, and they can also be used to give a boost to your AVV system.

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**Order ref: JE22A/XL (Extra Large)**  
**Price: £15.00**



Z, one of the very few digital interconnects to earn a coveted Best Buy rating in our recent market survey.

**AudioQuest Video X**  
**Order ref: ZIXP1 (1 metre) £29.95**  
**Order ref: ZIXP2 (2 metre) £36.95**  
**Order ref: ZIXP5 (5 metre) £57.95**  
**AudioQuest Video Z**  
**Order ref: ZIZP1 (1 metre length) £49.95**

**If you have any technical queries regarding the cables, please call Alisdair Patrick on 0223 440964.**

### AudioQuest CD Feet

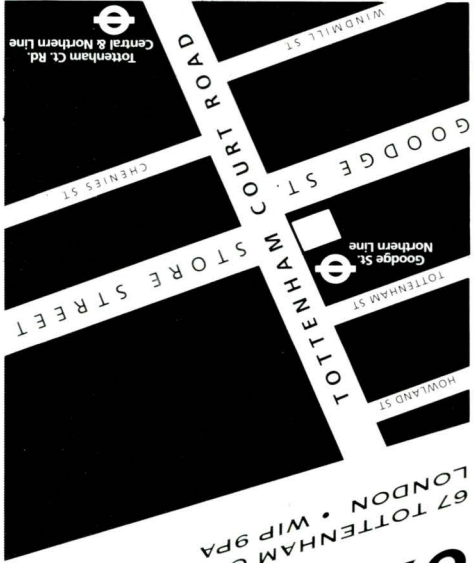
Improve the performance of your CD player or any other vibration sensitive equipment. Sorbothane® CD feet absorb energy, increasing both damping and isolation. Each foot should not support more than 4 pounds (2kg) or about 16 pounds for a set of four.

**Order ref: ZAFCA**  
**Price: £29.95**

### AudioQuest Big Feet

Same as the above only bigger, to support heavier equipment.

**Order ref: ZAFBA**  
**Price: £47.95**



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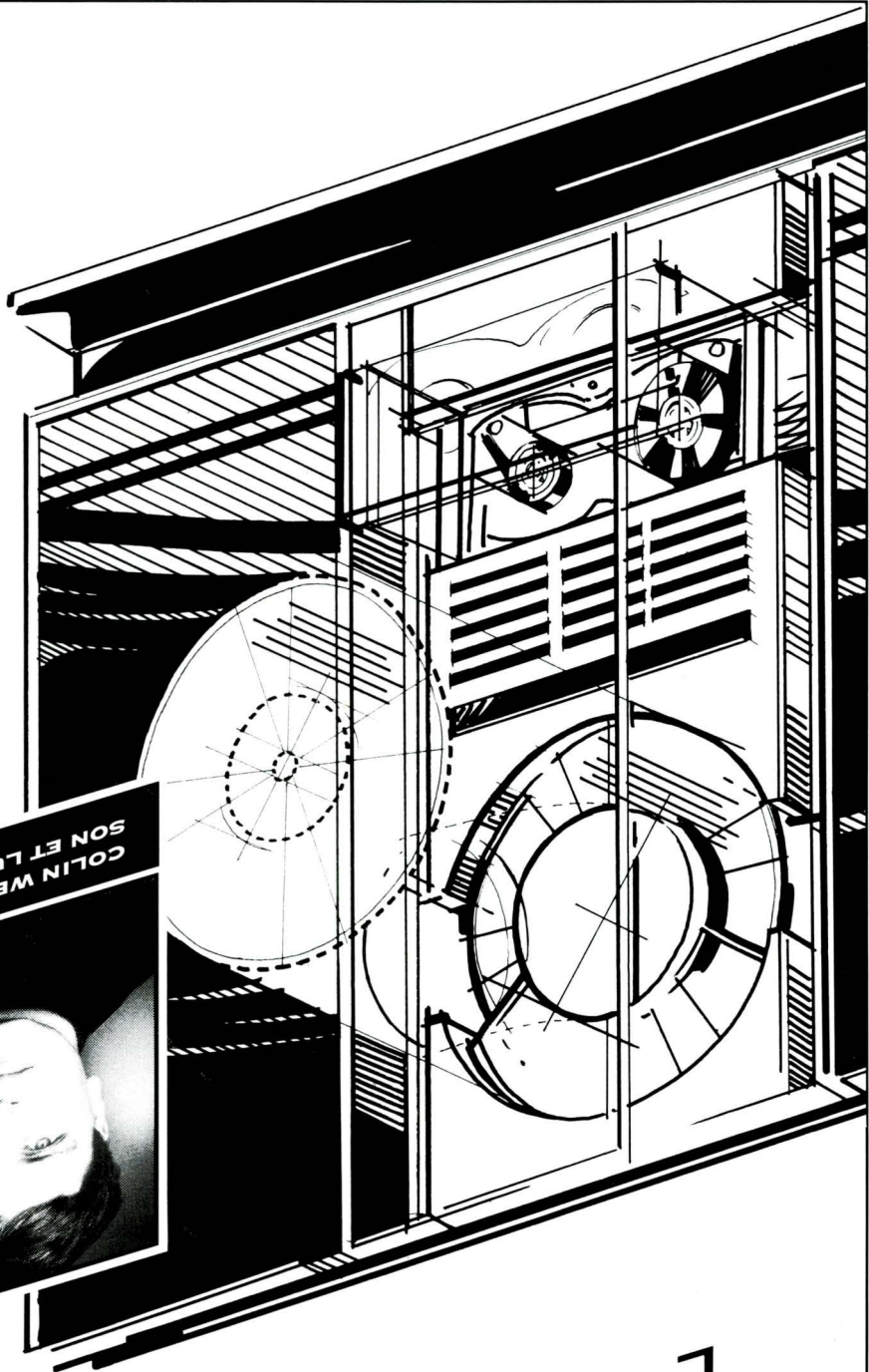
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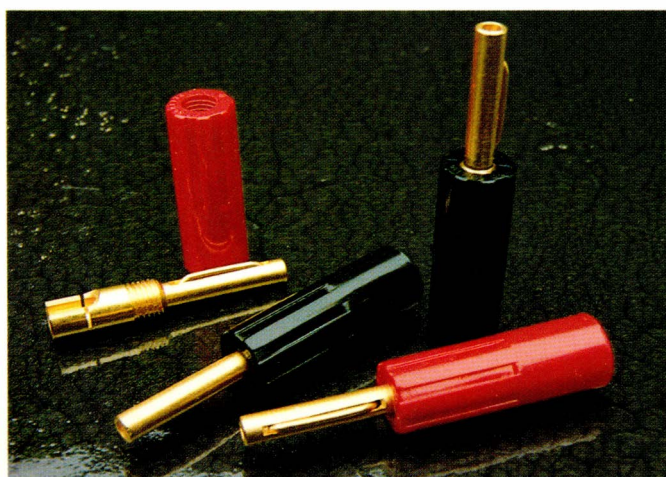
Top quality solderless gold plated banana plugs for use with speaker cables. Simply push the speaker cable into the body of the plug and tighten for a perfect connection. Sold in packs of four.

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Replace broken CD jewel cases and ensure your discs are properly protected.

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STACK SYSTEMS - 6 tested plus Buyer's Guide. 18 pages of products tested and rated.  
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# HI-FI CHOICE



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*Welcome to the new look Hi-Fi Choice Buyer's Guide, the UK's biggest and best guide to choosing hi-fi. Over 2,500 items are listed, with up-to-date prices and specifications, while the unique review based Directory contains our views on over 800 components that have been tested and rated by the Hi-Fi Choice team of experts.*

## Index

**Price Guide** Page 89

Your at-a-glance reference to hi-fi prices, technical specifications and options. Over 2,500 items listed! If it's hot and hi-fi, it's here.

### Product Categories

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The original and the best. Our unique review based guide to over 800 products tested in *Hi-Fi Choice*. We tell you the best hi-fi to buy.

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# BARTLETTS SUGGESTED SYSTEMS

The Bartletts Suggested systems listed below are supplied with the Marantz CD 53, an alternative CD player or Turntable is available, see below for details. All systems are supplied with 8 metres of 79 strand loudspeaker cable, QED 4mm plugs are available at a cost of 1.00 each. Carriage charge for delivery to an address on the UK mainland is £12.00 per order. All items are sent fully insured. Prices correct at time of printing but are subject to change without notice. E&OE.

SPEAKERS	Celestion 1	Mission 760 i Celestion 3 II	Tannoy 603 II Mission 760 ise	Mission 761 i B&W DM 600 i Celestion 5 II Tannoy 605 II	Tannoy 607 II Celestion 7 II Nad 802	Rogers LS 2a2 B&W DM 610 i Mission 780	Mission 762 i Cerwin- Vega VS 8	Rogers LS 4a2 Tannoy 609 II
AMPLIFIERS								
Marantz PM 44 SE	378.95	417.95	433.95	456.95	487.95	503.95	518.95	550.95
Nad 302	355.95	394.95	409.95	433.95	464.95	479.95	495.95	526.95
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Harman Kardon 1200	480.95	524.95	542.95	568.95	604.95	617.95	630.95	674.95
Arcam Alpha 5	436.95	480.95	498.95	524.95	560.95	573.95	586.95	630.95
Technics SUA 600	378.95	417.95	433.95	456.95	487.95	503.95	518.95	550.95
Pioneer A 300 X	401.95	440.95	456.95	479.95	511.95	526.95	542.95	573.95

**Choices.** The following CD players of Turntables can be ordered instead of the Marantz CD 53 in the above systems.

## CD Players

Aiwa XC 300	Deduct	£50.00	Denon DCD 595	Deduct	£20.00	Denon DCD 695	Add	Nil
Denon DCD 890	Add	£70.00	Marantz CD 52 Iise	Add	£100.00	Marantz CD 63	Add	£50.00
Nad 501	Deduct	£20.00	Nad 502	Add	£20.00	Sony CDP 311	Deduct	£30.00
Sony CDP 711	Add	£50.00	Sony CDP 911	Add	£100.00	Yamaha CDX 470	Add	Nil
Yamaha CDX 570	Add	£45.00	Yamaha CDX 670	Add	£90.00			

## Turntables

Dual CS 503-2	Deduct	£20.00	Dual CS 505-4	Add	£30.00	Technics SLBD 22	Deduct	£50.00
Thorens TD 280	Add	Nil						

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Key

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 on page 121 for full test results.

Table with columns: Model, Price, Type, Dolby NR, Dolby HQ Pro, Heads, Size, Special. Section: CASSETTE DECKS. Includes models like Sherwood DS1150, Sony TCX211B, Teac R-9000S, etc.

Table with columns: Model, Price, Dac Type, Outputs Dig, Remote, Size, Special. Section: CD PLAYERS. Includes models like Aiwa DX-M100, Denon DCD-2560, Kenwood DP-2050, etc.

Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory, see page 121

Key

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 on page 121 for full test results.

Table with columns: Model, Price, Dac Type, Outputs Dig, Remote, Size, Special. Section: CD PLAYERS. Includes models like Marantz CD-53, Philips CD930, Pioneer PD-102, etc.

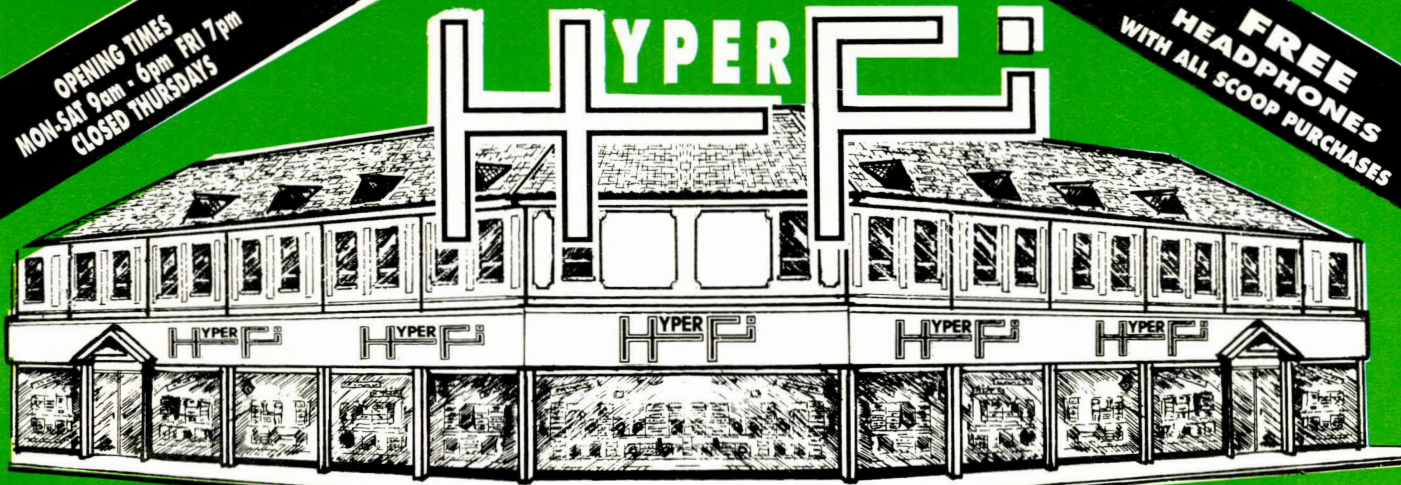
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Our Massive Buying Power gives you the Best Possible Deal. Brand New Factory Sealed units - All Fully Guaranteed.

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We have Friendly Expert Advisers on hand at our 10,000sq. ft. Superstore at Barking. They can offer Advice and Full Demonstrations.

We offer the Fastest Mail Order Department in the Business. Insured - 24 Hour Securicor Delivery.

We Care. We have Fully Trained Service Personnel.

We want your custom . . .

If you have been satisfied with the Service at Hyper-Fi tell others. If you're not happy for any reason don't hesitate to tell us.

JUST WRITE TO: HYPER-FI P.R. DEPT.  
 (RICHSIDE), FREEPOST, RM90, CHIGWELL, IG7 6BR.

## THIS MONTH'S STAR BUYS

**AIWA**



- \* WHAT HI-FI AWARD WINNER
- \* DOLBY B.C. HX PRO
- \* FULL IC LOGIC CONTROL
- \* AMORPHOUS ALLOY HEADS
- \* FINE BIAS ADJUST

**ADF410**

Also ADF810  
 £179.95

SAVE  
 £40

**£79.95**

SAVE  
 £40

**NAKAMICHI**



- \* HIGHLY REVIEWED WHAT HI-FI & HI-FI CHOICE
- \* "SWEET CRISP DETAILED AMPLIFIER"
- \* AUTHORISED U.K. DEALER STOCK
- \* 2 x 40 WATTS 8 OHMS
- \* 2 x 57 WATTS DYNAMIC POWER

**IA3**

SAVE  
 £150

**£199.95**

**NAKAMICHI**



- \* FIVE STAR WHAT HI-FI REVIEW
- \* HIGHLY REVIEWED HI-FI CHOICE
- \* SUPERB QUALITY 2 HEAD MACHINE
- \* OUTSTANDING RECORD QUALITY
- \* AUTHORISED UK DEALER STOCK

**DR3**

Also DR2  
 £469.95

SAVE  
 £110

**£289.95**

## BARGAIN OFFERS

**NAKAMICHI**  
**£100,000**

*Special Purchase*  
 Most at trade price or less, all equipment brand new sealed cartons fully guaranteed direct from B & W NAKAMICHI (UK) LTD

**AIWA**

*Special Purchase Deal*  
 All brand new factory sealed. Most at trade price or less

**PIONEER**  
**£150,000**

*Special Purchase*  
 Most at trade prices or less all equipment brand new sealed cartons fully guaranteed direct from PIONEER (GB) LTD.

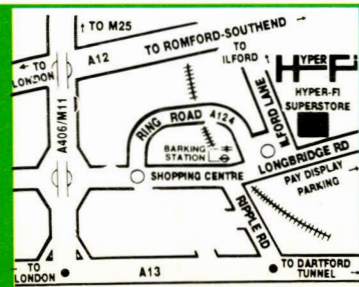
**WE WILL BEAT  
 ANY GENUINE  
 ADVERTISED PRICE  
 BY UP TO £25**

PHONE  
 FOR  
 DETAILS

**67-73 LONGBRIDGE ROAD  
 BARKING, ESSEX.**

**HOTLINE: 081-591 6961**

**NOW ONLY MINUTES AWAY FROM THE NEW M11 (A406) MOTORWAY  
 CLOSE TO BARKING UNDERGROUND/MAINLINE STATION**



**PHILIPS**FB290  
QUALITY  
SPIKED  
SPEAKER  
STANDS£ **19.95** PAIR**HYPER****MONITOR AUDIO  
SPEAKER  
STANDS  
HALF PRICE  
PHONE FOR DETAILS****101-751-1000****AMPLIFIERS****MARANTZ**

- 2 x 40 WATTS RMS
- TWIN TAPE INPUTS
- MOVING MAGNET INPUT
- SPEAKER MATCHING 4-16 OHMS

**PM32**SAVE £60  
**£79.95** SAVE £60**AMPLIFIERS****PIONEER**

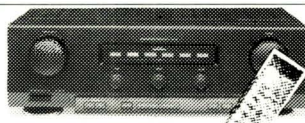
- 2 x 45 WATTS RMS
- HIGHLY REVIEWED RANGE
- INFRA-RED REMOTE
- DIRECT SWITCHING
- 6 INPUT TWIN SPEAKERS

**A351R**SAVE £55  
**£149.95****RECIEVERS****SONY A/V**

- A.V. REMOTE RECIEVER
- DOLBY SURROUND SOUND
- 2 x 60 WATTS FRONT 2 x 10 WATTS REAR
- 6 AUDIO 2 VIDEO INPUTS
- VIDEO OUT COPY FACILITY
- DYNAMIC BASS FEEDBACK SYSTEM

**STRD590**SAVE £55  
**£219.95****PIONEER**

- HIGHLY REVIEWED RANGE
- 2 x 30 WATTS OUTPUT
- 5 INPUTS 2 TAPE DUBBING
- BASS TREBLE TONE CONTROLS
- LOUDNESS SWITCH
- HEADPHONE SOCKET BLACK 420mm

**A102**SAVE £30  
**£99.95** SAVE £30**PHILIPS**

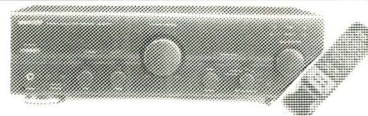
- 2 x 65 WATTS DIN 8 OHMS
- 2 X 240 WATTS MUSIC PONER
- FULL REMOTE CONTROL
- HEAVY DUTY BINDING POSTS
- DIGITAL INPUTS/OUTPUTS

**FA930**Also FA920  
2 x 43W £119.95SAVE £50  
**£149.95****NAD**

- HIGHLY REVIEWED WHAT HI-FI
- INFRA-RED REMOTE CONTROL
- 2 x 40 WATTS RMS
- DIGITAL TUNER AM/FM
- 18 PRESETS, TWIN SPEAKERS

**705**SAVE £80  
**£Censored****NAD**

- EUROPEAN AMP OF THE YEAR
- BEST BUY HI-FI CHOICE
- 2 x 25 WATTS RMS
- HEAVY DUTY BINDING POSTS
- PRE/POWER OUT TERMINALS

**NAD 302**Also NAD 304  
UNPRINTABLESAVE £40  
**£Censored****KENWOOD**

- HIGHLY REVIEWED WHAT HI-FI
- 44 KEY REMOTE CONTROL
- 2 x 60 WATTS 20HZ -20KHZ
- 2 x 140 WATTS DYNAMIC POWER
- PURE SIGNAL GROUND LINE

**KA4040R**SAVE £80  
**£169.95****TUNERS  
PHILIPS**

- QUALITY DIGITAL TUNER
- AM/FM 30 PRESETS
- REMOTE CONTROL OPTION
- REMOTES WITH FA920 AMP
- 435MM WIDE

Also FT930  
£79.95**FT920**HALF PRICE  
**£79.95** HALF PRICE**SONY A/V**

- AUDIO/VISUAL AMPLIFIER
- 2 x 40 WATTS RMS 8 OHMS
- REMOTE CONTROL MOTORISED VOL
- TWIN DRIVE POWER SUPPLY
- HEAVY DUTY BINDING POSTS
- TWIN SPEAKERS, SEARCH DIRECT SWITCH

**TAF319R**SAVE £70  
**£129.95****SONY**

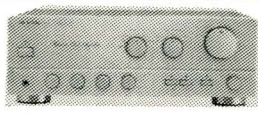
- EXCLUSIVE U.K. AUDIOPHILE DESIGN
- HIGHLY REVIEWED
- 2 x 90 WATTS RMS 8 OHMS
- PURE STRAIGHT PATH DESIGN
- MM + MC CART INPUTS

**TAF540E**SAVE £80  
**£169.95****PIONEER**

- DIGITAL DIRECT DECODER
- 3 BAND FM/MW/LW
- 36 RANDOM PRESETS
- SYSTEM REMOTE
- 3 SPEED SEARCH

**F401L**SAVE £50  
**£129.95****YAMAHA A/V**

- FULL AUDIO/VISUAL FUNCTION
- 90 WATTS PER CHANNEL
- INFRA-RED REMOTE
- 6 INPUTS INC TWO TAPE
- SOURCE DIRECT, LOUDNESS
- TWIN SPEAKER OUTPUTS

**AXV401**SAVE £60  
**£139.95****PIONEER**

- 2x95 WATTS 20HZ - 20KHZ
- 2 x 200 WATTS DYNAMIC POWER
- SUPER LINEAR CIRCUIT
- DIRECT SWITCH 7 INPUTS
- RECORD SELECTOR HIGH GAIN PHONE EQ.

