

# HI-FI CHOICE

**TEN**  
EQUIPMENT  
TABLES MUST BE WON!

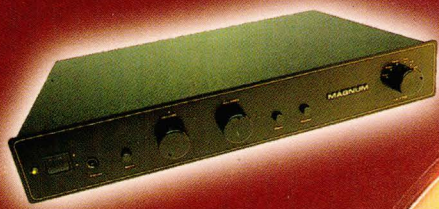
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**Budget amps battle for the pound in your pocket**

*Kit out your Kabin with Linn's multi-room Knekt system*

**A galaxy of gear awaits your perusal in our 32 Page Buyer's Guide**



**Paul Messenger goes tuner fishing**



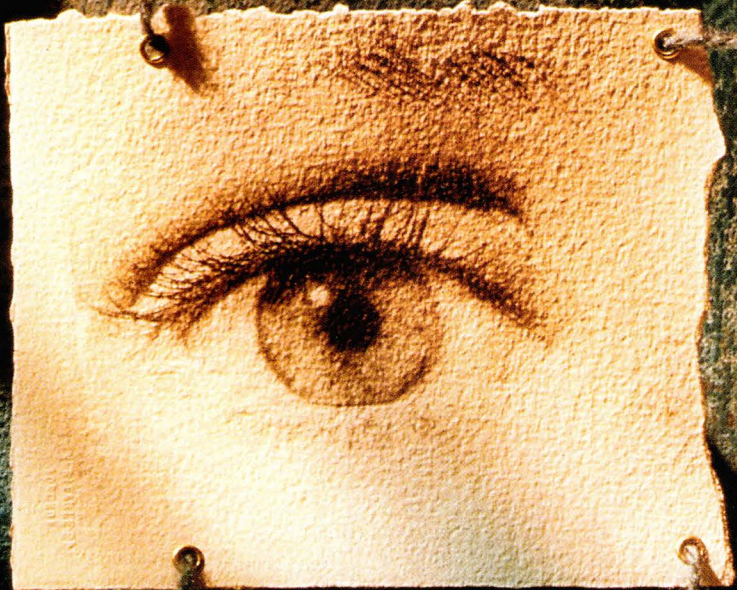
# COMBAT DISC

**Which format will win the future-CD battle?**



# Wharfedale

*modus music*



*senses  
faculties  
feelings  
sensations  
sensibilities  
appreciation  
atmosphere*



*awareness  
consciousness  
impressions  
intuition  
perception  
sentiments*

## *Tear your senses apart*



*Music is about emotion. From rave to Ravel and symphony to soul, music fails if it does not stir your emotions and succeeds when it is capable of tearing your senses apart. With any form of recorded music, it is the loudspeakers which make the difference.*

*Wharfedale's Modus Music range of speakers has a powerful modern sound. The bass is explosive while the treble is precise. The elevated tweeter unit will rotate 120° for optimum performance. The moulded baffle provides excellent damping for acoustic deadness and the sculptured design gives Modus Music speakers a classic appearance. The moment you listen to them you will feel the difference.*

*Modus Music is one of Wharfedale's many speaker ranges. These also include the innovative new Modus Acumax sub/satellite system.*

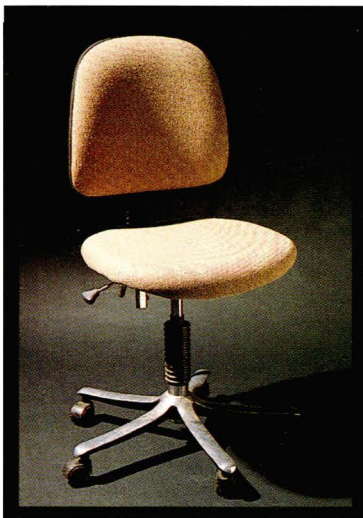
*Modus Music from £159.95 - £439.95*

*Wharfedale International Limited, Crossgates, Leeds, LS15 8AL Tel: 0113 260 1222 Fax: 0113 260 0267*



We bought our editor a chair – but he wouldn't let us plug it in.  
So, may we present Stan Vincent, unplugged.

# editor's chair



## What's in this issue?

Welcome to the acoustically enhanced virtual flotation tank that is *Hi-Fi Choice* magazine. Just step inside, think beautiful thoughts and emerge a better person. Indulge me as I catalogue the journalistic liniment we'll be applying to your fevered brows this month.

Our cover feature sets the record straight on the new developments in CD, thus empowering you to prevail in your next pub argument on this matter. Technology guru Barry Fox explains the jargon and cuts through the hype – your trusty CD player is not about to become obsolete!

There's an all-new look to *Sessions*. From this month onwards, our scribes will take turns to tackle the whole section each month, making for a more satisfying read. Reviews Ed Alan Sircom kicks off the season.

Equipment supports from Mana Acoustics have been widely acclaimed as the best invention since flushing water-closets, and our feature on page 34 does nothing to disabuse this notion. Penned by a self-confessed Mana junkie, it's an attempt to crystallise this gear's 'x' factor. (We omitted Mana's 'phone number, which is 0181-429 0118. And as they say on the TV, other equip-

ment stands are available).

Reviews Ed Sircom and I braved the frozen wastes of Glasgow to receive an exclusive low-down on Linn's new multi-room system, now a fundamental plank of their product development strategy. Read the full report on page 38.

Finally, noted airwave angler Paul Messenger has been sweating inside his waders to land 16 prime tuner fish deserving inclusion on your audiophile menu. Turn to page 42 and read all about the one that got away...

## A Choice cockle-warmer

Our large bivalve molluscs have been well and truly energised on the news that *Hi-Fi Choice* has increased its circulation. Official figures from the Audit Bureau of Circulation (ABC) show that in the period from July 1st to December 31st last year, we had