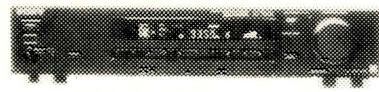
**A676G**Also A676BL  
£249.95SAVE £100  
**£199.95****SONY**

- HIGHLY REVIEWED WHAT HI-FI
- BEST TUNER IN CLASS (£200 WHAT HI-FI)
- RADIO DATA SERVICE RDS SYSTEM
- RADIAL POWER SUPPLY
- DIAL TUNNING SYSTEM
- ALPHA NUMERIC DISPLAY
- 30 RANDOM PRESET 3 WAVEBAND

**STS570RDS**SAVE £80  
**£159.95**

# TUNERS

**SONY**



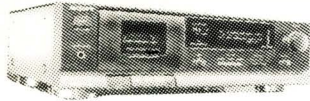
**STS770ES**

- HIGHLY REVIEWED RANGE
- 3 WAVEBAND AM/FM/LW
- WAVE IF. DIRECT DETECTION
- 30 RANDOM PRESETS
- STATE OF THE ART QUALITY
- ALPHA NUMERIC DISPLAY

SAVE **£100** **£199.95** SCOOP

## CASSETTE DECKS

**SONY**

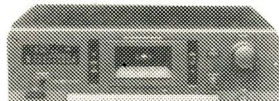


**TCFX170**

- QUALITY CASSETTE DECK
- DOLBY B+C
- FINE BIAS ADJUST
- AUTO TAPE SELECT
- MULTIPLEX FILTER

SAVE **£££** **£69.95** SCOOP

**PHILIPS**

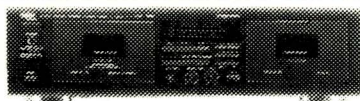


**FC920**

- SUPERB QUALITY CASSETTE DECK
- SINGLE AUTO REVERSE
- DOLBY B.C. & HX PRO
- SOFT TOUCH CONTROLS
- FLOURESENT DISPLAY 435MM WIDE

SAVE **£50** **£129.95**

**YAMAHA**

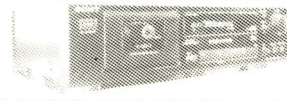


**KXW162**

- QUALITY TWIN CASSETTE
- DOLBY B+C N.R.
- NORMAL OR HIGH SPEED DUBBING
- LEFT & RIGHT RECORD LEVEL
- 2 MOTOR MECHANISM

SAVE **£50** **£129.95**

**SONY**



**TCK490**

- HIGH REVIEWED CASSETTE RANGE
- THREE HEAD 2 MOTOR SYSTEM
- DOLBY B.C. HX PRO
- FINE BIAS CONTROL
- GOLD PLATED H/P SOCK VOL. CONT.
- OPTIONAL REMOTE CONTROL

SAVE **£££** **£169.95**

**PIONEER**



**CTS 510**

- 3 HEAD CASSETTE
- INFRA RED REMOTE
- DOLBY B.C. HX PRO
- ELECTRONIC COUNTER
- H/P OUTPUT MUSIC SEARCH

Also CTS210 £79.95  
CTS410 £149.95

SAVE **£££** **£199.95**

# CASSETTE DECKS

**SONY**

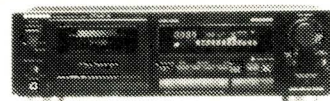


**TCC5**

- FIVE CASSETTE CAROUSEL
- CONTINUOUS RECORD/PLAY FOR 7.5 HOURS
- 3 MOTOR AMORPHOUS HEAD
- REMOTE CONTROL POWER LOADING
- DOLBY B.C. HX PRO. HIGH SPEED DUBBING

SAVE **£100** **£199.95** SCOOP

**PIONEER**



**CT5610**

- HIGHLY REVIEWED CASSETTE
- DUAL CAPSTAN 3 HEAD DECK
- DOLBY BC HX PRO
- CD DECK SYNCRO
- MUSIC SKIP DISPLAY OFF

SAVE **£70** **£229.95**

**AKAI**



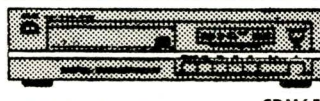
**GX9511**

- RECOMMENDED HI-FI CHOICE
- 3 HEAD SUPER GX (10 YEAR GUARANTEE)
- CLOSED LOOP DUAL CAPSTAN DRIVE
- DOLBY B.C. & HX PRO (SWITCHABLE)
- AZIMUTH & HEIGHT ADJUSTMENT

SAVE **£140** **£299.95**

## COMPACT DISC

**AKAI**



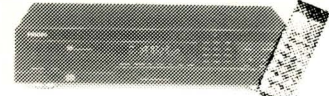
**CDM659**

- QUALITY COMPACT DISC
- 3 BEAM LASER PICK UP
- 20 SELECTION PROGRAM
- REMOTE OPTIONAL
- DIGITAL OPTICAL OUTPUT
- SLIMLINE BLACK 240 VOLT

HALF PRICE **£49.95** SCOOP

# COMPACT DISC

**PHILIPS**



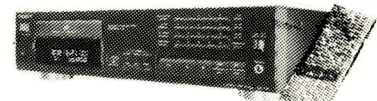
**CD920**

- FAMOUS PHILIPS QUALITY
- HIGHLY REVIEWED WHAT HI-FI
- BITSTREAM D.A.C. DIGITAL OUTPUT
- FULL FUNCTION REMOTE
- DIRECT ACCESS EDIT MODES

ALSO CD162  
MIDI CD  
£69.95

SAVE **£££** **£129.95**

**SONY**

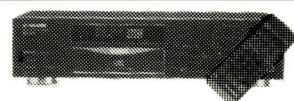


**CDP597**

- GREAT FEATURE REVIEW WHAT HI-FI
- 45 BIT 8 DAC D/A CONVERSION.
- DIGITAL SERVO SYSTEM
- FULL REMOTE/REM VOL
- TIME/MANUAL FADE

SAVE **£50** **£129.95**

**PIONEER**

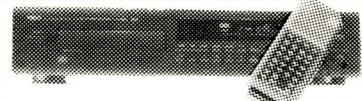


**PD5601**

- HIGHLY REVIEWED RANGE
- STABLE PLATTER MECHANISM
- 1 BIT DIRECT LINEAR CONVERSION
- ANTI RESONANCE DESIGN
- OPTICAL DIGITAL OUTPUT
- H/P MOTOR DRIVE OUTPUT

SAVE **£90** **£149.95**

**YAMAHA**



**CDX 660**

- UK SPECIFIED FOR SOUND QUALITY
- 1 BIT PDM CONVERTOR
- REMOTE CONTROL INCLUDES VOLUME
- RANDOM AND PROGRAM PLAY
- DIGITAL OUTPUT

ALSO CDX 670  
£UNPRINTABLE

SAVE **£80** **£169.95**

**PIONEER**



**PDS 701**

- HIGHLY REVIEWED STABLE PLATTER
- ANTI RESONANCE DESIGN
- 1 BIT DIRECT LINEAR CONVERSION.
- SEMI CENTRE TRAY OPTICAL DIGITAL OUT
- DISPLAY OFF CONT. CD DECK SYNCRO

SAVE **£90** **£179.95**

**SONY**



**CDPM43**

- QUALITY COMPACT DISC
- 1 BIT D/A CONVERTOR
- 45 BIT NOISE SHAPING DIGITAL FILTER
- 20 TRACK MUSIC CALENDER
- PEAK SEARCH

HALF PRICE **£99.95** HALF PRICE

**PHILIPS**



**CDC935**

- BITSTREAM QUALITY MULTIPLAYER
- DIGITAL ANALOGUE OUTPUT
- FTS FAVORITE TRACK SELECTION
- FULL REMOTE CONTROL
- CAROUSEL ALLOWS 3 DISC CHANGE WHILE PLAYING FIFTH
- FULL WIDTH 435MM

SAVE **£££** **£199.95**

# IMPORTANT NOTICE AUTHORISED DEALERS

Not all advertisers in this magazine are authorised dealers for the products they stock. If you check with major manufacturers they will advise you to buy from authorised dealers to ensure full company guarantee back up.

**Hyper-Fi only sells brand new factory sealed stock direct from the manufacturers and is an authorised dealer for all its brands**

TOTAL REVOLUTION 1991-1999 4

## COMPACT DISC

### PIONEER AV

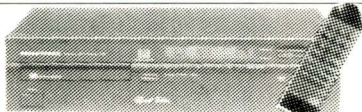


- LASER DISC PLAYER
- ANALOGUE PAL SYSTEM
- 1 BIT D/A CONV.
- PLAYS NORMAL C.D.
- OPTICAL DIGITAL OUTPUT
- SCREEN DISPLAY

CLD2600

HALF PRICE  
**£289.95**

### MARANTZ



- HIGHLY REVIEWED WHAT HI-FI & HI-FI CHOICE
- DIFFERENTIAL MODE BITSTREAM CONVERTOR
- OPTICAL AND CO-AXIAL DIGITAL OUTPUT.
- FTS MOTORIZED VOLUME CONTROL
- REMOTE CONTROL

CD72

SAVE £150  
**£299.95**

### PIONEER



- "RECOMMENDED" HI-FI CHOICE
- 4 STAR SOUND QUALITY WHAT HI-FI
- SUPERB TOP OF THE RANGE BUILD QUALITY.
- STABLE PLATTER MECHANISM
- CENTRE TRAY FULL REMOTE

PD5901

SAVE £200  
**£299.95**

## SPEAKERS

### MORDAUNT SHORT AV

#### M55.10S

- FULLY SHIELDED MAGNETS SUITABLE FOR ALL A/V APPLICATIONS
- HIGHLY REVIEWED HI-FI SPEAKER
- NEW IMPROVED TWEETER
- POSITEC PROTECTION SYSTEM
- SHELF OR FLOOR STAND USE
- 100 WATTS HANDLING
- DELUX BLACK FINISH
- IDEAL CENTRE SPEAKER



SAVE £33  
**£49.95** SAVE £33

### J.P.W.

#### MINIM

- IMPROVED MODEL UP FROM MINI MONITOR
- RECOMMENDED HI-FI CHOICE
- 70 WATTS POWER RATING
- FERRO FLUID DOME TWEETER
- HARD WIRE X/OVERS
- LARGE DIAMETER TERMINALS
- WALNUT FINISH



SAVE £30  
**49.95** SAVE £30

## SPEAKERS

### J.P.W.

#### SONATA

- HIGHLY REVIEWED WHAT HI-FI
- WHAT HI-FI AWARD WINNER
- HI-FI CHOICE BEST BUY
- 70 WATTS HANDLING
- FREQ RANGE 70HZ - 20KHZ
- WALNUT FINISH
- 320 x 230 x 210mm

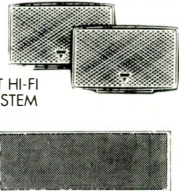


SAVE £30  
**£69.95** SAVE £30

### CELESTION AV

#### THIRD DIMENSION

- HIGHLY REVIEWED WHAT HI-FI
- 3 PIECE SUB WOOFER SYSTEM
- 60 WATTS HANDLING.
- 89 D.B. SENSITIVITY
- DELUX BLACK FINISH



SAVE £90  
**£99.95** SAVE £90

### CELESTION

#### CELESTION 9

- HIGHLY REVIEWED HI-FI CHOICE
- HIGHLY REVIEWED WHAT HI-FI
- 100 WATTS HANDLING
- 3 WAY BASS REFLEX
- SUPERB DARK OAK FINISH



SAVE £70  
**£199.95**

### CELESTION

#### CELESTION 15

- RECOMMENDED HI-FI CHOICE
- HIGHLY REVIEWED WHAT HI-FI
- FLOOR STANDING 2 WAY DESIGN
- TITANIUM DOME TWEETER
- 100 WATTS HANDLING
- SUPERB DARK OAK FINISH



SAVE £90  
**£299.95**

### MORDAUNT SHORT AV

#### M55.50

- HIGHLY REVIEWED SPEAKER
- FLOOR STANDING BASS REFLEX
- 89 DB 1 WATT SENSITIVITY
- TWIN BASS UNITS DOME TWEETER
- ROSEWOOD FINISH



Also  
DELUXE BLACK  
FINISH  
£349.95

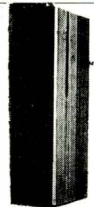
SAVE £70  
**£329.95**

## SPEAKERS

### CELESTION

#### 3000/5000

- SUPERB BUILD QUALITY
- ACOUSTIC RIBBON TECHNOLOGY
- 100 WATT HANDLING BI-WIRABLE
- REAL WOOD VENEER
- BLACK OR WALNUT FINISH

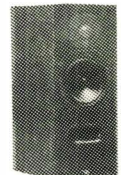


HALF PRICE  
**£399.95**

### MONITOR AUDIO

#### MA800GOLD

- HIGHLY REVIEWED SPEAKER
- UNIQUE FRONT REFLEX
- 120 WATTS HANDLING
- GOLD ANODIZED ALLOY TWEETER DIE CAST BASS
- DELUXE ROSEWOOD



SAVE £300  
**£399.95**

### MONITOR AUDIO

#### MA1800 GOLD

- TOP OF THE RANGE SPEAKER
- 300 WATTS HANDLING
- 35HZ - 30KHZ
- POLYMER BASS/MID GOLD TWEETER
- MAHOGANY FINISH



ALSO BLACK &  
WALNUT FINISH

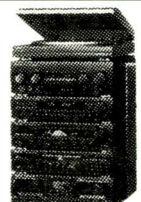
HALF PRICE  
**£799.95**

## SYSTEMS

### KENWOOD

#### M56

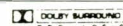
- 2 x 45 WATTS AMPLIFIER
- 3 BAND AM/FM TUNER
- TWIN CASSETTE DOLBY
- QUALITY TURNTABLE
- 20 TRACK COMPACT DISC
- FULL REMOTE CONTROL



SAVE £200  
**£499.95**

### PIONEER

#### N93T



- DOLBY PRO LOGIC
- 2 x 66 WATTS 3 x 15 WATTS (RMS)
- MULTI ROOM COMPATABLE
- VOCAL CANCEL & MIC MIXING
- TWIN AUTO/REV B.C. HX PRO
- 1 BIT SINGLE C.D. PLAYER



ALSO J20 £399.95  
J40 £599.95

SAVE £200  
**£699.95**













MAIL ORDER  
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# KAMLA

Coming Soon:  
Large range of  
NTSC Laserdiscs  
will be available  
from November

## Product List

- AIWA
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- AR
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- ALPHASON
- AUDIO ALCHEMY
- AUDIOSTATIC
- AURA
- B&W
- BEYER
- BOSTON
- CERWIN VEGA
- CONRAD JOHNSON
- GOLDRING
- INFINITY
- JAMO
- JVC
- KEF
- KENWOOD
- KINSHAW
- MIRCROMEGA
- MORDAUNT-SHORT
- MOTH
- NAKAMICHI
- ORIGIN LIVE
- PHILIPS
- PIONEER
- PROCEED
- PROJECT
- ROTEL
- RUARK
- SANSUI
- STAX
- SME
- SYSTEMDEK
- TEAC
- TECHNICS
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- TOWNSHEND

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D700/P700  
NOW ON  
DEMONSTRATION

We also stock a large  
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PHILIPS, SAMSUNG  
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MICROMEGA  
T-DAC  
T-DRIVE  
*the first front loading  
transport from Micromega*

**Townshend Rock III  
Turntable Now On  
Demonstration**  
See review in Oct '93  
issue of Hi-Fi Choice

**New Rotel AV  
Products Now  
In Stock**  
RSP 960 AX Prologic Processor  
RB956 Six Channel Poweramp

## SALE ON NEW AND EX-DEM HI-FI

		RRP	NOW
Audio Alchemy DDE-V1.0	new	420.00	295.00
Motif (Conrad Johnson) MS2001 200 Watt Power Amp	ex-dem	4000.00	2400.00
Motif (Conrad Johnson) MP11 Phono Stage	ex-dem	2250.00	1125.00
Conrad Johnson MF200 200 Watt Power Amp	ex-dem	2400.00	1800.00
Oracle Alexandria inc. SME345 arm	new	1890.00	945.00
Oracle Delphi III	ex-dem	1595.00	950.00
Alphason Sonata inc. HR100/Atlas	ex-dem	1785.00	1160.00
Teac D500 D/A Converter	ex-dem	330.00	265.00
SD Acoustics SD1	ex-dem	1650.00	825.00
SD Acoustics SD4	ex-dem	700.00	455.00
Nakamichi 1000mbi	new	4500.00	2295.00

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071 636 4611









# SEVENOAKS SUPERFI

This advertisement is valid until at least 31st March 1994 (II)

## Display, Demonstrations and After Sales

Unlike many of our competitors, all products (subject to availability) are on display and may be auditioned in dedicated listening rooms in any of our branches. Our helpful staff enjoy and understand the equipment they sell and will be only too happy to assist you through the Hi Fi choices that lie ahead. Our Sevenoaks Superfi service dept is one of the largest and best equipped in the business and will maintain your purchase

## SUGGESTED SYSTEMS

The suggested systems priced below all include the popular NAD 5120 turntable but an alternative turntable or CD player is available at extra cost. Please see "OPTIONS" list below for further details.

SPEAKERS	AMPS	CD Players	Turntables
JPW Sonata (V) Celestion I JPW Minim	Technics SUVZ220K	Aiwa XC300 Denon DCD595 Denon DCD695 Goodmans GCD360 Goodmans GCD650II	Dual CS503.2 Dual CS505.4 Nad 533 Project 0.5 Technics SLBD22K Thorens TD280 IV
Celestion 3 MK II JPW Sonata (W) Mission 760I	Nad 302 Kenwood KA3020 Technics SUVZ320K	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Tannoy 603 MK II Mission 760I SE Nad 800	Harman HK6150 Technics SUA630K Marantz PM44SE	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Tannoy 605 MK II Celestion 5 MK II B&W DM600 Mission 761I Mon Audio 1	Nad 304 Pioneer A300X	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Tannoy 607 MK II Celestion 7 MK II Nad 802	Technics SUA700K	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Rogers LS24-2 B&W DM610 Mon Audio 7	Technics SUVZ220K	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Castle Durham II Heybrook HB173	Nad 302 Kenwood KA3020 Technics SUVZ320K	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
Rogers LS4A-2 Tannoy 609 MK II	Harman HK6150 Technics SUA630K Marantz PM44SE	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
	Nad 304 Pioneer A300X	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK
	Technics SUA700K	Kenwood DP3050 Kenwood DP7050 Marantz CD521II Marantz CD521ISE Marantz CD53	Marantz CD63 NAD 501 NAD 502 Teac CDP3500 Technics SLPG440AK

## FREE

- with suggested Systems
- Cartridge (turntable based systems only)
- Speaker Leads (80 strand cable)

### Options

The following Compact Disc Player or Turntable may be ordered instead of the NAD 5120 in the above systems.

## 0% FINANCE - UP TO 12 MONTHS

We offer 0% finance on a wide range of Hi Fi separates. **Option 1:** 10% deposit followed by 6 equal monthly payments. Example: Cost £600. Deposit £60 plus 6 payments of £90. **Option 2:** 25% deposit followed by 9 equal monthly payments. Example: Cost £600. Deposit £150 plus 9 payments of £50. **Option 3:** 50% deposit followed by 12 equal monthly payments. Example: Cost £840. Deposit £420 plus 12 payments of £35. All options: minimum balance £400. Subject to status. **0% APR.** Personal shoppers only. Written details on request.

## ADDED VALUE AT SEVENOAKS SUPERFI

- You can claim from our range of added value options developed to make our already competitive prices even more attractive.
- 0% Finance on selected Hi Fi separates (but not suggested systems above)
- Claim CD vouchers worth **up to £100** on selected Mini and Micro systems
- Claim **FREE** CDs\* or CD vouchers with selected CD Players
- Claim **FREE** Cassettes with selected Cassette Decks
- Claim **FREE** Stands and Cable with selected Speakers
- Claim **FREE** Audio Technica ATH-610 Headphones worth £40 on Hi Fi separates purchases over £500



Added value offers are not available on "Price Beat" sales. \*CDs must be chosen from our "Free" CD collection.

# Spring Specials at Sevenoaks Superfi.

<p><b>AMPLIFIERS</b> <b>Arcam Alpha 5</b> Great delivery and vivacity Claim 3 year warranty Free <b>£229.95</b></p>	<p><b>AMPLIFIERS</b> <b>Audiolab 8000A</b> Transparency and power, notably neutral Claim 3 year warranty Free <b>£449.95</b></p>	<p><b>AMPLIFIERS</b> <b>Aura VA100</b> Big sound, open shimmering tone Claim 3 year warranty Free <b>£299.95</b></p>	<p><b>AMPLIFIERS</b> <b>Kenwood KA3020</b> Controlled delivery with plenty of dynamic tension was £169.95 <b>£149.95</b></p>	<p><b>AMPLIFIERS</b> <b>Marantz PM44SE</b> Power and subtlety, an absolute bargain Claim £20 CD voucher Free <b>£199.95</b></p>
<p><b>AMPLIFIERS</b> <b>Musical Fidelity A1.3</b> Sweet string tone and warm bass Claim £20 CD voucher Free <b>£329.95</b></p>	<p><b>AMPLIFIERS</b> <b>Technics SUA600K</b> Excellent mid range and bass, good value was £199.95 <b>£169.95</b></p>	<p><b>CASSETTE DECKS</b> <b>Aiwa ADF410</b> Great sound from this award recommendation was £119.95 <b>£99.95</b></p>	<p><b>CASSETTE DECKS</b> <b>Aiwa ADF810</b> Stable and sure footed with plenty of punch was £229.95 <b>£199.95</b></p>	<p><b>CASSETTE DECKS</b> <b>Nakamichi DR3</b> Sound quality with ambience and presence was £399.95 <b>£339.95</b></p>
<p><b>CASSETTE DECKS</b> <b>Sony TCK511S</b> Dolby S-3 head, an absolute steal was £279.95 <b>£229.95</b></p>	<p><b>CASSETTE DECKS</b> <b>Sony TCK611S</b> Excellent mid range and bass, and value for money was £329.95 <b>£259.95</b></p>	<p><b>CASSETTE DECKS</b> <b>Yamaha KX360</b> High performance deck with vibrant sound was £199.95 <b>£149.95</b></p>	<p><b>CD PLAYERS</b> <b>Arcam Alpha 5</b> Exciting presentation, fluid bass and fine treble Claim 3 year warranty Free <b>£449.95</b></p>	<p><b>CD PLAYERS</b> <b>Arcam Delta 70.3</b> Precise, stable stereo imaging was £699.95 <b>£449.95</b></p>
<p><b>CD PLAYERS</b> <b>Aiwa XC300</b> Great presence for the price was £149.95 <b>£119.95</b></p>	<p><b>PRICE PROMISE</b> We always try to ensure our prices are competitive. In the unlikely event of a product being available from an <i>authorised</i> dealer at a lower price - <b>WE WILL BEAT THAT PRICE BY UP TO £20.</b> Values = £110 to £500 = £10. £501 to £1000 = £15. £1001+ = £20.</p>			<p><b>CD PLAYERS</b> <b>Aiwa XC750</b> Placing sonic purity before sonic thrills was £199.95 <b>£149.95</b></p>
<p><b>CD PLAYERS</b> <b>Denon DCD595</b> Punchy, dynamic and larger than life sound quality Claim 3 year warranty Free <b>£179.95</b></p>	<p><b>CD PLAYERS</b> <b>Marantz CD52II</b> Probably the best budget player on the market was £229.95 <b>£199.95</b></p>	<p><b>CD PLAYERS</b> <b>Marantz CD52IISE</b> The sound simply bubbles with energy and vitality Claim £30 CD voucher Free <b>£299.95</b></p>	<p><b>CD PLAYERS</b> <b>Marantz CD63</b> 5 star stormer from Marantz Claim £10 CD voucher Free <b>£249.95</b></p>	<p><b>CD PLAYERS</b> <b>NAD 502</b> Sensibly equipped accommodating player was £219.95 <b>£189.95</b></p>
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<p><b>TUNERS</b> <b>Sony STS311</b> User friendly design, clear and involving sound was £199.95 <b>£179.95</b></p>	<p><b>TURNTABLES</b> <b>NAD 5120 inc cart</b> Seriously good sound at a super low price was £119.95 <b>£89.95</b></p>	<p><b>TURNTABLES</b> <b>Project 0.5 inc cart</b> Hallmarks of audiophile design at a budget price old price held <b>£129.95</b></p>	<p><b>TURNTABLES</b> <b>Project 6 inc cart</b> A tweakers delight and best turntable title holder old price held <b>£399.95</b></p>	<p><b>TURNTABLES</b> <b>Technics SL1210II</b> The professional DJs turntable was £399.95 <b>£339.95</b></p>
<p><b>SPEAKERS</b> <b>JPW Minim</b> Nicely finished with pleasantly detailed presentation was £79.95 <b>£59.95</b></p>	<p><b>SPEAKERS</b> <b>Mission 751</b> Big, fast bass plus open midband and treble free stands &amp; cable <b>£299.95</b></p>	<p><b>SPEAKERS</b> <b>Mission 760i SE</b> Enjoyable 3D music with hefty bass free stands &amp; cable <b>£149.95</b></p>	<p><b>SPEAKERS</b> <b>TDL NFM</b> Small but powerful, superb speakers old price held <b>£99.95</b></p>	<p><b>MINI/MICRO SYSTEMS</b> At least 10% and up to 25% off all mini/micro systems in stock. excluding Denon <b>Min 10% off</b></p>

**Sevenoaks Superfi - There's no better place to buy Hi Fi.**

THIS ADVERTISEMENT IS VALID TO AT LEAST 31ST MARCH 1994 (II).

ADDED VALUE OFFERS ARE NOT AVAILABLE ON PRICE BEAT SALES. PRICE BEAT CONDITIONS ON LISTINGS PAGE.



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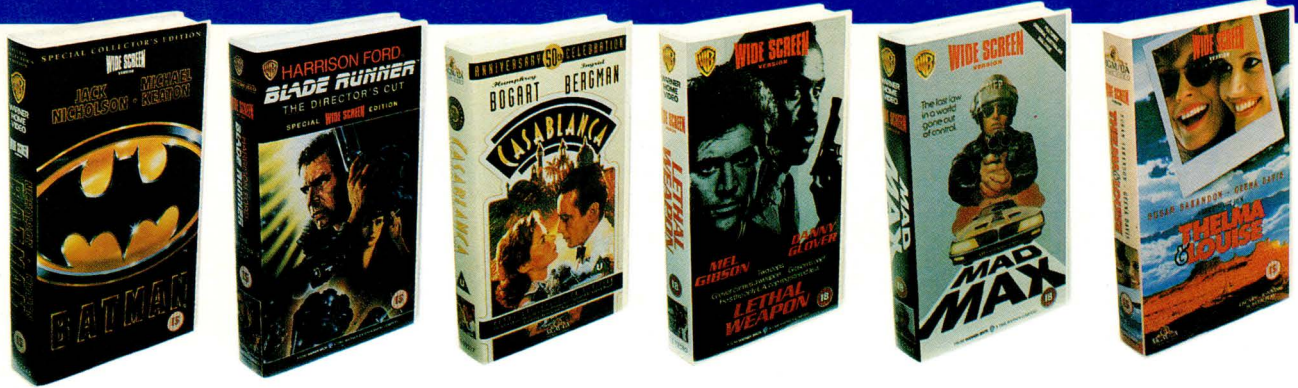
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PRICES VALID UNTIL 31ST MARCH 1994 (1/1)





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## AMPLIFIERS

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SUVZ 320 NEW, 40 watts per ch.  
SU A800K NEW, 40 watts per ch. MOS, Class AA  
SU A700K NEW, 45 watts per ch. MOS. Class AA.  
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**KENWOOD**

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KA 3050R NEW, 45 watts per ch. Remote  
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KA 5020 80 watts per ch.  
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KA 7050R 100 watts per ch. Remote. NEW  
KAV 8500 HOME CINEMA "What Hi-Fi?" Award Winner  
**SONY**  
TAF 211B 30 watts per ch. NEW  
TAF 242B 60 watts per ch. NEW  
TAF 442E 80 watts per ch. UK sound. NEW  
TAF 542E 90 watts per ch. UK sound. NEW  
TAAV 570B Dolby Pro-logic Home Cinema Amp. NEW

## CD PLAYERS

### TECHNICS

SLXP 150, SLXP 330, SLXP 440, SLXP 550,  
SLXPS 570, Portables  
SLPG 340A Budget MASH Player  
SLPG 440K NEW, Remote MASH Player  
SLPG 740K NEW, MASH digital servo  
SLPG 840K NEW, advanced MASH  
**KENWOOD**

DP 2050 NEW model with CCRS  
DP 3050 NEW, 1 bit model  
DP 5050 NEW, 1 bit model  
DP 7050 NEW, 1 BIT Model  
DPM 6650 NEW, multi play model  
**SONY**  
CDPM 201 Midi size. NEW  
CDPM 301 Midi size, remote control. NEW  
CDPC 325M Midi size, 5 disc multi-player  
DD220 + D321  
CDP 411 Full size, remote control. NEW  
CDP 711E Full size, UK Sound. NEW  
CDP 911E Full size, UK Sound. NEW  
CDPX 303 ES Full size. UK Sound. NEW ES  
CDPC 335 Full size, 5 disc multi-player. NEW  
D33 AN, D121, D122 CK, D225 CR, D321 portables

## CASSETTE DECKS

### TECHNICS

RSBX 404K NEW Dolby B/C + HX Pro  
RSBX 646K — NEW, 3 Head Deck with HX-PRO

RSBX 747K NEW, 3 Head Deck with HX-PRO  
Class AA  
RSTR 232 NEW, A.R. twin deck  
RSTR 333 NEW, A.R. twin deck with Bias adjustment  
RSTR 515K NEW, twin deck with HX Pro  
**KENWOOD**  
KX 3050 Dolby B/C, power loading  
KX 5050 Dolby B/C, 3 motor, power loading  
KX 7030 Dolby B/C, HX Pro, 3 head, 3 motor  
KXW 4050 NEW, twin deck, Dolby B + C  
KXW 6050 NEW, twin deck — Double record  
KXW 8050 NEW, twin deck with HX-Pro

### SONY

Single decks  
TCFX 211B Dolby B and C, NEW  
TCK 311B With auto calibration. NEW  
TCK 411B 3 head deck, auto monitor, NEW  
TCK 511S 3 head deck with Dolby S. NEW  
TCK 611S 3 head/3 motor deck with Dolby S. NEW  
Double decks  
TCW 435B Dolby B+C + Hx-Pro. NEW  
TCWR 535B with record-reverse. NEW  
TCWR 635S With Dolby S. NEW

## SPEAKERS

### SONY

SS 85E UK design  
SS 125E UK design  
SAW-90 — Sub Woofer  
**WHARFEDALE**  
Diamond 5 — NEW  
NEW MODUS VIVANDI SURROUND SPEAKERS NOW IN STOCK  
\*CRS-3, CRS-5, CRS-7, CRS-9 — New Range  
\*2130 CS — Centre Speaker

### MORDAUNT-SHORT

New series MS-10, MS-20, MS-30, MS-40, MS-50 now in stock  
CS-1 + SW1 — Home Entertainment Series in stock in dialogue, stereo and Pro-logic packs  
**CANON**  
S-30 + S-50  
VT-100 Corner units  
\*VS100 - Sub bass corner units  
**TANNOY**  
603 Mk II 120 watts power handling  
605 Mk II 150 watts power handling  
607 Mk II 175 watts power handling  
609 Mk II 200 watts power handling  
611 Mk II 250 watts power handling  
613 Mk II 250 watts power handling  
615 Mk II 300 watts power handling

## HI-FI SYSTEMS

**TECHNICS** All systems inc speakers and CD

CDX 520E 60 watts per ch. inc equaliser  
CDX 320 50 watts per ch.  
CDX 120 40 watts per ch.  
SSCH 404 NEW Budget Minisystem  
SCCH 550 NEW, Budget Minisystem  
SCCH 650 NEW, 50 watts Minisystem  
SCCH 655, MULTI-PLAY Minisystem  
SCCH 750 NEW, 50 watts system with D.S.P.  
SCCH 950 NEW, Pro-logic mini system  
SHE 51 Equaliser for CDX 120 & CDX 320 systems  
**KENWOOD** All systems with CD & speakers & remote control  
M27 CDS — Now at special unbeatable price  
M47 G — NEW 45 watts per ch.  
M56 PX, 45 watts per ch.  
M57 MG — NEW 45 watts per ch., Multiplay system  
M76 G, 60 watts per ch., inc. equaliser

M77 MG NEW 80 watts per ch., Multiplay system  
M97 G NEW 85 watts per ch. Pro-logic system with multiplay CD option  
**NEW KENWOOD** mini systems all with multi-play CD option  
UD301/351 M, 25 watts per ch.  
UD 501/551 M 32 watts per ch.  
UD 701/751 M 32 watts per ch., — Dolby surround  
UD 901/951 M 42 watts per ch., — Dolby Pro-logic  
MS-A7 NEW Micro system

### EXTRAS AVAILABLE

P 100 record deck for mini-hi-fi systems  
CS-6 Centre speaker  
CM 7ES Rear surround speakers, 70 watts  
CM 5ES Rear surround speakers, 40 watts  
SW 900 Super woofer for midi systems  
SW 700 Super woofer for mini systems  
OMNI 7 Top Speaker  
**SONY** All systems inc speakers & remote control  
NEW systems are now in stock  
Compact 109CD 25 watts per ch.  
Compact 159CD 25 watts per ch., Multiplay  
Compact 209CD 30 watts per ch.  
Compact 259CD 30 watts per ch., Multiplay  
Compact 359CD 50 watts per ch., Multiplay  
Compact 559CD Separate components, Multiplay  
Compact 759CD Dolby Pro-logic

**SONY MINI HI-FI** inc speakers & remote control & CD

MHC 510CD, NEW, 25 watts per ch.  
MHC — C 50 CD NEW MULTIPLAY SYSTEM  
MHC 710CD, NEW, 40 watts per ch.  
MHC — C 70 CD NEW MULTIPLAY SYSTEM  
MHC 2800CD, NEW, 40 watts per ch.  
MHC 3800CD, NEW, 50 watts per ch, with D.S.P.

### MINI-DISC

MZ1 + MZ2 Portables in stock  
MDS 101 For Mini Systems  
**J.V.C. NEW SYSTEMS**  
UX-T1 MICRO SYSTEM with remote  
UX-A4 MICRO SYSTEM with remote  
ADAGIO S2 MINI SYSTEM 2 way speakers  
ADAGIO S3 MINI SYSTEM 3 way speakers  
ADAGIO S6 MINI SYSTEM 45 watts per ch.  
ADAGIO S7 MINI SYSTEM 50 watts per ch.  
ADAGIO S9 MINI SYSTEM Dolby Pro-Logic

## DAT RECORDERS

### SONY

TC DD7, NEW, Budget portable  
DTC 690 NEW, Full size deck

## TUNERS

### TECHNICS

ST 610 24 Presets  
STG 70 Twin Tuner  
ST GT550K with RDS  
ST GT650K with RDS

### KENWOOD

KT 1050 NEW model  
KT 2030 With Timer  
KT 2050 NEW model  
KT 3050 NEW model with R.D.S.  
KT 6050 Remote compatible

STS 211B NEW, with 30 presets  
STS 311B NEW, with R.D.S. — EON  
STS 505ES with R.D.S.

## RECEIVERS

### TECHNICS

SAGX 130K 60 watts, 30 presets  
SAGX 550K — NEW Dolby Pro-logic  
SAGX 230K 80 watts VCR input  
SAGX 350K — NEW Pro-logic

### KENWOOD

KR-A4050 WITH R.D.S.  
KRV 6050 NEW model with Dolby Pro-logic and R.D.S.  
KRV 7050 NEW model with Dolby Pro-logic R.D.S. + D.S.P.

### SONY

STRD 311B — New  
STRD 511B New Pro-logic model  
STRD 611B - New Pro-logic model

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# Key

Key to turntables, arms and cartridges  
Price - typical retail, to nearest pound.  
Speeds - 33, 45 and/or 78 revolutions per minute.  
S/A/M - 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 - MM - moving magnet (output typically 1mV/cm/sec), MC - moving coil (output typically 0.1mV/cm/sec).

Products highlighted in red have been tested in **Hi-Fi Choice**. Please refer to The Directory on page 121 for full test results.

Model	Price	Speeds	S/A/M	Size	Special
<b>CARTRIDGES</b>					
vdH Grasshopper III SLN	2300	-	-	-	MC, low output, neodymium magnet
van den Hul MC-10	775	-	-	-	MC, silver coils
van den Hul MC-ONE	975	-	-	-	Selected version of MC-10
van den Hul MC-ONE/Hi	1100	-	-	-	High output version of MC-10
van den Hul MC-Two	1300	-	-	-	As MC-ONE/Hi, higher output
van den Hul MM-1	275	-	-	-	MM cartridge
van den Hul MM-2	325	-	-	-	MM cartridge

Model	Price	Speeds	S/A/M	Size	Special
<b>ARMS</b>					
Air Tangent 10B	8000	-	-	-	Air-bearing
Air Tangent Ref. Signature	10000	-	-	-	Remote version of above
Alphason HR100S	490	-	-	-	Superior quality bearing
Alphason HR100S MCS	550	-	-	-	vdH silver, top bearings
Alphason Xenon	286	-	-	-	1-piece titanium armtube
Alphason Xenon MCS	370	-	-	-	vdH silver wiring
Audiomeca SL5	1999	-	-	-	Parallel tracking
Decca LI Arm	49	-	-	-	Damped unipivot
Decca LIR Arm	99	-	-	-	Rewired version of LI
DNM Yota	700	-	-	-	Solid core wired
Graham Tonearm	2550	-	-	-	SME base
Dynavector 507	1400	-	-	-	Biaxial design
Helius Cyalene 2	1395	-	-	-	Silver wired, pivoted
Kuzma Stogi	600	-	-	-	Effective mass 1.3gm
Kuzma Stogi Ref	1000	-	-	-	Effective mass 12.5gm
Linn Ekos	1297	-	-	-	Proprietary armbase
Manticore Magician	650	-	-	-	9 inch armtube, polished finish
Manticore Magician	720	-	-	-	12 inch armtube, polished finish
Manticore Musician	320	-	-	-	
Moth Arm	95	-	-	-	Rebadged Rega RB250
Moth Mk III	146	-	-	-	Rebadged Rega RB300
N'ham Allen Arm	1100	-	-	-	Graphite tube, unipivot
N'ham Monitor Arm	750	-	-	-	Optional silver wiring, unipivot
N'ham Space Arm	350	-	-	-	Optional silver wiring, unipivot
Naim Audio ARO	794	-	-	-	Unipivot
Rega RB250	95	-	-	-	Scaled down RB300
Rega RB300	139	-	-	-	Pivoted arm
Roksan Artemiz	690	-	-	-	Flagship arm
Roksan Tabriz Zi	330	-	-	-	'Intelligent' counterweight
SME 3009 Ser II	255	-	-	-	Fixed headshell, low mass
SME 3009/S2 Ser II	279	-	-	-	Detachable headshell, medium mass
SME Series 300/309	569	-	-	-	Low arm mass - 9.5gm
SME Series 300/310	582	-	-	-	Arm mass 9.7gm
SME Series 300/312	661	-	-	-	Arm mass 12.0gm
SME Series II 3009-R	424	-	-	-	Detachable headshell, 9 inch
SME Series II 3010-R	434	-	-	-	Detach headshell, 10 inch
SME Series II 3012-R	467	-	-	-	Detachable headshell, 12 inch
SME Series III	320	-	-	-	Ultra-low arm mass 5.0gm
SME Series IIIS	231	-	-	-	Ultra-low arm mass 5.0gm
SME Series IV	828	-	-	-	Manganese tube, fixed headshell
SME Series V	1233	-	-	-	Flagship model
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	-	-	-	As above, vdH wired

**The information contained in the Hi-Fi Choice Buyer's Guide is supplied either by manufacturers or by distributors. Each month we contact all companies to ensure that the data is as accurate and up-to-date as possible. However, prices and specifications are subject to change due to circumstances beyond our control. Please let us know if you spot any omissions or errors in the Buyer's Guide.**

Listings marked in red (as shown below) are covered in the **Hi-Fi Choice** Directory, see page 121.

SME Series IV	828	-	-	-	Manganese tube, fixed h'shell
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AUDIO RESEARCH LS5 - earth shattering!  
DENON - new agency  
KRELL DSP CD PLAYER and STUDIO DAC - give them a go!  
KRELL KSAA50S - stunning sound and value for money!  
THETA COBALT 307 - stunning value for money  
THETA BASIC CD TRANSPORT - excellent value  
ORELLE DIGITAL PRODUCTS - just in!  
MARANTZ CD 10 - the latest MARANTZ heavyweight  
TEAC P700/D700 2 BOX COMBO - brill!  
MICHELL GYRODECK - try the latest power supply  
AUDIO RESEARCH LS2B & LS3 PREAMPS & V70 POWER AMP  
COPLAND CTA 401  
SONUS FABER - the complete range; we love them all!  
MARTIN LOGAN AERIUS - stunning looks and sound  
REL STADIUM SUBWOOFERS  
VAN DEN HUL CABLES - including The First, Second and Revelation

## EX DEM & P/EX BARGAINS

WADIA 6 EX DEMO £2995  
KRELL CD DSP £3495  
KRELL STUDIO DAC £3495  
SONUS FABER EXTREMAS £4995  
THETA DS PRO PRIME DAC £995  
NEAT PETITE SPEAKERS £395  
MICROMEGA TRIO COMPLETE CD COMBO £2495  
AUDIO RESEARCH V70 - ex demo £3495  
AUDIO RESEARCH LS1 PREAMP £795  
SONUS FABER MINUETTO £795  
ORELLE CD160 £550  
ACOUSTIC ENERGY AE1 £550  
KRELL MD 1 CD TRANSPORT £1995  
AUDIO RESEARCH DAC 1-20 £1995  
MAGNEPLANAR MG3 ~~£995~~ NOW £500  
REVOX EVOLUTION SYSTEM ~~£1495~~ NOW £1295  
WADIA WT 2000 TRANSPORT £2995  
APOGEE DUETTA SIGNATURES £1995

Please ask for details or our current list

Agencies include: Accuphase, Acoustic Energy, Air Tangent, Apogee, Audio Alchemy, Audio Research, Audio Technica, Basis, B&W, Castle, Copland, Denon, Denon Cartridges, DPA, Duai, Goldring, Harmonix, Heybrook, JPW, Kimber, Koestu, Krell, Lyra, Magneplanar, Magnum, Mandrake, Marantz, Martin Logan, Michell, Micromega, Musical Fidelity, NAD, Nakamichi, Onix, Orelle, Ortofon, Pioneer, Proceed, PS Audio, QED, REL Subwoofers, Revox, Roksan, Rotel, Ruark, SD Acoustics, Seismic Sink, Sennheiser, Sequence, Sequerra, Slate Audio, SME, Sonus Faber, Spender, Stax, Target, TDL, Teac, Theta, Thorens, Van den Hul, Wadia, Wharfedale.

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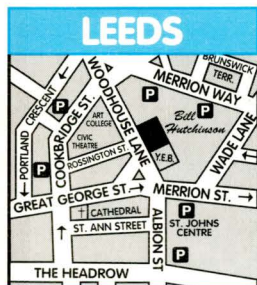


- MARANTZ CD52 MKT15E - CD PLAYER - AWARD WINNER '93 ✓
- MARANTZ PM44SE - AMPLIFIER - AWARD WINNER '93 ✓
- MISSION 751 - SPEAKERS - AWARD WINNER '93 ✓
- SONY TCK-611S - CASSETTE DECK - AWARD WINNER '93 ✓
- SONY STS 311 - TUNER - AWARD WINNER '93 ✓
- AIWA NSX-360 - MINI SYSTEM - AWARD WINNER '93 ✓
- TECHNICS SC-CH950 - PRO-LOGIC SYSTEM - AWARD WINNER '93 ✓

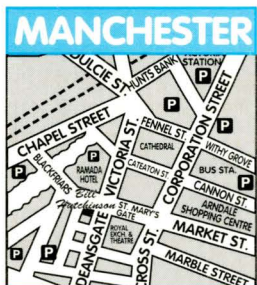
## PRICE PLEDGE

Should you find any local dealer offering a better price for goods currently in stock at Bill Hutchinson and the alternative quoting retailer, we will better that deal.

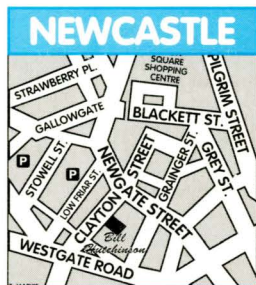
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The original and best review based hi-fi guide

# The Directory



This is the legendary Directory, the second part of the new look 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 87.

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, although 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 standard of fidelity as a similarly rated turntable or CD player.

## 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. But, due to the variety in tonal balance that exists in much audio equipment, and differences in taste, system building is unfortunately not that simple. These ratings make a useful guideline for shortlisting components, but only experiencing the actual combination will tell you whether it works for you.

## 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.

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 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 contains a reference to the issue of *Hi-Fi Choice* which featured the complete review.

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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. At the upper end of the specialist market, valve amplifiers provide a popular alternative to the transistor types amongst enthusiasts.

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 best sound quality. The latter range from models with just basic tone controls and tape recorder switching, to those with elaborate facilities such as graphic equalisers, remote control (including volume), surround sound options etc. 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 reviewed, 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.

## Amplifiers

Product	Price	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated	Preamp	Power amp	Remote control	Headphone socket	Issue No.
Adcom GFP-555II/GFA-535II	850	<b>A+</b> Technically proficient pre/power saddled with a slightly hard and unsympathetic sound.	94	6								124
▲ Akai AM-47	230	<b>G+</b> Plenty of widgets and an unexpectedly sharp, open and detailed sound. Looks ghastly but sounds strain free.	104	4								104
Akai AM-95	630	<b>A-</b> A revamped version of the older AM-93 with newer onboard bitstream DACs. Its sound is just too eager, however	110	6								109
Albary AP4/S508	850	<b>A-</b> A disappointing sound from a pre/power amp that's hamstrung by a variety of technical oversights. Albary has done better.	46	4								116
▲ Albary PP1	430	<b>G+</b> Available with or without various MM/MC options, the 'basic' PP1 has an attractively warm, earthy sound.	48	4								104
Alchemist Kraken	310	<b>A</b> 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	<b>G</b> A quirky Class A number with an equally warm and colourful sound. Hardly accurate but entertaining nonetheless.	49	4								124
AMC CVT3030	529	<b>A</b> 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 6	300	<b>VG</b> 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	<b>VG</b> Now in mkII guise this established combination has matured into a very articulate, powerful if dry-sounding amplifier.	109	4								124
▲ Arcam Delta 290	450	<b>VG</b> 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	1156	<b>VG</b> Switchable triode/ultralinear output stage. In triode mode these are 15 of the sweetest watts around. Surprisingly gutsy	15/25									109
Audio Innovations Series 200	850	<b>G</b> 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	<b>G+</b> 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	699	<b>G+</b> Warm, cuddly and immensely musical kit amp that almost transcends 'hi-fi' with its sheer listenability	24	5								126
▲ Audio Innovations Series 700	999	<b>G+</b> 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	<b>VG</b> 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	<b>E</b> 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	<b>G+</b> It'll successfully tackle the most difficult of speakers and still provide a very warm, rich and euphonic sound.	46									116
▲ Audiolab 8000A	450	<b>VG</b> Recent updates have maintained its competitiveness with a thoroughly refined, consistent and very disciplined sound.	80	5								129
Audiolab 8000C/8000P	1100	<b>G</b> Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7								97
▲ Aura VA-100 Evolution	300	<b>G+</b> Might overheat when driving insensitive, low-impedance speakers but was applauded for its sense of scale and drama via CD	81	5								109
▲ Aura VA-50	250	<b>VG</b> Superficially similar to the cheaper VA-40 but with much more of the old MA-80's magic! Great sound from a slimline package	65	5								97
▲ Beard Audio CA35/P35mkII	2390	<b>VG</b> 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	<b>G+</b> A versatile valve preamp, the bass sounded lively if a touch softened, while the treble was detailed but lacked a little sparkle	4	4								50
Beard M70	1995	<b>G+</b> A substantial British monoblok power amplifier, but not a great deal more impressive than the P35	70									50
▲ Concordant Excelsior	1140	<b>E</b> Styling might not inspire confidence, but sonically this preamp is tremendously vivid and detailed. Real high-end performance	3									77
▲ Conrad-Johnson PV-10	1250	<b>E</b> Fabulous preamplifier. Beautiful imaging, superb detail, plenty of gain on the phono stage; classy build quality too.	4									78
▲ Conrad-Johnson Premier 7	11000	<b>E</b> The 'Seven' is designed without compromise, and is clearly one of the finest (valve) preamplifiers money can buy.	4									Col
▲ Cyclone Catalyst	1995	<b>VG</b> Exceptionally load tolerant and very refined in delivery. Extra options available in future	74									80
▲ Denon PMA-250III	160	<b>A-</b> Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3								121
▲▲ Denon PMA-450	250	<b>G+</b> 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	<b>E</b> The very dramatic but exceptionally detailed and transparent sound of this combination belies its modest power rating.	48	5								124
▲ EAR 834	1,300	<b>G+</b> Electrifying, pin you to your seat sound that puts the raw into raw power and brings electric guitars to life, but can be a bit wearing	44	6								126
▲ EAR 802/509mkII	4200	<b>VG</b> 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	<b>G+</b> A fresh start for Mike Creek has resulted in the Sequel, a minimalista amp with a very refined but mildly restrained sound	47	4								109
Exposure XX	625	<b>A</b> 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	<b>G+</b> 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 HK6150	200	<b>G+</b> Based on the older HK6100 but with a more solid, punchy and expressive performance that attracted considerable praise	44	5								109
▲ Harman Kardon HK6250	280	<b>G+</b> Heavily based on the cheaper HK6150, this version offers slightly more power with a similarly gutsy and expressive sound	51	5								116
Harman Kardon HK6500	430	<b>A-</b> Follow up to 6500 is disappointing with grainy hf and limited depth. Quite powerful but ultimately not up to the mark	69	6								121
Harman Kardon HK6850	900	<b>G</b> This monster is derived from the HK6800 with a similarly deep and powerful sound but a rather steep price tag	101	6								109
Heybrook C3/P3	1379	<b>A</b> Heybrook has improved the manufacture of its power amp though flaws in the preamp's disc input remain	146	4								104
▲ Heybrook Signature	2297	<b>G+</b> A stunningly powerful and vivid-sounding combination which is equally impressive via vinyl or CD	148	4								109
▲ Jadis JP30/JA30	12204	<b>E</b> French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4								60
JVC AX-A342	170	<b>A</b> A value-conscious budget amp offering plenty of power but a slightly untidy and inconsistent sound	77	5								109
JVC AX-R562	250	<b>A-</b> More fuss and bluster than detail and dynamics was how one listener concisely described this less than wonderful model	90	5								121

# Amplifiers continued

Product	Price	Comments	Output W&Q	Line inputs	MM	MC	Integrated Preamp	Remote control	Headphone socket	Issue No.
JVC AX-Z1010	650	<b>G+</b> One of the best behemoths: a big amp with a big, boppy and unmuddled sound and a couple of ancient 16-bit DACs for good measure!	124	6	•	•	•	•	•	109
Kelvin AZI	700	<b>A</b> This latest Absolute Zero still sounds animated but also rather more synthetic and crude. It's also rather more expensive.	100	6			•			116
Kenwood KA-3020	170	<b>G+</b> An unassuming little amplifier that turns in a remarkably balanced and entertaining sound. Lively, detailed and engaging	66	5	•		•			97
Kenwood KA-4050R	280	<b>A-</b> Respectable but ultimately uninspiring model whose remote control is its main asset.	85	5	•	•	•		•	121
Kenwood KA-5050R	350	<b>A</b> A listenable but neither particularly communicative or captivating amplifier that puts features ahead of sound.	103	6	•	•	•		•	129
Lescon Quattra	420	<b>G</b> Underpowered but with the flexibility of four independent power amps. Very deep, captivating sound with 3D soundstaging.	40	5	•	•	•			92
Linn Majik-I	600	<b>A</b> 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 Quartet A	329	<b>A-</b> An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble.	72	5			•			121
Magnum A-Class	599	<b>G+</b> Lashings of rich and compelling music, trading a hint of lushness for stark accuracy. An unexpected find. Phono stage option	55	7			•			116
Marantz PM-52SE	300	<b>G+</b> The SE premium pays for a degree of fluency that draws you into the music and keeps you there. Rather nice	95	6	•	•	•			121
Marantz PM-80mkII	480	<b>G-</b> 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
Meridian 201/205	1285	<b>G+</b> A fine preamp with option of full system remote, plus competent monoblok power amplifiers with generally good performance	100	6	•	•	•	•	•	62
Moth Series 30	587	<b>G+</b> 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	<b>G+</b> 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
Musical Fidelity Tempest	349	<b>P+</b> Basic but lusty amp has a disturbingly bright and forward sound, accentuating strings and percussive detail above all else.	62	6						116
NAD 302	170	<b>G+</b> A spritely and uplifting performance. Sounds loud but never intrusive or fatiguing.	39	5	•		•			116
NAD 304	230	<b>G+</b> Equally effective with CD and vinyl this is another successful and entertaining NAD amplifier for your shortlist	50	6	•		•			121
NAD 1000S/208	1120	<b>A+</b> One of the beefiest amplifiers we've ever tested. Unfortunately it sounds too restrained and lightweight.	314	5	•	•		•	•	124
Nakamichi IA-3	350	<b>G</b> A minimalist outing for the cassette heroes that's very confident if a tad restrained.	62	3			•			121
NVA AP20	320	<b>G+</b> Utilitarian amplifier sounds gentle and restrained but is euphonic and utterly engaging. Optional phono stage	35	4			•			109
Onix OA-21S/SOAP	730	<b>G-</b> 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
Onix OA22L	300	<b>A+</b> Nothing genuinely unpleasant about this amplifier, simply that its hurried and lacklustre sound fails to spark the imagination.	39	5			•			116
Orelle SA-020.2	419	<b>A</b> Potentially system dependent this split the panel but ultimately elicited only limited enthusiasm	86	6			•			121
Philips FA-930	200	<b>A+</b> Radical styling hides a digital switching facility plus full remote control over what is Philips' best effort to date	99	5	•		•		•	109
Pioneer A-300X	230	<b>A+</b> 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	<b>VG</b> 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	<b>VG</b> This looks like the established A-400 but uses new circuitry to encourage a gentler if no less enthralling sound.	68	5	•	•	•			129
QED A270CD/PA	370	<b>G+</b> 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	<b>G</b> 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	388	<b>A</b> 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	1515	<b>G</b> Amplifiers with a classic lineage but compromised by an equally dated, soft and undynamic sound.	138	6	•			•	•	124
Rational Audio	175	<b>A+</b> Wacky Czechoslovakian amp offers a very open and fluid sound via CD but its MM performance depends on cartridge load impedance.	129	3	•		•			92
Ray Lumley Model 75	1995	<b>G+</b> Valve monoblocks represent good value. What they lack in musical subtlety they make up for in sheer muscle.	75					•		78
Rega Elex	359	<b>A</b> Minimalist amplifier that sounds too forward, hard and unforgiving for its own good. Shows plenty of promise, however.	51	4	•		•			116
Rose RV-23	460	<b>G+</b> 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-930AX	175	<b>G+</b> This budget wonder captivated our listeners with its clean, vibrant and thoroughly involving sound	53	3	•		•		•	104
Rotel RA-935BX	225	<b>G</b> 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-940BX	250	<b>G</b> Rotel's cheapest 'BX' amp prompted a mixed reaction, some finding it muddled while others thought it 'exceedingly musical'	53	5	•	•	•			109
Rotel RA-960BX	300	<b>G+</b> If you like music to harbour a latent rather than blatant sense of power this amp's confident restraint could be just the ticket.	88	5	•	•	•			116
Rotel RA-980BX	430	<b>A</b> This integrated version of the 980BX pre/power is certainly very powerful but also lacks poise and subtlety.	139	5	•	•	•			129
Rotel RC-980BX/RB-980BX	800	<b>A</b> Plenty of watts per pound, sound is expansive but lacks a sense of poise, of control and fine detail - a disappointment	143	5	•	•		•	•	109
Sansui AUX-417R	280	<b>G+</b> Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•		•	121
Sansui AU-X911DG	900	<b>G+</b> At its best when used with the on-board MASH/PWM DAC where it sounds technically neutral but still emotionally charged	112	7	•	•		•		85
Sherwood AI-2210	80	<b>P</b> 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	<b>G+</b> Smooth, sophisticated Canadian valve amp with a decent direct input and more features than average	54	6			•			126
Sugden A21a	469	<b>G</b> The modern-day relative of Sugden's original Class A amp and one that offers a smooth, easy-going sound.	25					•		92
TEAC AX-1000	180	<b>A-</b> Initially entertaining but ultimately unsatisfactory and rather short on high frequencies	62	5	•		•			121
TEAC A-X5000	260	<b>A-</b> This amplifier is compromised by a grey and muddled sound that taxed the concentration of our listeners. Better via MM disc	107	6	•	•	•			97
Technics SU-VZ220	130	<b>A-</b> Cheap, cheerful and pretty flexible to boot the SU-VZ220 quickly sounds thin, splashy and relentless when the going gets tough	50	4	•		•			109
Threshold FET 10e/SA-4	11852	<b>G+</b> Almost valve-like limpidity and excellent soundstaging are star qualities of the Threshold amps	100	7	•	•		•	•	Col
Wharfedale 2050A	250	<b>A-</b> Loud and potentially aggressive amp that is reasonably detailed and clear, but ultimately a bit much like hard work	70	5	•	•	•			121
Woodside ISA230	900	<b>A</b> 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	<b>G+</b> Synergistic pairing with a cool, controlled sound, good focus and transparency. More about poise than grunt	35	5				•	•	100
YBA Integre	1199	<b>G+</b> Audiophile spec French integrated with good resolution and nice phono stage.	57	4	•		•			121
YBA 1 pre/power amp	8000	<b>E</b> 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	<b>G+</b> 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	<b>G</b> This duo produced see-through, ethereal stereo images that were more convincing towards the centre of the soundstage	56	4	•			•	•	72

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## A/V 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 which, strictly speaking, makes 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). Most also include a line-level subwoofer output to enhance the rib-shaking impact of 'action' movies for example. 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. This also opens up including options like Jazz, Church, Hall and Stadium Surround 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.

## A/V amplifiers

Product	£Price	Comments	Front output W(R,L)	Centre output W(R,L)	Surround output W(R,L)	Video input modes	Audio inputs	Subwoofer output	AM/FM tuner	Issue No.
Denon AVC-3530	999	<b>VG</b> 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	<b>G+</b> 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	<b>G-</b> 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	<b>A+</b> Sounds just great through front and centre channels but surround is very weak.	69	52	51	3	7	6	3	125
Philips FR940	450	<b>A-</b> 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	<b>A-</b> The disappointingly grey sound lacks attack and confidence, undermining the tension of movie soundtracks.	53	55	32	9	9	5	3	• 125
Sherwood RV-6010R	350	<b>A-</b> Another A/V amp with mismatched channels, creating a soft and ineffectual soundfield.	99	31	25	4	7	3	0	• • 125
Technics SA-GX550	450	<b>VG</b> A surprisingly gutsy and involving performance from a modestly-priced package.	48	48	49	2	5	2	0	• 125
Yamaha DSP-A2070	1100	<b>G+</b> 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.

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	<b>A-</b> A well-rounded and cuddly sound from a high-ish resistance interconnect. Lacks a sense of scale and dynamics	•		•		•		108
Audioquest Ruby Hyperlitz	70	<b>A+</b> A crisp, fast and articulate-sounding cable if one that's a little too pointed for our listeners	•				•	•	108
▲ Audioquest Lapis Hyperlitz	329	<b>E</b> An expensive cable that justifies its tag with a beautifully poised sound - natural, relaxed and very compatible.	•				•	•	108
Audio Technica AT620	28	<b>A</b> Plenty of cable for the money but its performance is distinctly lightweight, lacking depth and subtlety			•	•		•	108
Chord Chameleon	59	<b>A+</b> An unpredictable cable with an 'anomalous treble' that can sound harsh one moment and oddly recessed the next!			•	•		•	108
▲ Chord Solid	115	<b>VG</b> What looks like a military RF cable actually provides a slightly forward but incisive and intimately detailed performance			•		•	•	108
▲ Cogan-Hall Intermezzo Ref	185	<b>E</b> 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	<b>G+</b> This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser			•		•	•	108
▲ DNM Interconnect	40	<b>VG</b> Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners					•	•	108
Goldring 'Studio Quality'	20	<b>A-</b> 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	<b>G+</b> This odd-ball cables utilises a mix of copper, brass and aluminium strands to achieve a very distinct sound			•	•		•	108
▲ Madrigal HPC	215	<b>VG</b> A very unusual cable design with a business-like approach to music-making that barely conceals its underlying 'fizz'.			•	•		•	108
Magnan Type Vi	595	<b>A+</b> 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	<b>G+</b> 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	<b>G+</b> 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	<b>G+</b> The four twisted conductors of this cable actually mark a downturn in audio quality			•		•	•	108
▲ Panasonic RP-CA910	50	<b>G</b> 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	<b>VG</b> Both these cables share a similarly open, transparent and dynamic sound though the latter is arguably the better integrated			•	•		•	108
Sonic Link Yellow	60	<b>A</b> An interesting non-copper cable with an up-front sounded described as 'heavy-handed and pushy'.			•		•	•	108





## Analogue interconnects continued

Product	£Price	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Silver	Issue No.
▲ Sonic Link Violet	99	<b>G+</b> Another nickel-based cable but with a very much better-balanced sound than Sonic Link Yellow	•			•			108
Straight Wire Laser Link	50	<b>A+</b> Thanks to its high parallel capacitance this interconnect helps remove ultrasonic noise. Unfortunately it still sounds very odd!	•			•		•	108
Straight Wire LSI-Encore	90	<b>A+</b> A solid-sounding cable with a strong mid and bass but a disappointingly sat-upon treble	•			•		•	108
▲ Tara Labs Prism	36	<b>G</b> 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	<b>G+</b> Praised by our panel for its lack of obvious vices, Quantum CD encourages a sweet and positive sound.	•				•	•	108
Tara Labs Quantum II	99	<b>G+</b> Bass power and extension is the key to the sound of this unusual and hi-tech cable	•				•	•	108
▲ van den Hul The Source	70	<b>G</b> Accurately reflects the life of the music without detail forcibly from the speakers		•		•		•	108
van den Hul MC D-102mkII S	80	<b>A+</b> A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble	•			•		•	108

## Digital interconnects

Product	£Price	Comments	Type	Plastic	Glass	Non-coaxial	Coaxial	75Ω	Issue No.
▲▲ Audioquest Video Z	50	<b>E</b> The very best available with an expressive sound but generous price to sweeten the pill	Electrical				•	•	108
Audioquest Digital PRO	90	<b>A+</b> A silver cable with all the drive of Video Z but lacking its clean-cut transparency	Electrical				•	•	108
Audioquest Optilink Z	100	<b>A</b> Good level of midband detail but frequency extremes lack depth and extension	Optical			•			108
Bandridge AL560	20	<b>P</b> The disappointingly heavy and muddled sound of this basic fibre thwarts any recommendation	Optical		•				108
Chord Codac	34	<b>A</b> A connection with a stranded inner core and a sound that lacks integration	Electrical				•	•	108
▲▲ DPA Digi-link	27.50	<b>VG</b> Can seem slightly impassive but there's no avoiding its exceptionally detailed sound	Electrical				•	•	108
DPA Opti-link	20	<b>P</b> Very similar to Bandridge AL560 with an equally naff sound	Optical		•				108
Kimber PSB DigiLink	24	<b>A-</b> An analogue interconnect inappropriately pressed into digital service. A visible deterioration in the digital signal results.	Electrical				•	•	108
Kimber KC-1 DigiLink	52	<b>A</b> 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	<b>A-</b> An asymmetric cable using silver conductors that deviates from the 75ohm standard. Not ideal for digital applications.	Electrical				•	•	108
▲ Kimber Opti-Link	70	<b>G</b> 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	<b>G+</b> A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible.	Electrical				•	•	108
▲ Monster Cable Interlink LS100	45	<b>G</b> Well constructed stepped-index fibre with polished ends and rugged connectors. Slightly lean, fuzzy but engaging performance	Optical		•				108
Moth Leyline Datalink	140	<b>A-</b> A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive.	Electrical				•	•	108
▲▲ QED DigiFlex	19	<b>VG</b> 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	<b>A-</b> 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	<b>G+</b> 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	<b>VG</b> 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	<b>G+</b> 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	<b>A</b> 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	<b>VG</b> 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	<b>A+</b> Ideal for laying flat under carpets, F-14 encourages a slightly warm and vibrant sound	M	L			•	•	109
Audioquest Type 4	75	<b>A+</b> 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	<b>G</b> 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	<b>A</b> 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	<b>A-</b> 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	<b>VG</b> Extra care must be taken to prevent shorting this user-hostile cable. Nevertheless it sounds superb!	L	L			•	•	109
▲ DPA IS19	275	<b>G+</b> 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	<b>A+</b> The high impedance of this simple ribbon cable has an influence on the treble response of some speakers. Lacks 'oomph'	H	L			•	•	109



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# Speaker cables continued

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper	Silver	Issue No.
Heybrook Heywire	66	<b>A</b> This well-meaning facsimile of earlier ribbon-style cables ends up sounding lumpy and uneven	H	L			•	•	109
Isoda Electric HA-20	400	<b>A+</b> This unorthodox cable employs a combination of copper, brass and aluminium strands. It sounds 'oddly impure'!	M	L	•			•	109
▲▲ Mission Stranded	20	<b>G+</b> 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	<b>A</b> 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	<b>A-</b> The archetypal 'old-style Monster Cable' that labours under a soggy bass and untidy treble	L	M	•			•	109
Naim NAC A5	44	<b>A-</b> 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	<b>A</b> 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	<b>E</b> Tonally accurate and exquisitely detailed, this cable opens a very transparent window on the music	L	H			•	•	109
▲ Silver Sounds 16/4	200	<b>VG</b> 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	<b>G-</b> 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	<b>G</b> A conventional multi-stranded cable with a refreshingly up-beat, crisp but slightly lean-sounding balance	M	M	•			•	109
▲ Straight Wire Flex-4	50	<b>G+</b> 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	<b>G</b> 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	<b>A</b> 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	<b>A</b> 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	<b>VG</b> Blown-in from the continent, vdH's 'Wind' kicks up a storm with its lush midrange and bone-crunching bass!	L	M	•			•	109



## 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. (Tonal and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape auto-

matically.) 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.

## Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	Auto calibration Bias adjust 3 Head	Twin deck	Autoreverse	Issue No.
▲▲ Aiwa AD-F410	120	<b>A</b> Comparable to AD-F500 but cheaper: Good all round performance, well adjusted, useful basic and not so basic features	•	•	•			•		99
▲▲ Aiwa AD-F810	230	<b>G</b> First class budget 3-head machine with a dual capstan transport that really works at reducing the 'fudge' factor	•	•	•			•		99
▲▲ Aiwa AD-WX828	200	<b>G-</b> Equipment levels strong, and sound is both vivid and presentable, but control system daunting.	•	•	•				•	123
▲▲ Aiwa AD-WX929	230	<b>A</b> Superbly equipped twin deck that works and works well - remote control	•	•	•				•	117
▲ Aiwa XK-S9000	700	<b>G+</b> Fabulous build, clunky transport and sharp, refined sound quality with Dolby S or B and metal tapes	•	•	•	•	•	•		105
Akai DX-57	220	<b>G</b> Eschews fancy gadgets for a good transport and decent electronics. Sound quality is firm and tidy but avoid Dolby C.	•	•	•	•	•	•		105
Akai GX-65	300	<b>A</b> Fine ungimmicky middle ranking deck with simple, purposeful controls, works best with metal tapes. Performance fair to good	•	•	•	•	•	•		87
▲ Akai GX-95II	440	<b>G+</b> Sharp, clear and articulate sounding deck, with superb performance extending to frequency extremes	•	•	•	•	•	•		99
Akai GX-R35	220	<b>A</b> Middling sound quality at best with Dolby B; deteriorates with Dolby C	•	•	•	•	•	•		99
▲ Akai GX-W45	320	<b>A</b> 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	<b>E</b> Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•	•	•	•	•		111
Denon DRM-710	260	<b>A</b> Although this is a fair performing model, the design has lost some of the competitive edge of its predecessor, the DRM-700.	•	•	•			•		105
▲ Denon DRS-610	200	<b>G</b> Unique loading mechanism provides stability, and the deck has a crisp, clean quality. Occasionally anaemic bass.	•	•	•			•		111
Denon DRS-810	300	<b>G-</b> Drawer loading deck, carefully designed, yet lacking in subtlety on audition.	•	•	•			•		127
Dual CC800RS	170	<b>A-</b> Low(ish) cost auto-reverse deck. Delivers a punchy but ultimately rather crude impersonation of source material, thin, lightweight bass.	•	•	•					105
Goodmans Delta 700W	100	<b>P</b> Compact and ultra-basic twin deck which is rough and bass shy, with less than stable tape path.	•						•	123
Harman Kardon DC5500	600	<b>A</b> Workmanlike sound quality offset by high price and inexplicable shortcomings like 'forgetful' Dolby switching and no timer support.	•	•	•				•	117
▲▲ Harman Kardon TD4200	250	<b>G+</b> This is a very basically equipped deck built to a high standard which sounds solid and refined.	•	•	•			•		123
▲ Harman/Kardon TD4400	350	<b>G</b> Simple features plus excellent engineering make this a model of integrity.	•	•	•			•		127
Harman Kardon TD4600	700	<b>A</b> 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	<b>A-</b> Tidy, stable but ultimately rather soul-less experience. Auto-reverse is useful though.	•	•	•				•	117
JVC TD-X352	150	<b>A-</b> Disappointingly amorphous sound despite decent measured results.	•	•	•			•		117
▲ JVC TD-V562	200	<b>G+</b> Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque.	•	•	•	•	•	•		123
▲ Kenwood KX-3050	170	<b>A</b> Acceptable sound quality marred only by a loss of midband analysis and slightly edgy treble.	•	•	•					117
Kenwood KX-5530	220	<b>A-</b> Neat looking, well equipped deck, adequately engineered but somewhat lacking musically. Worth considering if auto-reverse is a must	•	•	•			•		105
▲ Kenwood KX-7050S	400	<b>VG</b> Very well equipped and fine sounding deck, includes well implemented Dolby S	•	•	•	•	•	•		127
▲ Marantz CP230	400	<b>A</b> This is a competitively priced portable recorder though not suited to replay of musicassettes	•					•		52
▲ Marantz CP430	500	<b>A</b> Uniquely flexible and compact package for outside work which at a pinch can double as a domestic cassette deck	•					•	•	87

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# Cassette decks continued

Product	£Price	Comments	Dolby B	Dolby C	Dolby S	Dolby 3 Head	Dolby HX Pro	Auto calibration Bias adjust	Twin deck	Autoreverse	Issue No.
NAD 602	200	<b>G</b> Minimalist deck for the audiophile market. Unfortunately engineering is minimalist too	•	•	•						127
▲ Nakamichi DR-3	400	<b>VG</b> Refined, exquisitely detailed and solid sounding 'budget' Nakamichi 2-header.	•	•					•		123
▲▲ Nakamichi DR-2	600	<b>VG</b> Accomplished design with simple features (manual tape select!) but superb sound/serviceability.	•	•					•	•	127
▲ Nakamichi DR-1	850	<b>VG</b> Typically idiosyncratic Nakamichi with manual everything. Good azimuth adjustment and dynamic, authoritative sound.	•	•							117
▲ Nakamichi RX-202E	600	<b>G+</b> Fine, clear and articulate sounding player. Excellent with prerecorded material, but idiosyncratic and sometimes obstructive control	•	•					•	•	63
Philips DCC600	500	<b>A+</b> Simplified circuit and mechanism, but the Philips badly needs a D/A converter transplant	•	•							123
Pioneer CT-S420	250	<b>A+</b> Poor replay compatibility, but otherwise satisfactory, if slightly uneven performer.	•	•	•				•	•	127
▲ Pioneer CT-S520	280	<b>G</b> Decent if slightly coloured middle ranker with FLEX to revitalise old or soggy sounding tapes.	•	•	•				•	•	123
Sansui D-790WR	170	<b>P</b> Modestly poor sounding but simple to use twin deck. Type II tapes show large response errors.	•							•	123
Sansui D-X117WR	220	<b>P</b> 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	<b>P</b> Good range of features, let down by poor transport and iffy electronics.	•	•	•					•	117
▲▲ Sony (WMD6C) Pro Walkman	290	<b>G+</b> 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	330	<b>G</b> Cheapest Dolby S three header yet, yet slightly let down by lack of attention to detail	•	•	•	•	•	•			127
Teac R-9000	500	<b>G</b> Much better than average auto-reverse deck, well worth considering. Nicely engineered too.	•	•	•	•	•	•		•	105
▲ Teac V-8000S	700	<b>G</b> Superb stability and real subtlety, this must be the best TEAC yet. The only disappointment was the Dolby C	•	•	•				•	•	105
▲ Teac V-7010	800	<b>G+</b> Heavyweight (in every sense) design, immaculately crafted, impeccable sound, but not for grannie.	•	•	•				•	•	127
▲▲ Technics RS-BX646	230	<b>G+</b> Unusually well built and non-microphonic deck with sophisticated facilities and lucid midband.	•	•	•				•	•	127
▲▲ Yamaha KX-260	160	<b>A</b> Lively, entertaining deck that trades gadgets for a convincing performance at an attractive price point	•	•	•				•	•	111
▲ Yamaha KX-650	260	<b>G</b> Fine audio manners, especially in the midband and treble, mark this high class deck out from the crowd	•	•	•				•	•	99



## 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 onboard 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 keypad pads are those with calculator style buttons which makes track access much quicker.

## CD players

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Remote control	Track entry keypad	Headphone socket	Variable output	Issue No.
▲ Aiwa XC-300	150	<b>A+</b> Cheap, cheerful and gratifyingly free of digital 'nasties', well-equipped but safe rather than thrilling on the sonic front.	Toshiba BS	•	•	•	•	•		107
Aiwa XC-750	200	<b>A</b> A refined version of the XC-700, sadly it has lost the magic of the original	PDM Bitstrm	•	•	•	•	•		119
▲ Adcom GCD-600	699	<b>G</b> Equipped with a 5-disc carousel loader, this bright and breathtaking player sounds similar to Adcom's amps.	16-bit	•	•		•	•		124
▲ AMC CD6	349	<b>G+</b> 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 Delta 270	800	<b>G+</b> 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	<b>G-</b> Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•					119
AVI S2000MC	999	<b>G+</b> A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•					119
Creek CD60	500	<b>G</b> A big and confident sound from a player that's 'into' green. So it looks ghastly even if the internal design is very thoughtful.	16-bit	•	•					107
▲ Denon DCD-595	180	<b>G</b> Lacks the 695's pitch control but provides a smoother sound by way of recompense	18-bit	•	•				•	128
▲ Denon DCD-695	200	<b>G</b> A rough diamond with a raunchy sound to match. Pitch feature will be of interest to budding musicians.	18-bit	•	•				•	124
Denon DCD-890	270	<b>G-</b> Similar to the DCD-1290 in its execution, sounds lively and powerful but lacks subtlety.	18-bit	•	•	•				112
Denon DCD-1290	330	<b>G-</b> 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 CD1080RC	220	<b>A-</b> Strange-sounding player with a top-heavy treble that does little to redress its lack of vibrancy and emotion	MASH/PWM	•	•					107
▲ Genexxa CD-4900	129	<b>A</b> A little thin on detail, build quality and dynamics but thin on price too!	MASH/PWM	•						124
▲ Goodmans Delta 700	110	<b>A+</b> A 16-bit alternative to the CD650II that furnishes a colourful and animated sound	16-bit	•						128
Goodmans GCD-658	170	<b>A-</b> A 6+1 magazine-loading autochanger with an exaggerated and often aggressive sound	Hybrid	•						117
Grundig Fine Arts CD2	190	<b>A-</b> A stylish-looking player with a disappointingly vague approach to music-making	SAA7350		•				•	128
Harman Kardon TL8500	600	<b>A</b> This 5-disc carousel player sounds civilised enough but lacks the detail and finesse of its peers	MASH/PWM	•						117
▲ Harman Kardon HK7725	800	<b>VG</b> This flagship implementation of RLS sounds impressively bold and dynamic - a genuine rock 'n roller!	18-bit RLS	•	•	•	•	•		124
JVC XL-V264	160	<b>A</b> Even the latest PEM DAC cannot rescue the slightly grubby and uninteresting sound of this player	PEM Bitstrm	•						128
▲ JVC XL-2464	200	<b>G+</b> This latest variation on a traditional 200 theme is no less impressive than JVC's past generations.	PEM bitstrm	•	•	•	•	•		124
JVC XL-Z1050	500	<b>A</b> Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM Bitstrm	•	•	•	•	•		119
Kenwood DP-3050	200	<b>A+</b> A slightly over-cooked version of the DP-3040 with a highly civilised but uninteresting sound.	NPC Bitstrm	•	•	•	•	•		124
Kenwood DP-7050	350	<b>A</b> Kenwood's first sowing of Philips' Bit Stream technology has fallen on stony ground judging by its dry and awkward sound	PDM Bitstrm	•						119
▲ Linn Karik	1497	<b>VG</b> Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•					119
▲ Marantz CD-52II	230	<b>G</b> Launched to usurp the position of its own CD-52SE, the '52II is less colourful but equally appealing	PDM Bitstrm	•	•					119

# 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.
▲ Marantz CD-52IISE	300	<b>G</b> 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-72	450	<b>G+</b> A heavily-constructed player. This implementation sounds astonishingly solid and immediate but also rather too 'clean'.	bitstream	•	•	•	•	•	•	107
Marantz CD-72SE	600	<b>G+</b> A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	•	112
▲▲ Meridian 206ΔΣ	995	<b>E</b> A new variation on the 206 theme with the most liquid and captivating sound to date	Crystal BS	•	•	•	•	•	•	119
▲ Meridian 208	1550	<b>E</b> State of the art CD sound combined with a decent preamp and full remote control	PDM Bitstrm	•	•	•	•	•	•	83
Mission DAD5	300	<b>A+</b> Similar to Philips' 600-series: lively, plenty of space and full of 'bounce' but a little too eager to impress in the short term	bitstream	•	•	•	•	•	•	107
▲ Musical Fidelity CDT	5019	<b>G+</b> Oddball player with a cheap top-loading transport and appalling digital gubbins yet saved by the euphony of its valves!	hybrid	•	•	•	•	•	•	112
▲ NAD 502	220	<b>G</b> 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	<b>A-</b> This looks new enough but sounds little better than the older CD Player 4 upon which it is firmly based.	18-bit	•	•	•	•	•	•	124
Orelle CD-160.2	750	<b>A-</b> Based on Philips traditional 16-bit technology but suffering an unusually disjointed and undynamic sound.	16-bit	•	•	•	•	•	•	124
▲ Philips CD690	130	<b>G-</b> The remote-less version of Philips CD692 but with a colourful performance that's all its own.	PDM Bitstrm	•	•	•	•	•	•	124
▲ Philips CD732	140	<b>A+</b> A cross between Philips CD690 and CD920 is no more technically accomplished but encourages a very lively and entertaining sound	SAA7341	•	•	•	•	•	•	128
▲ Philips CD920	160	<b>A+</b> A new budget player with an appalling technical record but a surprisingly clean if understated sound	SAA7341	•	•	•	•	•	•	119
Philips CD930	200	<b>G-</b> Featuring digital circuitry similar to Marantz's players but a sound that's a little too ripe and soft.	PDM Bitstrm	•	•	•	•	•	•	112
▲ Philips CD950	350	<b>G+</b> Philips' top 900-series player is the first to employ its advanced DAC7 chipset. Sounds very crisp, clear and confident.	DAC7	•	•	•	•	•	•	112
Pioneer PD-102	150	<b>A</b> Smooth and littered with plenty of underlying detail, this budget player remains distinctly unadventurous	PFM Bitstrm	•	•	•	•	•	•	128
Pioneer PD-S802	350	<b>G</b> Once again Pioneer's LLC topology only served to split and confuse the listening panel. It's good, but quirky!	PFM BS	•	•	•	•	•	•	124
▲ Pioneer PD-M701	330	<b>G+</b> A 6-disc multichanger from the originators of the breed. A little untidy perhaps, but still sounds fresh, dynamic and exciting	PDM Bitstrm	•	•	•	•	•	•	117
Pioneer PD-M901	450	<b>A</b> Another 6-disc multichanger based on the PD-M701 but with the addition of various 'Sound Field' options. Listening is hard work	PDM Bitstrm	•	•	•	•	•	•	117
▲ Pioneer PD-S901	500	<b>G+</b> 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	<b>E</b> Deceptively sleek in appearance but with a powerful, fluid and captivating sound reminiscent of Meridian's 206.	Crystal BS	•	•	•	•	•	•	124
▲ Rotel RCD-945AX	230	<b>G</b> Based on the same CD-player-on-a-chip as Philips CD690 but with improved execution and build.	SAA7341	•	•	•	•	•	•	124
▲▲ Rotel RCD-965BX	300	<b>E</b> An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	PDM Bitstrm	•	•	•	•	•	•	100
▲ Sansui CD-X217	200	<b>G-</b> Sansui has returned to its roots judging by the balmy and very comfortable sound that pours from this player	MASH/PWM	•	•	•	•	•	•	119
Sansui CD-X317	250	<b>A</b> 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	<b>A</b> 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	<b>G+</b> A beautifully constructed if rather dated flagship player with an equally sedate and unadventurous sound.	MASH/PWM	•	•	•	•	•	•	124
▲▲ Sherwood CD-3020R	130	<b>G</b> Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	•	119
▲ Sherwood CD-5010R	160	<b>G+</b> A warm, detailed and enjoyable performance from a solidly built but affordable package.	PDM Bitstrm	•	•	•	•	•	•	124
Sony CDP-X303ES	550	<b>A+</b> A disappointingly lean and inconsistent result from a player that puts the 'high' in technology if not fidelity	PLM Bitstrm	•	•	•	•	•	•	124
Sugden SDT-1	850	<b>A</b> 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	<b>A</b> A well-meaning attempt to pare-down the CD-P4500 results in a similar looking player with a thoroughly uninspiring sound	PDM Bitstrm	•	•	•	•	•	•	112
▲ Teac CD-P4500	280	<b>G</b> 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	<b>A+</b> A basic analogue stage compromises the potential of TEAC's superb engineering and digital electronics. Lacks bass energy	DAC7	•	•	•	•	•	•	119
▲ Technics SL-PG340A	150	<b>A+</b> No more or less impressive than the old SL-PG320A, this new version is attractive enough if slightly restrained	MASH/PWM	•	•	•	•	•	•	128
▲ Technics SL-PG440A	170	<b>G</b> 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-PG520A	180	<b>G+</b> A cracking player. Superb clarity and dynamics, thrilling but musically involving too	MASH/PWM	•	•	•	•	•	•	107
▲ Technics SL-PS620A	200	<b>G+</b> 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-PS840	420	<b>A</b> A very refined but highly detailed and engrossing performance from just about the fastest, slickest player on the planet	MASH/PWM	•	•	•	•	•	•	119
Woodside WS2	1095	<b>G+</b> Responded well to our jazz and classical selection but sounding bright and grainy with the pop CD's	16-bit	•	•	•	•	•	•	95
Yamaha CDX-670	290	<b>G-</b> 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 mechanism which reads the information from the disc, called the transport, and an electronic 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 at the lower end of the market both of these are contained in a single box, the best CD 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. For instance an early machine with a satisfactory transport but a dated convertor 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 is better than  $\pm 50$ ppm (parts

per million), certain DACs won't lock onto (and thus can't be used with) 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 to go with it.

Entries for one make transport/DAC combinations are listed after the separate components.

## CD transports

Product	£Price	Comments	Electrical digital output	Optical digital output	Track entry keypad	Headphone socket	Variable output	Remote control	Issue No.
▲ Meridian 200	895	<b>G+</b> Broadly compatible and offering a light, fresh and very bubbly sound that is both natural, engaging and unfatiguing	•	•	•	•	•	•	96
TEAC P-2	3500	<b>G</b> Beautifully styled and constructed but sound is bleached and generally less inspiring than that of the P-10	•	•	•	•	•	•	96
Technics SL-PA10	470	<b>G</b> Has the unusual limitation of only optical output. Reassuringly solid and more immune to vibration than most	•	•	•	•	•	•	88

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# DACs

Product	EPrice	Comments	DAC type	Electrical digital input	Optical digital input	Phase invert	Issue No.
▲▲ Arcam Black Box 50	450	<b>VG</b> A very measured and sophisticated sound from a DAC that leaves plenty in reserve to accommodate future upgrades.	Hybrid	•	•	•	127
▲ Audio Alchemy DAC-in-the-Box	200	<b>G</b> Despite its slightly veiled sound this giveaway DAC may still rescue the oldest of players from obsolescence.	18-bit	•	•		127
▲▲ Audio Alchemy DDE v1.0	420	<b>VG</b> A very sweet and seductive sounding unit that gives good results with a wide range of CD players/transports	Bitstream	•	•	•	101
Audiolab 8000DACmkII	750	<b>G</b> 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	<b>G</b> An oddball DAC with manual de-emphasis switching. Needs a high preamp input impedance if bass is not to suffer.	20-bit	•	•		127
Audio Synthesis DSM-M	1234	<b>G+</b> A weighty but neutral and highly calculated performer, best suited to transports like the P-10, despite Sync Lock facility.	20-bit	•	•		113
Beard DAP-1	1250	<b>A-</b> Clad in a wooden case this marriage of digital technology and valves has hit the rocks, a disappointingly flat sound	16-bit	•	•	•	113
DPA Digital Little Bit II	400	<b>G</b> 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	<b>G</b> With either P-10 or Meridian 200 transports it delivers a very taut and dynamic sound, bathed in an open acoustic	DAC7	•	•		103
DPA Digital PDM1 Series 3	1280	<b>G+</b> Bears technical comparison with both PDM2 and Bigger Bit but - in terms of sound quality - is great advance on the latter	DAC7	•	•		103
▲ ds/d Decode-1	495	<b>G</b> Elegantly designed bitstreamer with plenty of inputs, can sound too bright, immediate or artificial for its own good.	Bitstream	•	•	•	113
▲ Forte Audio Model 50	950	<b>VG</b> A typically big and full-blooded sound, infiltrated by a slightly euphonic quality but never hard or gritty.	DAC7	•	•		103
▲ Meridian 563	695	<b>G+</b> 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	<b>G</b> By refining the 203's sound further Meridian have also tempered its vibrancy and 'life'. Fickle with other transports	DAC7	•	•	•	101
Micromega Duo BSII	600	<b>G</b> 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	<b>A+</b> Described as a modest but entertaining performer, achieving its sweetest balance with Arcam's D170.3 transport.	SAA7321	•	•		113
▲ Mission DAC5	300	<b>G+</b> 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	<b>G+</b> The animated character of the Tubalog ensures it's a great upgrade on budget CD players.	18-bit	•			127
▲ NVA DAC-ON	730	<b>G+</b> DAC-ON actually turns out to be a QED Digit linked to substantial external supplies. A ruse that undoubtedly improves its sound	PDM Bitstrm	•			113
PS Audio Superlink	1230	<b>G-</b> Does the business with Meridian's 200 but can sound bloated, smeared and even vaguely electronic other transports	18-bit	•	•	•	103
▲▲ QED Digit	139	<b>G+</b> Bearing in mind its expressive but very forgiving performance the Digit is almost embarrassingly cheap	PDM Bitstrm	•			113
Roksan ROK-DA1/ROK-DS4	995	<b>G+</b> A creditable affair, both expansive and expressive in character but rather also lean in balance.	Crystal	•			113
Select Systems Dacula	400	<b>G</b> The overly warm and heavy bass of this DAC is quite atypical of the Crystal Bit Stream DAC.	Crystal	•			127
Stax DAC-Talent	1400	<b>G+</b> Natural, refined and never over-zealous, its also capable of sounding very spicy and dynamic. Can be a maturing influence	20-bit	•	•	•	101
▲ Sugden SDA-1	749	<b>G+</b> A pleasant surprise from the fuddy-duddies of audio, judging by its 'masses of high resolution detail and tremendous dynamics'	TDA1541	•			113
Sugden Stemfoot PDA-10	1200	<b>G+</b> Unfortunately this 'upgraded' SDA-1 is less impressive than the original, losing out on dynamics, airiness and subtle detailing	16-bit	•	•	•	113
Threshold DAC 1/e	3150	<b>G+</b> Can sound beautifully detailed with a marvellous sense of scale and sharp, solid images. Compatibility is unpredictable	MASH	•	•	•	103
Woodside DAC1	909	<b>G</b> Fine but slightly dated and costly package in performance terms - but flexible, musical and t well built	16-bit	•	•		87
▲ Woodside DAC2	510	<b>G+</b> Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•			101

# Transport/DAC combos

Product	EPrice	Comments	DAC type	Electrical digital input	Optical digital input	Headphone output	Track entry keypad	Variable output	Remote control	Issue No.
Audio Alchemy DDS/DTI/XDP/P52	2047	<b>A+</b> A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	•	120
DPA Digital T-I/PDM2mkII	3245	<b>G</b> An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	•	120
▲ EAD T-I000/DSP-1000	2195	<b>VG</b> 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	<b>G+</b> 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	<b>G</b> 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 602/606	3100	<b>VG</b> 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
Proceed PDT3/PDP3	4598	<b>G+</b> The third in a series of unusual transport/DAC combinations and a pairing that retains a powerful, confident and rugged sound	20-bit	•	•	•				120
▲▲ TEAC P-700/D-700	1500	<b>VG</b> They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•				120



# DAT players

**D**AT, 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 and typically DAT machines with this facility have been made for the pro and semi-pro markets.

# DAT players

Product	EPrice	Comments	Remote control	Optical in/out	Electrical in/out	AES/EBU in/out	S/PDIF in/out	Issue No.
JVC XD-Z1010TN	900	<b>A+</b> 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	<b>A</b> Slick, powerfully equipped, this pro DAT has a clear, quick and colourful sound somewhat lacking in weight and substance		•			•	111
Tascam DA-30	1199	<b>A+</b> Interesting pro DAT deck with solid, tangible sound quality which is nevertheless lacking in analysis		•			•	111

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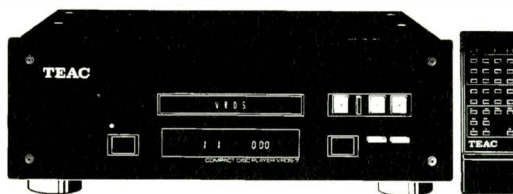
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# Headphones

There are a variety of different approaches to headphone 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 gen-

erally as good sonically.

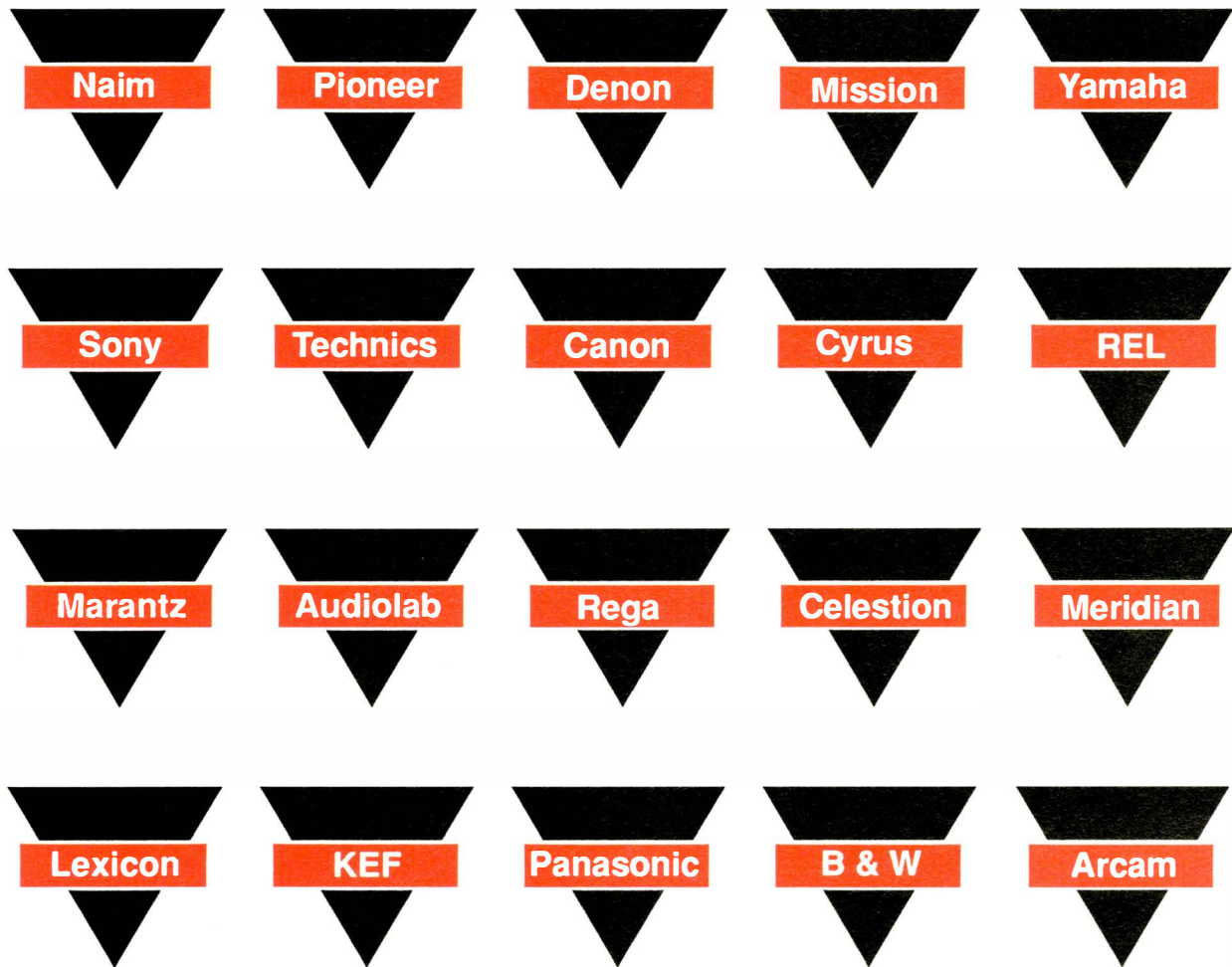
Another means of distinguishing different types is the way they sit on your head. There are three styles: circumaural models enclose the ear and rest on the side of the head; supra-aural designs feature a flat pad which presses on the outer ear (pinna); and intra-aurals rest inside the ear itself, and are popular with personal stereos.

## Headphones

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
▲ AKG K1000	646	<b>E</b> One of the best dynamics on the market, hooks directly to speaker outputs and makes much of the competition sound lame	Extra-aural	•	•	•	•	99
AKG K135	46	<b>A</b> 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	<b>G</b> 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	<b>G+</b> 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	<b>E</b> Heavyweight cans in most respects, the K340 with its electrostatic tweeter is a very revealing headphone	Circumaural			•	•	75
AKG K44	42	<b>A</b> Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural	•		•		99
▲ AKG K400	118	<b>VG</b> Comfortable over long sessions. Sound is exquisitely detailed, dynamic and uncoloured	Supra-aural	•		•		121
▲ AKG K500	138	<b>G+</b> Open and clear, they reproduced music with impressive definition, balance is on the light side but transparency is high	Circumaural	•		•		111
Aiwa HP-X30	26	<b>G-</b> A flashy personal stereo phone which alternatively could be used at home. A slight LF tonal preference colours the response	Supra-aural			•	•	75
▲ Audio-Technica ATH-308	26	<b>A-</b> Small cans with a fairly forward balance which helps perceived clarity but can become wearing over time, good for personals	Supra-aural	•		•		111
▲ Audio-Technica ATH-609	31	<b>A-</b> Warm feeling and sounding with impressive physical substance for the price, could be more relaxed and open	Circumaural	•		•		99
Audio-Technica ATH-611	51	<b>G</b> Same basic design as 609 but bigger thinner diaphragm makes this a more relaxed and informative headphone	Circumaural	•		•		99
Audio-Technica ATH-9000	246	<b>G</b> Electrets which connect to the amps speaker outputs, it sounds a little too smooth but would suit aggressive amps	Circumaural	•				111
▲ Audio-Technica ATH-910	90	<b>G</b> The closed-back 910s are an improvement on the 909s with a nice rhythmic quality rarely found with headphones	Circumaural			•	•	55
▲ Audio-Technica ATH-911	80	<b>VG</b> Nicely finished dynamic headphones with all the trimmings, plus a very clean and subtle sound	Circumaural	•		•		63
Bandridge EH910DD	50	<b>A-</b> Modestly successful mid/top, but dreadfully cloying, ploddy bass makes this model essentially unlistenable	Circumaural			•	•	121
▲ Beyer DT-211	25	<b>A</b> Good value compact, couth and enjoyable, esp in midband. Earpads not removable for cleaning	Supra-aural	•		•		121
Beyer DT411	59	<b>G</b> A reasonable but not very thrilling headphone that doesn't really offer enough at the price	Supra-aural	•		•		111
▲ Beyer DT911	199	<b>VG</b> Probably too revealing for many headphone amps these are very subtle and fine if expensive cans	Circumaural	•		•		111
▲ Beyer DT990	109	<b>VG</b> A significant pair of dynamic headphones; they have a smooth and yet revealing neutral sound that is hard to criticise	Circumaural	•		•		55
▲ Beyer IRS690	203	<b>VG</b> High quality infra-red headphones with soft comfy earpads and mellow but informative sound quality which is hard to dislike	Circumaural	•		•		75
▲ Jocklin Float Electrostatic	399	<b>E</b> These electrostatics have an openness of sound rarely found in the breed, with good dynamic range to boot	Circumaural	•			•	55
▲▲ Jocklin Float Model One	75	<b>G+</b> Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	Circumaural	•		•		55
▲ Jocklin Float Model Two	99	<b>G+</b> Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. te lack of adjustment	Circumaural	•		•		63
JVC HA-D690	40	<b>A</b> Competent but rather undistinctive cans, a bit middle of the road and well suited to aggressive sources	Supra-aural			•	•	111
JVC HA-D910	60	<b>A</b> Broadly acceptable if unexciting design with low level losses and some colourations	Circumaural			•	•	121
Kenwood KH-1000	20	<b>A-</b> First step up from a true mini: a near miniature which is cheap, comfortable and inoffensive	Supra-aural	•		•		121
Philips SBC3390	60	<b>A</b> Up front but rather aggressive headphone with lightweight, coloured sound. Not very comfortable.	Supra-aural			•	•	121
Quart Phone 75X	70	<b>A</b> Unusually comfortable sealed headphone, though sound isolation poor. Hard, edgy sound quality.	Circumaural			•	•	121
▲▲ Sennheiser HD440 II	35	<b>A+</b> Still the one by which others at the price are measured, though now slightly leaden sounding, cold treble	Supra-aural	•		•		121
Sennheiser HD 540II	120	<b>G+</b> A good but not great headphone that due to its high impedance and efficiency should work well with most sources	Circumaural	•		•		111
▲▲ Sennheiser HD560 Ovation II	140	<b>VG</b> Characteristic slightly heavy sound, but still the benchmark at this price level. High class sound and comfort	Circumaural	•		•		121
▲ Sony MDR-CD1000	170	<b>G+</b> A fine sounding and comfortable headphone that's likely to work well with most sources	Circumaural			•	•	111
▲ Sony MDR-CD3000	350	<b>G+</b> Better than most of the headphone outputs around so hard to make the most of, potentially up there with the electrostatics	Circumaural			•	•	99
▲▲ Sony MDR-CD350	30	<b>G</b> Very impressive, possibly the most open sounding cheap closed back can around, lightweight in balance but transparent	Circumaural			•	•	99
▲▲ Sony MDR-CD550	60	<b>G+</b> 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	<b>G+</b> Reasonably comfortable and eminently listenable these Sonys have characteristically good bass power and relaxed hf	Circumaural			•	•	111
Sony MDR-CD850	100	<b>A+</b> Very comfortable, and reasonable sound - better than most sealed designs - though hardness intrudes	Circumaural			•	•	121
▲ Stax Gamma pro/SRD-X pro	678	<b>E</b> 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	<b>E</b> The Signature when combined with the SRM-T1 valve driver must be the most transparent headphone available	Circumaural	•			•	72
▲ Stax SR Gamma	239	<b>G+</b> 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	<b>G+</b> An industry reference, frighteningly revealing, bringing across more information than loudspeakers costing twice as much	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRM-1	1239	<b>E</b> 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	<b>A</b> Another very comfortable sealed model, modest sound isolation and uneven sound favouring bass	Circumaural			•	•	121
▲▲ Vivanco SR808 Classic	55	<b>G</b> A new mid price reference from a new and interesting source. Good all round, no obvious shortcomings	Supra-aural	•		•		121
Yamaha YHD-1	46	<b>G</b> Stylish semi-folding design with a slightly forward balance that very nearly scraped a recommendation	Supra-aural	•		•		111

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# 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 small-

ish 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)	Site close to wall Bass from (Hz)	Site in free space Sensitivity (dB)	Floorstanding	Issue No.
▲ Acoustic Energy Aegis 1	452	<b>G</b> 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	<b>G</b> 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	<b>G+</b> Solid, authoritative and impressively accurate – if a shade ponderous and slow	63x26.5x37	23	85	•	86
Acoustic Research PI 3	219	<b>A</b> Lively good value box has extra bass driver to give plenty of thump, but lacks refinement and extension	51.5x21x23	50	88	•	110
Acoustic Research AR M.5	139	<b>A-</b> Pretty enough but a bit too tiny for its own good, it's better suited to auxiliary surround sound duties	22x16x23	50	88	•	114
▲▲ Acoustic Research AR M1	199	<b>G</b> Cutely shaped miniature delivers splendidly unboxy bass and midrange, but is a little marred by a rather bright treble	27x20x26	30	85	•	110
Acoustic Research AR M2	299	<b>A</b> Not necessarily as agile or well balanced as the cute little M1, M2 is larger, louder and still attractively unboxy	41x24x36	28	89	•	118
▲▲ Allison AL100	100	<b>A</b> 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	<b>A-</b> 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	<b>G-</b> 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	<b>A</b> 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	<b>A-</b> 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	<b>G+</b> 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	340	<b>G</b> 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	<b>G+</b> Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82	•	86
▲ Audio Note AN-E	1300	<b>G+</b> 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	799	<b>G+</b> 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
▲ Audioplan Kontrapunkt	899	<b>G+</b> Sounds as sweet as it looks, dressed expensively in real wood with matching stands. not for bass or loudness freaks	31x24x13	48	83	•	86
Aura SP-50	400	<b>A</b> Two very tasty drivers rather outclass the cabinetwork; a capable but slightly dull compact stand mount	40x22x25	30	87	•	126
▲ B&W 2001	120	<b>A</b> 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	<b>A-</b> Flashy and assertive ghetto blaster styling is not reflected in the rather bland, if well balanced sound	43x21x25	30	88	•	122
▲ B&W DM620i	399	<b>A+</b> Good material value, this compact floorstander has a beautifully voiced midband, less happy bass tuning	77x24x32	40	89	•	126
▲ B&W Matrix 801	3495	<b>G+</b> 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	<b>G</b> Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	98
▲ Bose 305	430	<b>G-</b> 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	<b>A</b> 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	<b>A</b> The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Bose Interaudio 3000XL	170	<b>A-</b> Lots of perceived value and well enough balanced, but low cost engineering results in a crude and unsubtle sound	46.5x29x23	45	89	•	71
Boston HD5	139	<b>A</b> 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	<b>G-</b> Clever powered subwoofer system integrates well and improves system loudness and power handling	50x28.5x42	35	NA	•	126
Brinkmann Endymion	395	<b>A+</b> Omnidirectional design with rococo styled urn-shaped ceramic enclosure. Distinctly bass light, but impressively coherent	48x29 (diam)	50	85	•	106
▲ Cabasse Bisquine	600	<b>G+</b> 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	<b>G+</b> Large floorstanding three-way gives great sensitivity and bass extension with fine dynamic grip	100x30x36	25	92	•	122
▲ Canon S-30	180	<b>A+</b> 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	<b>A+</b> 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	<b>G+</b> A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	•	98
Castle Durham	250	<b>A</b> Like the slightly larger York, the very pretty presentation is not reflected in a similarly sweet sound	40x22x24	48	88	•	118
▲ Castle Pembroke	400	<b>A+</b> Comfortably recommended, a sweet smooth sound with good overall balance of engineering-based performance	55x37.5x30.5	46	88	•	31
▲ Castle Trent II	190	<b>A</b> 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	<b>G+</b> Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25	87	•	90
Castle York	349	<b>A+</b> 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	<b>A</b> 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 CS135	139	<b>A-</b> Compact hideway passive subwoofer lacks serious bass extension; for high sensitivity speakers only	52x19x34	45	88	•	128
▲ Celestion 15	389	<b>G</b> 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	<b>A</b> Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	102
Celestion SL12Si	629	<b>A</b> 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	<b>G</b> Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52	82	•	68
Celestion SL6Si	429	<b>A+</b> 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	<b>G</b> Splendid bass extension and fine panel-like openness and transparency, but dynamics and timing are suspect, balance very laid back.	100x21x31	<20	86	•	118
Creek CLS 10	119	<b>A</b> Almost identical to the Goodmans Maxim 3, this neat miniature is very competently engineered, but not desperately exciting	26x17x21	50	85	•	114
Dali 102	230	<b>A</b> 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

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PDS101/PD77 £499.99  
**CD PLAYERS MULTI**  
PDM602/M701 £269.99  
PDM301/M601 £449.99  
PDM3 180DISCS £499  
**CASSETTE DECKS**  
CTS220/320 £169.99  
CTS240/520 £249.99  
CTS620/620 £329.99  
S20S/C295 £679.99  
**TWIN CASSETTE DECKS**  
CTW420R/620R £199.99  
CTW601/MULTI £379.99  
**TURNTABLES**  
PL225/325 £119.99  
**GRAPHIC EQUALIZERS**  
GR555/777 £199.99  
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J30/J30M £749.99  
J40/J40M £949.99  
J50/J50M £1149.99  
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N35/N35M £499.99  
N37/N37M £579.99  
N39/N39M £999.99

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**PIONEER**  
**A300X** £199

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**DUAL**  
**TURNTABLES**  
C540 £79.99  
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C550S-2 £179.99  
C52215 £179.99  
C5505A £249.99  
C5705-1 £349.99

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A102 40 W.PCH £169.99  
A300X40 W.PCH £259.99  
A400 60 W.PCH £289.99  
A400X60 W.PCH £329.99  
C73 M73 £529.99  
A302R/502R £199.99  
A502 REMOTE £299.99  
VSA701S/D802S £499.99  
**TUNERS**  
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F301RD/502RD £199.99  
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V34 X2/SX102 £399.99  
V342R/5X102 £399.99  
**LAZER AND VISUAL**  
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**SPEAKERS**  
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# Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site in free space Sensitivity (dB)	Site close to wall Bass from (Hz)	Floorstanding	Issue No
Dawn Chorus FS	698	<b>G</b> Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	•	114
Dynaudio Contour1.3	1199	<b>G</b> 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	<b>G+</b> 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	<b>G+</b> Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25	85	•	98
▲ Faraday FS1	225	<b>A+</b> Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45	86	•	114
Faraday FS5	575	<b>G</b> 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	<b>A-</b> Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48	87	•	94
Genexa SE100	150	<b>A</b> Tandy-stocked miniature is attractively lively, coherent and communicative, could do with more grunt and lower coloration	28x15.5x19	50	84	•	110
▲ GLL Maxim	119	<b>A</b> Budget miniature offers well balanced strengths and few weaknesses at a very realistic price; a bit feeble	26x17x20	30	85	•	122
Harbeth HL Compact	584	<b>A</b> Clean, neutral sound lacks resolution and gives rather unobtrusive though well differentiated stereo.	52x27.2x28.1	65	87	•	59
Harbeth LS3/5A	539	<b>A</b> 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	<b>G</b> Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smeared sub-miniature	31x19x17	23	82	•	118
Heco Presto Superior 750	650	<b>A</b> Tall slim and attractive floorstander delivers a fine, even in-room balance but lacks transparency, coherence and dynamic drive	95x24x27	22	87	•	106
Heco Reflex 10	160	<b>A</b> Nicely balanced small bookshelf is a competent rather than exceptional package for the price, thanks to indifferent build.	32x21x23	30	90	•	102
▲▲ Heybrook HB1 S3	250	<b>G</b> Latest version of long established favourite delivers good liveliness and fine coherence for the price	47x29x24	30	88	•	98
▲ Heybrook Prima	130	<b>A+</b> 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	<b>G</b> Beautifully presented and built large bookshelf model with good sensitivity and a lively, forward sound	41x24x23	48	89	•	122
▲ Heybrook Sextet	1099	<b>G+</b> Engagingly coherent and a highly analytical, partly due to distinct and t always comfortable upper-mid forwardness	96x27x20	25	85	•	102
▲ Heybrook Solo	189	<b>A+</b> 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	<b>G</b> Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	118
Infinity Modulus	795	<b>A+</b> 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	<b>A</b> An engaging and lively sound from a prettily finished and substantial small bookshelf size model	36x23x23	50	87	•	98
Infinity Reference 20	300	<b>A</b> Well presented and balanced with good bass control, but somehow lacks convincing cohesion and agility.	46x27x24	27	88	•	102
▲ Infinity Reference 30	400	<b>G</b> Budget price floorstander has good overall balance and bass extension, but is rather coloured and uneven	86x27x24	25	89	•	122
Infinity Infinitesimal	499	<b>A</b> Cute but pricey amplified subwoofer is too small to deliver real bottom octave grunt	34x34x34	40	NA	•	128
Jamo 307	300	<b>A-</b> Beautifully styled bookshelf baby places more emphasis on presentation than basic engineering	32x18x27	48	86	•	122
Jamo Concert II	330	<b>A-</b> A respectable 'bookshelf' performer that needs free space siting but includes attractive cabinetwork and a neat grille	41x24x25	48	85	•	66
Jamo Concert V	500	<b>A</b> Compact, solid, nicely finished delivers unusually extended bass at the expense of lowish sensitivity; midband is laid back.	86x24x28	20	85	•	102
Jamo Concert VII	800	<b>A</b> Beautifully built, uses unusual double reflex bass system, unsuccessfully as far as low frequency resolution is concerned	96x28x31.5	25	87	•	94
▲ Jamo Cornet 50	150	<b>A+</b> Good value bookshelf size speaker has a rough and ready sound but good heart, engaging liveliness and fair timing	42x23x22.5	28	87	•	110
Jamo Silhouette	400	<b>A+</b> Tall, slim and rather elegant in its way, doesn't sound bad for a styling exercise, just a bit rich and polite	122x24.7x17	45	88	•	114
JBL Control 1 Plus	250	<b>A</b> 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	<b>G</b> Good power handling, decent transparency and deep but current hungry bass from a compact and solid enclosure	40x21x25.4	47	87	•	121
JBL ti1000	1500	<b>G</b> Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45	89	•	118
▲ Jordan JH400	590	<b>A+</b> 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	<b>A</b> 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	<b>A+</b> 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 Minim	79	<b>A-</b> 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	<b>A-</b> 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	<b>A+</b> 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	<b>A</b> 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	<b>A+</b> 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	<b>A-</b> This luxury variation on the redoubtable Sonata theme features a metal dome tweeter, and isn't the better for it	32x23x21	30	87	•	90
▲ JRT AD1	500	<b>G+</b> A fair share of cosmetic deficiencies do little to spoil the impressive coherence and timing	59.5x28x36	28	86	•	86
▲ JRT AD1 Micro	389	<b>G</b> Delightful life and coherence, gives surprising impression of scale; some aggressive tendencies but very open to system tuning	28x17x21	50	87	•	94
▲ Jordan JH400	504	<b>A+</b> Piano finish hexagon has single full range driver and controversial sound, with uneven balance but delightful mid coherence	33x24x30.5	50	83	•	106
▲ KEF 104/2	1595	<b>G+</b> 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	<b>A</b> Physically pretty and sonically competent but undistinguished bookshelf size model has good sensitivity but limited extension	34x20.5x26	45	87	•	106
KEF Q30	349	<b>A</b> Fine focus from Uni-Q driver, but lacks drive and time coherence; acoustically smaller than it looks	73x19x29	44	88	•	126
▲ KEF Q80	569	<b>A+</b> 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	<b>A</b> Generous floorstander has even balance and decent extension but fails to communicate excitement and involvement effectively	90x25x32	25	88	•	118
KEF AV1	2499	<b>G-</b> Awesomely built, finished and powerful subwoofer lacks the subtlety and unintrusiveness for top class hi-fi applications	43x56x50	<20	NA	•	128
Kammerzeit Ref Mini Monitor	425	<b>G</b> A surprisingly sweet sound with good pace and drive, but scale is restricted and presence a little dulled considering the price	27x17x24	50	85	•	94
▲ Kenwood LS-770E	260	<b>G</b> Impressively communicative bookshelf model has fine vigour, scale and dynamics, if not the smoothest sound around	48x27x25	25	89	•	106
▲ Kenwood LS-500G	500	<b>G</b> 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	<b>G</b> Liveliness, coherence and fine information retrieval justifies the odd looking moulded baffle construction	37x21x30	48	88	•	122
▲▲ Linn Index II/KuStone	374	<b>G</b> 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	<b>G+</b> Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforgiving	89x19x29	25	85	•	118
▲ Linn Kellidh	579	<b>G+</b> 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	<b>E</b> 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	<b>G+</b> 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	<b>A</b> All metal diaphragm and real wood at fair price; balance uneven — upper mid forward with suspect bass tuning	36x17x23	44	86	•	126
▲ Magneplanar MG1.4	1090	<b>G+</b> Offers a very crisp and articulate sound, particularly revealing of upper mid vocal details	155x8x57	40	88	•	72
Magneplanar SMGa	668	<b>A</b> Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85	•	46
Marantz DS110	200	<b>A+</b> Pretty near-miniature trades bass extension for sensitivity, delivering fine midband dynamics but little grunt	33x19.5x20.5	55	88	•	114



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Boston A60, was £139.95	NOW £89.95
Castle Warwick (BK), was £229.95	£129.95
Celestion 5000 WNT, was £1,099.95	£479.95
Celestion 3rd Dimension, was £169.00	£129.00
Jamo & Studio Power.....	TO CLEAR
Infinity Ref. 20, was £249.95	£149.95
Tannoy 615 mk1 (bk) was £749.99	£599.95
Tannoy 613 mk1 (bk) was £599.99	£469.95
Tannoy 603 Mk1, was £129.99	£94.95
W'dale DIA.IV was £119.95	£59.95
Mission 763i, 764i & 765i	TO CLEAR

**Amplifiers:**

Marantz PM60 (Ex-demo)	was £399.90	NOW £229.95
Marantz PM32 Amp, was £139.90	NOW	£99.95
NAD 2400 Power-amp, was £419.95	NOW	£359.95
NAD 2100 Power-amp, was £299.95	NOW	£259.95
NAD 1000 Pre-amp, was £199.95	NOW	£169.95
Pioneer A400 was £279.95	NOW	£219.95
Rotel RA940BX, was £249.95	NOW	£189.95
Rotel RB960BX Pwr-Amp	REDUCED TO CLEAR	£249.95
Rotel RA840BX4, was £249.95	NOW	£149.95
Sony TAF170, was £109.95	NOW	£84.95

**CD Players:**

Alwa XC750, was £199.95	NOW	£159.95
Alwa XC950, was £249.95	NOW	£199.95
Marantz CD72, was £399.95	NOW	£299.95
Pioneer PDS801, was £329.95	NOW	£269.95
Mission DAD5 was £299.95	NOW	£249.95
Rotel RCD955AX, was £279.95	NOW	£215.00
Sony CDP797, was £199.95	NOW	£149.95

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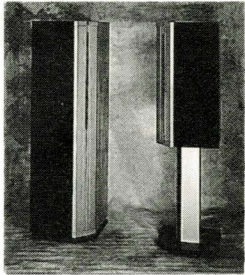
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### Suggested Systems

The following suggested system package includes the NAD 5120 Turntable. Alternative items: ie CD Player/Turntable/Cassette deck are available options.

SPEAKERS	JPW Sonata Wharfedale/DIA.4 Celestion 1 Mission 760i	Tannoy 603 Celestion 3 Boston HD5	Mission 761i BW DM600i Tannoy 605 AR 152 Infinity Ref/20	Tannoy 607 Mission 780 Boston HD8	BW DM610i Mission 762i Rogers LS2A2 Infinity Ref/40	Rogers LS4A2 BW DM620i Iadd £1000 Mission 763i Celestion 3/6000 Iadd £2000	T/T & C.D. PLAYER OPTIONS Awa XC750, £89.00 Denon DCD695, add £89.00 Denon DCD1290, add £209.00 Marantz CD42/2, add £99.00 Marantz CD52/2, add £120.00 Marantz CD7.2, add £199.00 NAD 502, add £99.00 Pioneer PDS801, add £189.00 Dual CS503-2, add £60.00 Dual CS505-4, add £99.00 Project 1, add £60.00 Thorens TD280IV, add £120.00 Systemdek 11X/900, add £329.00 Many others available on request
AMPS							
Kenwood KA3020	£295.95	£309.95	£345.95	£369.95	£409.95	£429.95	
Kenwood KA5040R	£349.95	£369.95	£419.95	£429.95	£459.95	£482.95	
Marantz PM40SE	£316.95	£335.95	£379.95	£399.95	£429.95	£460.95	
Celestion 3rd Dimension	£349.95	£369.95	£419.95	£429.95	£459.95	£489.95	
Pioneer A300X	£409.95	£419.95	£459.95	£479.95	£509.95	£539.95	

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**Amplifiers:**

Alwa XA950	£229.95
Denon PMA480R	£219.95
Harman Kardon HK6250	£279.95
Marantz PM44SE NEW!	£199.95
NAD 304	£239.95
Pioneer A400X	£299.95
Rotel RA935BX	£199.95
Technics	STOCKED
Yamaha AX570	£289.95

**CD Players:**

Alwa XC300	£149.99
Alwa XC750	£199.95
Denon DCD595	£179.99
Denon DCD1290	£329.99
Kenwood DP2050	£169.95
Kenwood DP7050	£349.95
Marantz CD53	£199.90
Marantz CD63	£249.90
Marantz CD52SEmk2	£299.95
NAD501	£179.95
NAD 502	£219.95
Pioneer PDM602	£269.95
Rotel RCD965BX	£299.95
Rotel RCD965BX Discrete.	£375.00
Technics SLP5620A.	£199.95
Yamaha CDX570	£239.95

**Cassette Decks:**

NAD 6100, was £299.95	NOW £259.95
Kenwood KX5030, was £199.95	NOW
Yamaha KX.360, was £199.95	£149.95
NOW	
Alwa ADF410	£169.95
Alwa ADF810 3HD	£119.95
Denon DRM540	£229.99
Denon DRS810 3HD	£159.99
Denon DRW760 Twin	£299.99
Kenwood KX-5050	£249.99
Marantz SD53	£229.99
Marantz SD63	£269.90
Marantz SD415	£209.90
Nakamichi DR3	£349.95
NAD 602	£199.95
Sony TCK-611S 3HD	£289.95
Technics	STOCKED
Yamaha KX-260, 360, 650	TO CLEAR

**Tuners:**

Denon TU260L	£119.99
Denon TU580RD/RDS	£219.99
Marantz ST53	£169.90
Marantz ST40/50L	TO CLEAR
NAD 402	£159.95
Rotel RT930AX	£175.95
Rotel RT950BX	£225.95
Sony STS311LB	£179.95

**AV Amps/Receivers:**

Denon AVC3020	£729.99
Denon DRA345R	£249.95
Denon DRA645RD/RDS	£319.95
Kenwood KRWB500	TO CLEAR
Kenwood KRA4050	£229.95
Kenwood KR6050 RDS	£349.95
Kenwood KR7050 RDS	£399.95
Marantz PM700AV	£449.90
Marantz SR53 & 63	STOCKED
NAD 705	£329.95
NAD701	£259.95
Yamaha RX V470	£399.95
Yamaha DSP E200	£369.95
Yamaha DSP A500	£449.95
Yamaha DSP A1000	£899.95

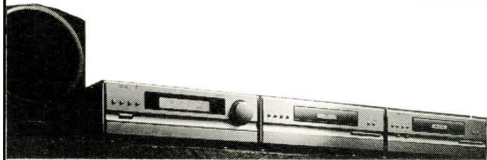
**Turntables:**

Rega 250, was £219.95	NOW £179.95
Dual CS430	T.B.A.
Dual CS503-2	£179.95
Dual CS505-4	£229.95
NAD5120	£119.95
NAD 533-Rega 250	£199.95
Project 5.0rt. 510cart.	£129.95
Project 1.0rt. 510 cart.	£169.95
Project 2.0rt.MCI cart.	£249.95
Soundlab & KAM (DISCO)	STOCKED
Systemdek 11X900 + RB250	£329.95
Systemdek 11XE900 exc T/A	£329.95
Technics SL1210 Mk2	STOCKED
Thorens TD180 - AT91	£179.95
Thorens TD166 V1 - Rega RB250	£299.95
Thorens TD280 IV + AT95E	£269.95

**Loudspeakers:**

Bose AM3 Mk2	STOCKED
Bose AM5 Mk2	STOCKED
B&W DM600i, 610i, 620i	STOCKED
Boston HD3, 5, 7, 8, 9/SW10	STOCKED
CELESTION	STOCKED
Cenwin Vegg. AT.DC&VS	STOCKED
JamoPro 200/300/400	STOCKED
Mission 760i	£129.90
Mission760i/SE	£149.95
Rogers LS2A/2	£229.95
Rogers LS8A	£499.95
Tannoy SIXES Mk 2	STOCKED

And many others, call for further details!



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## Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site close to wall Sensitivity (dB) Bass from (Hz)	Site in free space Sensitivity (dB)	Floorstanding	Issue No.
Marantz DS220	300	A+ Nicely shaped and presented large bookshelf model sounds competent rather than inspired; a touch too heavy	37x23x26	50 88	•	•	122
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 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
▲ 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 764i	480	A Generous and handsome floorstander looks fine material value for money, but good scale sound has lazy tendencies	89x25x32	22 86	•	•	118
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 751	300	A Attractive luxury miniature has great sonic potential, but our review samples have been marred by sample variations	32x17x27	45 86	•	•	126
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 Classic 20	450	A+ Luxuriously finished, beguiling mid transparency, bass is altogether less convincing	37x22x27	45 86	•	•	102
Mordaunt-Short SW-1	150	A- Prettily finished and inexpensive passive subwoofer is only really useful with sub-miniature speakers	24x58x25	40 85	•	•	128
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 Fidelity MC-3	400	A+ Solid and authoritative large bookshelf model gives fine stereo and decent dynamic drive but balance is rather shut in	47x26x28	25 88	•	•	118
▲ NAD 804	320	A+ Good value compact floorstander sounds lively and coherent, but quite coloured due to uneven balance too	75x20x26	25 89	•	•	126
▲ 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
Nobis DM7	560	G Pretty US bookshelf model has more than enough speed, timing and coherence to make up for a measure of coloration	38x21.5x28.5	25 85	•	•	110
▲ 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
Philips FB820	470	A Big-but-less-than-beautiful three-way is well enough balanced but lacks communication skills in the time domain	86x27x35	28 87	•	•	98
▲ Philips FB825	700	G Generous sounding and impressively uncongested, loudness and bass extension don't quite match plasticity looks	110x29x41	25 88	•	•	90
Pioneer S-4UK	250	A+ Carefully developed minimalist audiophile design has some vigour but suffers an intrusive upper mid peak	37x21x28	50 87	•	•	122
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
QLN Model One	700	A Model One exaggerates the Signature's rich and heavy midbass and lacks its velvet smoothness	35x25x27	28 85	•	•	82
QLN Signature	1100	G Luxury compact has a rather laid back and 'heavy' sound, but coloration is low and stereo imaging very good	37x18x36	30 83	•	•	78
▲ 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
▲ 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	405	G Very compact floorstander with integral stand has serious coherence and dynamics, but a measure of brightness and untidiness	84.5x20x30	30 86	•	•	110
▲▲ 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
▲▲ REL Strata	499	G+ Outstandingly value and performance active subwoofer adds serious bass unintrusively to any small speaker system	52x42x31	<20 NA	•	•	128
▲▲ 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 Pricey LS3/5A-derived wall-mount sub-miniature is excitingly coherent if a bit lightweight; no real loudness capabilities	31x19x17	30 83	•	•	118
▲ Rogers Studio 1a	599	G- Classic BBC monitor sound sensitively updated - transparent and natural with fine stereo, but a touch 'heavy' in balance	63.5x30.5x30.5	36 87	•	•	66
▲ 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 Darius	1895	G+ Provides an exceptionally impressive combination of transparency and delicacy with fine information retrieval and speed	47x27x40	20 82	•	•	86
Royd Topaz	173	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

# Audio Designs



3/4/4



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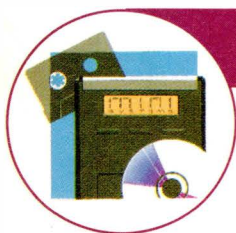


OPEN LATE THURSDAY TILL 8PM



# Loudspeakers continued

Product	EPrice	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
Royd Abbot	666	<b>A+</b> Engaging and dramatic dynamics and fine transient coherence are hampered by a rather coloured mid-forward balance	83x20x34	43	88	• •	118
Ruark Swordsman Plus	299	<b>A</b> Real wood variation on the Swordsman theme looks and measures rather better than it sounds	38x20x28	27	84	•	98
Ruark Templar	479	<b>A+</b> 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	<b>G</b> Less ideologically committed than some compact floorstanding rivals, its key strength lies in fine all round compromise	86x25x31	30	86	• •	118
SD Acoustics Ribbon	2950	<b>G+</b> 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
▲ SD Acoustics SD1	1650	<b>G+</b> 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 SD3	399	<b>G</b> 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 SD4	699	<b>G</b> Tall slim floorstander has fine balance, good bass extension and lovely open midband transparency	100.5x20x30.5	25	85	• •	114
Sequence 30	200	<b>A</b> Radical slimline hang-it-on-the-wall design has performance comparable to a typical miniature, with reasonable overall balance	87x25x7	50	85	•	114
Shahinian Arc	1062	<b>G</b> Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	• •	110
Snell JIII	770	<b>G</b> 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	<b>G</b> Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	•	102
Spica Angelus	1295	<b>A</b> 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	<b>G</b> 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	<b>G</b> 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
▲ TDL RTL3	400	<b>A+</b> 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	<b>G</b> 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	<b>G</b> 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	<b>G+</b> Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	• •	118
▲ TDL Reference Monitor	1999	<b>G+</b> 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 607 II	220	<b>A</b> Large bookshelf, smart hexagonal box has fine bass for the price, but treble sounds rather shut in	50x32x24	25	88	•	122
▲▲ Tannoy 609 II	295	<b>A+</b> Large bookshelf size model with dual concentric driver has fine balance and scale with low coloration	50x32x24	22	86	•	126
▲ Tannoy Westminster	6000	<b>G+</b> 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	180	<b>A</b> Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	•	98
▲ Technics SB-RX50	650	<b>A+</b> A smooth and well balanced loudspeaker, its minor weakness being a mildly excessive low bass	48x30x26	40	86	•	46
▲ Thiel SCS	1069	<b>G+</b> 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	<b>G</b> 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	<b>G</b> Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	31x16.5x23	28	86	•	122
Vandersteen 2Ce	1395	<b>G+</b> 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	<b>P</b> 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 425	200	<b>A+</b> Large bookshelf size 505 heir shows fine control and a conservative balance ideally suited to quality systems on a budget	40x27x26	45	87	•	118
▲ Wharfedale 515	260	<b>G</b> An update on the 505 theme, this is still more evenhanded, with better bass extension and smoother treble.	40x25.5x30	28	85	•	106
Wharfedale 517	400	<b>A</b> Half as big again as the 515, should offer an improvement, but somehow has a less effective overall subjective balance	53x26.5x34	25	86	•	110
▲▲ Wharfedale Delta 30.2	100	<b>A</b> Has a bigger main driver than many, and so packs a bit more welly and loudness. Coloration is rather obvious, but timing is good	38x22x17	48	88	•	98
▲▲ Wharfedale CRS3	89	<b>A+</b> 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	<b>A</b> This miniature is smoother than most, but rather stodgy with it, inspiring little enthusiasm among our listeners	27x18x20	50	86	•	114
Yamaha YST-SW50	199	<b>A</b> Bargain price amplified subwoofer is too small for serious bass freaks, but does a fair job for the price	48x21x33	35	NA	• •	128
▲ Yamaha NS 1000M	1200	<b>G+</b> Living up to its monitor label, and tonally well suited to digital material, it's superbly crafted and capable of high levels	67.5x37.5x32.5	40	90	•	46
▲ Zyp A1	199	<b>A+</b> 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



## Stack systems

Stack 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.

## Stack systems

Product	EPrice	Comments	Size: HxWxD (cm)	Rated output	Remote control	Loudspeakers	Turntable	Issue No.
▲ Denon D110	870	<b>G</b> Nearly hi-fi from pretty but pricey silver stack; richer, fuller speakers would help	37x27x33	40	30	•	o	125
Goodmans System 700	735	<b>A</b> Separates flexibility and upgraeability in remote midi package; anodyne sound	69x35x37	50	20	• •	•	125
▲ JVC Adagio G7	799	<b>A</b> Wondrous 2-speaker surround movie sound system, but a very uneven package elsewhere. Four by 20W output	42x28x28	20	40	• •	•	125
Philips FW91	999	<b>A+</b> Good looking and performing package rendered expensive by inclusion of DCC deck	37x26x32	60	30	•	•	125
▲ Pioneer N53M	549	<b>A+</b> Cheap, occasionally nasty but undeniably cheerful and entertaining if horrid speakers are discarded	36x26x28	30	24	• •	•	125
▲ Technics SC-CH950	1000	<b>A+</b> Classy if rather bland allrounder includes useful Dolby Pro-Logic AV capabilities	42x27x34	60	39	• •	•	125

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# 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 ampli-

er 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.

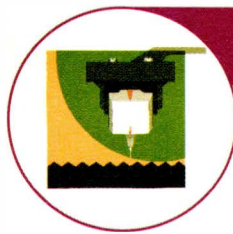
Tuners come in two basic types. Analogue models tune gradually (and usually manually) across the bands, and can have analogue or digi-

tal displays; they are often preferred for sound quality, and are certainly best for AM bands. Digital tuners offer convenient automatic tune facilities and pre-set memories.

The 'Presets' column heading shows how many different frequencies a tuner can memorise for instant access. FM, LW and MW show which wavebands it can access. 'Signal strength meters' are useful for aerial alignment. 'Automatic tuning' means that a tuner can seek out signals for you.

## Tuners

Product	£Price	Comments	Presets	Signal strength meter			Automatic tuning		Issue No.	
				FM	LW	MW	Manual 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
▲ Akai AT-93L	280	G+	By AM standards presentable (good) while FM delivers the goods	20	•	•	•	•	•	65
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 woodiness to the sound.	16	•			•		109
Creek T40S3	250	A	Analogue tuner. Sample was hampered by an obvious bass 'hump', production units are said to be cured		•			•		93
▲▲ 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		•			•	•	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 convertor 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		•			•		50
▲ Quad FM4	424	G+	Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•			•	•	50
Quad 66	519	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



# 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 – cartridges

Product	£Price	Comments	Arm effective mass (g)	Output	MM		MC	Issue No.
					MM	MC		
▲▲ 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

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10 X TDK E-60HS	£1699
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10 X JVC E-60SX	£1699
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10 X TDK E-120HS	£1799
10 X TDK E-120HS (40+)	£165
10 X JVC E-120SX	£1999
10 X JVC E-120SX (100+)	£160
10 X KONICA E-120VF	£1700
10 X KONICA E-120VF (50+)	£160
10 X POLAROID E-120HD	£1515
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10 X TDK E-180 (200+)	£165
10 X JVC E-180SX	£1699
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10 X KONICA E-180VF	£1799
10 X KONICA E-180VF (100+)	£165
10 X POLAROID E-180HD	£1715
10 X SCOTCH E-180EG+	£1999
10 X BASFE-180 VISION	£1699
10 X BASF E-180 VISION (100+)	£155
10 X FUJIE-180HG	£2150
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10 X MAXELLE-180EX	£1799
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10 X TDK E-195HS	£1899
10 X TDK E-195HS (100+)	£170
10 X JVC E-195SX	£1799
10 X JVC E-195SX (100+)	£165
10 X SCOTCHE-195EG+	£2099
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10 X POLAROID E-195HS (50+)	£160

## E-210 STANDARD G.

10 X BASFE-210VISION	£1999
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10 X TDK E-240HS	£2390
10 X TDK E-240HS (100+)	£2300
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10 X JVC E-240SX	£2299
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10 X 3M E-30HG	£1800
10 X FUJI E-30SHG D/C	£2400
10 X MAXELLE E-30GX BLK	£1600
10 X MAXELLE E-30GX BLK	£2300

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10 X SONY E-60 (50+)	£175
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10 X MAXELLE E-120HG	£1999
10 X MAXELLE E-120HG (100+)	£185
10 X MAXELLE E-120HG BLK	£2900
10 X MAXELLE E-120GX BLK	£2200
10 X FUJI E-120SHG D/C	£2700
10 X JVC E-120HG	£2389
10 X POLAROID E-120XHG	£1615

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10 X TDK E-180HG	£2499
10 X TDK E-180HG (80+)	£235
10 X SONY E-180V	£1799
10 X SONY E-180V (100+)	£165
10 X FUJI E-180SHG D/C	£2800
10 X JVC E-180EG	£2399
10 X POLAROID E-180HG (100+)	£235
10 X KONICA E-180XHG	£2500
10 X POLAROID E-180XHG	£1815
10 X SCOTCHE-180EG+	£2699
10 X BASF E-180GX	£2399
10 X BASF E-180GX (40+)	£220
10 X MAXELLE E-180GX BLK	£2400
10 X MAXELLE E-180GX BLK	£2599
MAXELLE E-180GX (100+)	£220

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10 X TDK E-240HG	£3099
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10 X SONY E-240V (50+)	£246
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10 X POLAROID E-240XG+	£2515
10 X SCOTCH E-240XG+	£3699
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10 X TDK E-180 HIFI	£2699
10 X TDK E-180 HIFI (100+)	£270
10 X SONY E-180VHG	£3450
10 X SONY E-180VHG (40+)	£335
10 X JVC E-180 HIFI PRO	£3099
10 X JVC E-180 HIFI PRO (100+)	£280
10 X POLAROID E-180HIFI	£2200
10 X POLAROID E-180HIFI (100+)	£205
10 X BASFE-180 HIFI PROF	£2899
10 X BASF E-180 HIFI PROF (40+)	£280

## E-240 HI FI TAPES

10 X TDK E-240 HIFI	£3699
10 X TDK E-240 HIFI (100+)	£335
10 X SONY E-240VHG	£4435
10 X SONY E-240VHG (40+)	£435
10 X JVC E-240 HIFI PRO	£4099
10 X BASFE-240	£3520

## E-240 STANDARD G.

10 X TDK E-240HS	£2390
10 X TDK E-240HS (100+)	£2300
10 X TDK E-240HS (200+)	£210
10 X JVC E-240SX	£2299
10 X JVC E-240SX (100+)	£200
10 X KONICA E-240VF	£2299
10 X BASF E-240 VISION	£2299
10 X BASF E-240 VISION (100+)	£200
10 X POLAROID E-240HD	£2399
10 X SCOTCH E-240EG+	£2799
10 X FUJI E-240HG	£2799
10 X MAXELLE E-240V	£2499

## E-300 STANDARD G.

10 X BASF E-300ED	£5000
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## E-30 EXTRA HIGH G.

10 X JVC E-30EG	£1699
10 X JVC E-30HG	£150
10 X KONICA E-30HG	£1999
10 X 3M E-30HG	£1800
10 X FUJI E-30SHG D/C	£2400
10 X MAXELLE E-30GX BLK	£1600
10 X MAXELLE E-30GX BLK	£2300

## E-60 EXTRA HIGH G.

10 X SONY E-60 PREMIUM	£2100
10 X SONY E-60 (50+)	£175
10 X JVC E-60HG	£580
10 X KONICA E-60HG	£2050
10 X 3M E-60HG	£1899
10 X FUJIE-60SHG	£2600
10 X MAXELLE-60GX BLK	£1900
10 X MAXELLE E-60GX BLK	£2600

## E-90 EXTRA HIGH G.

10 X SCOTCH E-90 EG+	£2200
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## SCOTCH

10 X E-120EG PRO	£5000
10 X E-180EG PRO	£5900
3M BROADCAST QUALITY VHS	
10 X E-30 ALBUM BO	£4800
10 X E-60ALBUM BO	£5400
10 X E-120ALBUM BO	£6000
10 X E-180ALBUM BO	£7200
10 X E-30SG D/C	£5000
10 X E-120SG D/C	£5800
10 X E-180SG D/C	£6400
10 X E-30R PRO	£5100
10 X E-120R PRO	£5800
10 X E-180R PRO	£6100

## MD MINI DISC

10 X MD W60	£6000
10 X MD W60 (50+)	£585
10 X MD W74	£7500
10 X MD W74 (50+)	£730
10 X MD XG60	£5600
10 X MD XG60 (50+)	£540
10 X MD XG74	£6700
10 X MD XG74 (50+)	£6500
10 X MD 60 (50+)	£535
10 X MD 74	£6999
10 X MD 74 (50+)	£675
10 X MD 60	£3500

## 3mm CAMCORDER TAPES

10 X P5-60MP	£3699
10 X P5-90MP	£3499
10 X P5-95MP	£5500
10 X P5-110MP	£6200
10 X P5-120MP	£5800
10 X P5-60HG	£4800
10 X P5-60HG (TRAVEL)	£3500
10 X P5-60HG (D/C)	£320
10 X P5-90HG TRAVEL	£4200
10 X P5-90HG (30+)	£410
10 X P5-120HG	£8000
10 X P5-90SPORT	£6800
10 X P5-30HS	£2599
10 X P5-60HS	£2699
10 X P5-90HS (NEW)	£2699
10 X P5-100HS (OLD)	£2999
10 X P5-30EHS	£3199
10 X P5-60EHS	£3499
10 X P5-90EHS (OLD)	£3600
10 X P5-90EHS (NEW)	£4199
10 X P5-120EHS	£5999
10 X P5-30VH	£2200
10 X P5-60VH	£2850
10 X P5-90VH	£2999
10 X P5-60MP	£2799
10 X P5-90MP	£2999
10 X P5-30VH M	£2599
10 X P5-60VH M	£3000
10 X P5-90VH M	£2999
10 X P5-60GX	£3499
10 X P5-90GX	£3899
10 X P5-110HG	£599
10 X P5-30S D/C	£2800
10 X P5-60S D/C	£2900
10 X P5-90S D/C	£3300
10 X P5-30S D/C	£3600
10 X P5-60S D/C	£3900
10 X P5-90S D/C	£4300
10 X P5-120S D/C	£5400
10 X P5-30HG (NEW)	£2200
10 X P5-60HG (OLD)	£4199
10 X P5-90HG (NEW)	£5999
10 X P5-120HG	£2200
10 X P5-60VH	£2850
10 X P5-90VH	£2999
10 X P5-60MP	£2799
10 X P5-90MP	£2999
10 X P5-30VH M	£2599
10 X P5-60VH M	£3000
10 X P5-90VH M	£2999
10 X P5-60GX	£3499
10 X P5-90GX	£3899

## FREE CLEANER JVC WITH EVERY 10 PACK OF SVHS-C OR VHS-C CAMCORDER TAPES

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10 X EC-30SHG	£2300
10 X EC-30 HIFI PRO	£2999
10 X EC-45 HIFI	£3699
10 X EC-30SHG D/C	£2450
10 X EC-45SHG D/C	£3099
10 X EC-30HG	£1999
10 X EC-45HG	£2800
10 X EC-45HG BLK	£3000
10 X EC-30 PRO	£1300
10 X EC-30EHS	£1799
10 X EC-45EHS	£2500
10 X EC-45HG D/C	£3099
10 X EC-30HG	£1999
10 X EC-45HG	£2800
10 X EC-45HG BLK	£3000
10 X EC-30 PRO	£1300
10 X EC-30EHS	£1799
10 X EC-45EHS	£2500
10 X EC-45 PRO	£4099

## VHS-C CAMCORDER TAPES

10 X EC-30SHG	£2300
10 X EC-30 HIFI PRO	£2999
10 X EC-45 HIFI	£3699
10 X EC-30SHG D/C	£2450
10 X EC-45SHG D/C	£3099
10 X EC-30HG	£1999
10 X EC-45HG	£2800
10 X EC-45HG BLK	£3000
10 X EC-30 PRO	£1300
10 X EC-30EHS	£1799
10 X EC-45EHS	£2500
10 X EC-45 PRO	£4099

## VHS-C VIDEO TAPES

10 X SE-30IG	£389
10 X SE-60IG	£4199
10 X SE-120IG	£4699
10 X SE-180IG	£5500
10 X SE-240IG	£6900
10 X SE-180IG (PROF)	£7099
10 X SE-180	£6199
10 X SE-240	£7699
10 X SE-30IG	£389
10 X SE-60IG	£4199
10 X SE-120IG	£4699
10 X SE-180IG	£5500
10 X SE-240IG	£6900
10 X SE-180IG (PROF)	£7099
10 X SE-180	£6199
10 X SE-240	£7699

## SUPER VHS PRO DOUBLE COATING

10 X SE-30 PRO	£320
10 X SE-60 PRO	£370
10 X SE-120 PRO	£6000
10 X SE-180 PRO	£6900
10 X SE-240 PRO	£8499

## HITS PROFESSIONAL RANGE

10 X SE-30 PROF	£7700
10 X SE-60 PROF	£8600
10 X SE-120 PROF	£9700
10 X SE-180 PROF	£11400
10 X SE-30	£339
10 X SE-60	£3799
10 X SE-120	£4699
10 X FSE-180 D/C	£5499
10 X SE-180	£6200
SE-180 (20+)	£575

## 3M MASTER BROADCAST S-VHS

10 X SE-30Q	£7200
10 X SE-60	£8600
10 X SE-120	£9600
10 X SE-180	£11400
10 X SE-60R/S	£4900
10 X SE-180R/S	£5600
10 X SE-180R/S (20+)	£520
10 X SE-240R/S	£6100
SE-240R/S (20+)	£700</

# Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲▲ Audio-Technica AT-95E	20	<b>A</b> Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ Audio-Technica OC-10	320	<b>G+</b> Good treble and good detail too, but some congestion and coloration reduces its informativeness.	4-12	L		•	103
▲ Audio-Technica OC-5	130	<b>G</b> 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	<b>G+</b> Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge	8-16	L		•	84
Audioquest AQ 7000	1295	<b>G+</b> 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	<b>A+</b> 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	<b>G</b> 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	<b>G</b> 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	<b>VG</b> Uncolored, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	298	<b>VG</b> Clear, detailed, neutral and generally very informative - excellent .	6-18	L		•	91
▲ Dynavector DV10X IV	138	<b>A+</b> Fine sounding and realistically priced, damping is recommended to ensure successful tracking ability	8-18	N		•	48
▲ Dynavector XX-1	698	<b>G+</b> 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	698	<b>VG</b> 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	<b>G</b> 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	<b>G</b> 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	<b>G+</b> Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
▲ Glanz GMC-10LX	80	<b>A+</b> 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	<b>G+</b> Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	<b>G</b> Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	<b>G</b> 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	<b>G</b> Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	<b>A</b> 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	<b>G</b> 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	<b>G-</b> More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	<b>G</b> Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
▲ Goldring Excel	549	<b>G</b> 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	<b>G+</b> 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
▲ Kiseki Blackheart	1995	<b>G</b> Demonstrated refined poise and a delicate but at once potent security, however, the price did seem a little on the high side	6-16	L		•	60
▲ Kiseki Blue Goldspot	499	<b>G+</b> Good bass and imaging, but hints of spit and coloration let the side down slightly	8-15	L		•	84
▲ Kiseki Lapis Lazuli	5000	<b>G+</b> Combining very sensible design concepts at a silly price, combines the detail of the MC3000 and the fluidity of the Clearaudios	4-12	L		•	60
▲ Kiseki Purpleheart Sapphire	899	<b>G+</b> Rare, beautiful to look at and sweet to listen to, our review of this high-flyer conjured up images of Japanese art	5-14	L		•	48
▲ Linn K5	49	<b>A+</b> Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	<b>G</b> 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	<b>A+</b> Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
▲ London Super Gold	339	<b>A-</b> Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Militek Aurora	299	<b>G+</b> An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲ Nagaoka MP10	19	<b>A</b> High frequencies sounded "shut-in" with this spherical-stylus model, but mid and mass were energetic, bouncy and punchy	5-13	N	•		48
▲▲ Ortofon 510	30	<b>G+</b> For the price, a good blend of virtues - weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	50	<b>A+</b> Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	80	<b>G+</b> Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
▲ Ortofon 540	100	<b>A</b> 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	80	<b>G</b> "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	100	<b>G+</b> 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	<b>G</b> 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	900	<b>E</b> 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	<b>G</b> Review sample could not be fully run-in, limited tracking ability, bright and forward sound, though imaging is excellent	12-20	VL		•	91
▲ Ortofon Quartz	140	<b>G</b> Lively, quite detailed, and a touch bright, the Quartz has many qualities of the much dearer Quasar	3-12	L		•	91
▲ Ortofon Quasar	350	<b>G+</b> Many of the qualities of the MC3000, although a touch bright. Good detail and delicacy	8-15	L		•	84
▲ Ortofon Quattro	210	<b>G+</b> Undoubtedly a competent performer. Generally neutral, but can be edgy and bright in loud passages.	6-18	L		•	103
▲ Rega Bias	34	<b>A+</b> Difficult to mount in some arms due to its shallow build, the bias offers a gentle, refined SQ	4-10	N	•		67
▲ Rega Elys	74	<b>G</b> Clearly superior to the Bias, despite their common heritage, the Elys is both more detailed, accurate and musically convincing	8-15	N	•		67
▲▲ Revolver	20	<b>A</b> This modified AT-95E enjoys a very lively mid and treble even if the bass is somewhat 'slower' in comparison. A firm budget buy	8-16	N	•		67
▲ Roksan Corus Black	130	<b>G</b> Recognisably related to Corus Blue, but distinctly more civilised and smoother.	7-12	N	•		91
▲ Roksan Corus Blue	75	<b>G</b> Roksan-specified modified Goldring 1012; slight harshness detracts from otherwise good sound.	7-12	N	•		91
▲ Shure ME97HE	55	<b>A+</b> 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	<b>A+</b> 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
▲ van den Hul Grasshopper III GLA	3200	<b>E</b> Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	6-10	L		•	122
▲ van den Hul MC One	975	<b>G+</b> 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 Super	1100	<b>G+</b> 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	<b>G+</b> 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	<b>G+</b> 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	<b>G+</b> If woody midrange coloration could be tamed, the excellent imaging and admirable security would make it excellent	7-15	L		•	103

# WIN a Hi-Fi System worth £2,300



The British Federation of Audio is holding its Annual **British Hi-Fi Awards** in April at a gala dinner in aid of the Terence Higgins Trust. These awards provide an opportunity for you to vote and give recognition to some of the world's finest hi-fi equipment.

To mark this occasion we are giving away a hi-fi system comprising Arcam Delta 270 CD player, Naim 92/90 pre/power amplifiers and Royd Abbott loudspeakers, complete with Chord Company interconnects, worth over £2,300!

To enter simply fill in the voting form on this page and return it to us by 31st March 1994.

**RULES:** Entries must be on an official voting form and must bear your own name and address. The judges will award the prize to the first entry drawn after the closing date. The prize must be accepted as offered - there is no cash alternative. If the winner is under 18, parental consent must be obtained before the prize is awarded. Forms received after the closing date will be disqualified. The decision of the judges is final. No responsibility can be accepted for entries lost or delayed in the post. No correspondence can be entered into. Voting is open to all readers resident in the UK. The winner will be notified by post.



## VOTING FORM

Please tick one product in each section, and then answer the questions below

### CD PLAYERS

- Rotel RCD965BX £300.00
- Pioneer PD-S802 £349.95
- Arcam Alpha 5 £449.90
- Teac VRDS-10 £769.95
- Quad CD67 £790.00
- Naim Audio CDI £1677.00

### TAPE RECORDERS

- Sony TCK 611S Cassette Deck £299.99
- Arcam Delta 100 Cassette Deck £849.90
- Pioneer D-07 Digital Tape Recorder £1149.95

### TUNERS

- NAD 402 £159.95
- Sony STS311 RDS £199.99
- Rotel RT950BX £225.00
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- Audiolab 8000T £700.00

### INTEGRATED AMPLIFIERS - up to £300

- NAD 302 £169.95
- Rotel RA930AX £175.00
- Arcam Alpha 5 £229.90
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- Aura VA100 £299.00

### INTEGRATED AMPLIFIERS - over £300

- Arcam Delta 290 £449.90
- Audiolab 8000A £450.00
- Naim Audio NAIT 3 £499.00

### LOUDSPEAKERS - under £200

- Wharfedale Modus Micro £99.90
- Jamo Cornet 30 III £99.99
- Celestion 3 MkII £129.00
- Solid Team Mini Monitor £129.00
- Mordaunt-Short MS10 £129.99
- Canon S-30 Compact Speaker £179.95

### LOUDSPEAKERS - from £201 - £400

- Canon V-100 Wide Dispersion £209.95
- Celestion 7 MkII £219.00
- Royd Minstral £229.00
- Pioneer S-4UK £249.95
- Mission 751 £299.90
- KEF Q30 £349.00

### LOUDSPEAKERS - over £400

- Monitor Audio 14/Gold II £469.99
- Castle Howard £999.00
- KEF Model 103/4 £1199.00
- Ruark Equinox £1749.00

### CENTRE CHANNEL SPEAKERS

- Canon SC10 £129.95
- B&W 600IFS £179.00
- Jamo Centre 200 £199.99
- KEF Model 100 £349.00

### DIGITAL

- Celestion DLP600 Digital Sound Processor £349.00
- Audiolab 8000DAC D/A Converter £750.00
- Lexicon CP3 Digital Surround Sound Processor £3295.00

Which hi-fi or music magazine have you found most informative on hi-fi?

Which journalist has written the most thought provoking article on hi-fi?

Which is your favourite disc of 1993?

Name: \_\_\_\_\_

Address \_\_\_\_\_

Post Code: \_\_\_\_\_

Please return this form to:  
The **British Federation of Audio**, Landseer House, 19 Charing Cross Road, London WC2 0ES - to arrive no later than 31st March 1994. **HFC**





# Turntables and tonearms

Specialist turntables are what high fidelity sound is all about. CD may offer silent back-grounds 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' which relates to cartridge compliance 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, and better sound.

## Turntables - integrated

Product	£Price	Comments	Suspended subchassis	Manual	Automatic	Cartridge	Belt drive	Electronic PSU	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	<b>G+</b> 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	<b>A</b> 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	<b>A</b> Consistent sounding and well isolated turntable. It is slightly lacking in balls, compensates with a consistently unmuddled presentation	10			•	•	•	103
▲ Dual CS430	120	<b>A-</b> Ragged, sometimes unpleasant cartridge mixes with a modest pleasing player in a very sharply priced package	5			•	•	•	67
▲ Kuzma Stabi/Stogi Reference	2000	<b>G+</b> Beautifully made solid oak plinth, the Stabi also sounds very clear, detailed and extended. Stogi Reference is very capable.	12	•	•			•	91
▲ Linn Axis/Akito	535	<b>A+</b> A neat, attractive and well-made package which delivers a rather harsh sound with a 'one-note' effect in the bass	10	•	•			•	79
▲ Linn Basik	299	<b>A+</b> 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	<b>G</b> 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	<b>G+</b> The classic reference is improved by the Lingo but charming character remains. Ekos is well made and suited to many decks	9	•	•			•	91
▲▲ Rega Planar 2	185	<b>G</b> A remarkable product at the price, surprisingly articulate and confident	11.5		•			•	48
▲▲ Rega Planar 3	250	<b>G</b> 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
▲ Revolver Rebel	185	<b>G-</b> Quite lively and detailed but not the strongest on subtlety, with slightly lumpy bass. Motor breakthrough audible	12	•	•			•	91
▲ Roksan Radius/Tabriz zi	740	<b>G</b> 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	<b>A-</b> 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
▲ Technics SL-DD33	150	<b>A</b> As with the QD33 though better value. P-mount cartridge	7.5			•	•		48
▲ Technics SL-QD33	180	<b>A</b> Quartz controlled version of the DD is short on sound quality but not features. But it did have fair focus and some depth	7.5			•	•	•	48
▲ Thorens TD-3001/TP90SF	760	<b>G</b> Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas		•	•			•	103
▲ Thorens TD166 V/UK/RB250	280	<b>A-</b> Refined and articulate sound with well focused imagery, suitable for use with good MM and budget MC cartridges	11.5	•	•			•	103
▲ Thorens TD2001	650	<b>G-</b> Similar to TD320 but much dearer - why? Sound is comfortable but not very detailed	15	•	•	•			91
▲ Voyd Reference	5950	<b>E</b> Voyd's flagship, equipped with three substantial motors, a Lexan platter and brute PS. A strong contender for world's best		•	•			•	C91
▲ Well Tempered WTAT	1690	<b>G+</b> Intriguing/challenging design. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards	7.5		•			•	67

## Motor units

Product	£Price	Comments	Suspended subchassis	Solid plinth	Belt drive	Electronic PSU	Issue No.	
▲ Michell Gyrodec	697	<b>G</b> Sweet and natural sounding player, well suited to Rega RB300. Aesthetics, and the acres of clear acrylic are very distinctive		•		•	•	55
▲ Michell Syncro	325	<b>G</b> A happy blend of qualities endows the stylish Syncro with a blend of subtlety and force - the mailed fist in the velvet glove		•		•		67
▲ Origin Live Oasis A	495	<b>G-</b> Rather coarse sound lacking resolving power - but lively sound may appeal. Industrial appearance		•		•		79
▲ Pink Triangle Anniversary	1495	<b>E</b> Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny		•		•	•	91
▲ Pink Triangle Export	890	<b>E</b> The PT TOO with built in PS. Retains features of great transparency and neutrality. Review sample had highish motor noise		•		•	•	91
▲ Pink Triangle Little Pink Thing	500	<b>G+</b> Semi suspended, leads the field for clarity and neutrality at the price. It also looks good. Excellent value				•		79
▲ Revolver	200	<b>A</b> Nicely balanced, but unimpressive timing and lightweight bass made this deck rather average for the price			•	•		48
▲▲ Systemdek IIX/900	230	<b>G</b> A high performance budget turntable which is particularly strong at fine detail resolution and imagery		•		•		103
▲ Systemdek IIXE/900AP	388	<b>G+</b> The acrylic platter'd IIXE is one of the most capable budget decks on the market, good resolution, dynamics and timing		•		•	•	103
▲ Voyd 0.5	3368	<b>E</b> Halfway between standard and Reference Voyds with the latter's platter and bearing. Superb finish, colourful and dynamic sound		•		•	•	72

## Tonearms

Product	£Price	Comments	Effective mass (g)	Height adjustment	Parallel tracking	Pivoted	Issue No.
▲ Airtangent 1B	3000	<b>E</b> A complex but superbly built arm for high quality systems, giving excellent stereo and resolution	7.5	•		•	60
▲ Alphason HR100S	490	<b>VG</b> S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	10	•	•		C86
▲ Kuzma Stogi Reference	1000	<b>VG</b> Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	12	•	•		79
▲ Linn Ekos	1297	<b>VG</b> Superb, state of the art design which builds significantly on predecessor Ittok's strengths	9	•	•		67
▲▲ Moth arm	95	<b>G+</b> The ultimate budget arm? Refined, detailed, sweet and natural	12		•		60
▲▲ Rega RB300	139	<b>VG</b> Despite its modest price it sets exceptional performance standards and could be used on many high end turntables	11.5		•		60
▲ Roksan Tabriz	190	<b>G+</b> Targetted at the Xerxes, this is a good alternative to the Rega arms in many cases - a trifle bright	9	•	•		91
▲ SME 309	568	<b>VG</b> Beautifully made and finished, fully adjustable, a highly neutral performer	10	•	•		79
▲ SME Series IV	828	<b>VG</b> Superb engineering and finish with a finely balanced sound, impressive stereo focus and low colouration	10.5	•	•		60
▲ SME Series V	1232	<b>E</b> Excellent in all respects, this arm arguably sets the standard for pivoted arms regardless of price	10.5	•	•		60

# Not a very Kyte idea

**L**ike Archimedes, I sometimes have good ideas while soaking in the bath; I also have some bad ones, as the following column may demonstrate. My ears had been opened to the delightful characteristics of line- (as distinct from point-) source speakers. The line-source ideal is to create a source which radiates a cylindrical pattern of sound, which grows like a sausage balloon, whereas normal speakers act as point sources generating the spherical shape of a normal balloon. The fact that the sound isn't directed upwards and downwards means that energy isn't 'wasted' in these directions, while both floor and ceiling reflections, as well as the main vertical room mode eigentone, should be to some extent suppressed.



**As high as a *Kyte*, Paul Messenger attempts to raise the roof yet again, this time literally.**

My 'idea' was to figure that one way of creating such a floor-to-ceiling line source was to use 16 pairs of shelf speakers stacked up on their sides. I didn't know how it would work exactly, but the fact that the whole caboodle would retail for less than £3,000 was reason enough to give it a go.

Being narrow and capable of a very flat in-room balance in normal two speaker stereo mode, the Rega *Kyte* seemed the obvious candidate, so with the help of Roy Gandhi at Rega I collected up all the cabinet 'seconds' and prototypes I could muster.

Unfortunately, 16 turned out to be three too many for the ceiling height, but it's a magic number when it comes to adding and matching impedances. Let's take 8ohm resistors for simplicity: put two in series and you get 16ohms total; put two such pairs in parallel and, hey presto, you get back to 8ohms again. You can then repeat the same trick for four groups of four (16) and still end up with the 8ohms you first started with. Substitute drive units for resistors and we're on our way. Well, we might have been if I hadn't conveniently ignored the fact that driver coils have natural self inductance which doesn't add and divide in quite the same way (convenience all too easily leads to self-delusion).

Nor had I quite appreciated the amount of work involved, or the complexity of the wiring loom. Building the stacks onto a spiked Linn base and wedging them with foam against the ceiling was the easy part, and the result, though aesthetically imposing, was not unattractive. Subsequent calculation suggested some 250 soldered joints had been needed, which is why it took us the whole afternoon. The net result proved disappointing in one vitally important factor, overall frequency balance. This is for reasons which I only half understand and wouldn't even attempt to try and explain in a single page. But in fact the sound quality was quite good in other worthwhile respects, and the whole exercise was certainly justified by the validation of at least parts of the hypothesis. The reduction in loudness differentials through the listening room was obvious and welcome, as was the avoidance of excess around 50Hz which I attribute to the floor-to-ceiling main room mode. Using so many drivers means none has to work very hard, which reduces cone excursion, promotes sensitivity and system headroom and gives a very unstrained sound with fine dynamic consistency. High sound levels were easily obtained without stress, yet it worked very well at low levels too. Indeed, the stack-a-*Kyte* worked well in every important respect save two. The first was the overall balance, which sounded dull, thick and shut in, with insufficient presence and treble. This was confirmed by my regular far-field, in-room measurements, which showed an even balance 50-500Hz (at a high 93dB sensitivity), but then a steady and inexorable decline above 500Hz (an octave above middle C), to around -12dB at 2-5kHz. Output rallied by about 4dB in the mid treble, but was still relatively depressed. The other question mark concerned the stereo image, which didn't quite focus properly. Even so, voices sounded solid and believable, with fine character differentiation.

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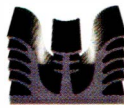
The *Kyte* tower of Babel didn't reach the heights of audio heaven, so it's back to the drawingboard.



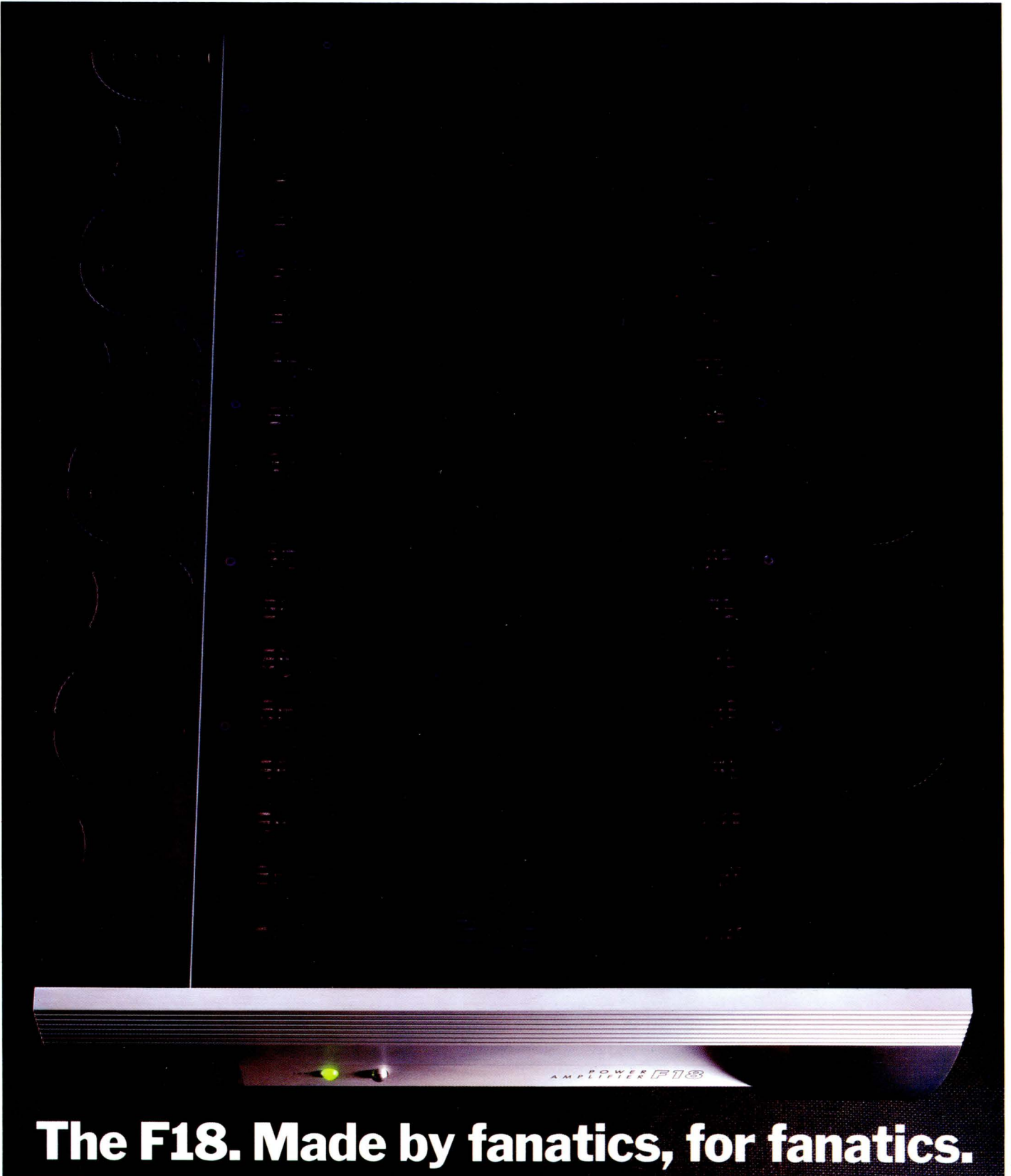
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I'm glad we went to the trouble of trying out this rather bizarre approach, even if the results showed there were rather more variables operating than had been taken into account. I'm still intrigued by the evident potential of the floor-to-ceiling line source, but suspect such a device has to be purpose designed from scratch with appropriately adapted driver technology to overcome the balance problems we encountered.

**Paul Messenger has been writing about hi-fi longer than he cares to remember, and is a former editor of *Choice* — three times over.**



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# MISSION

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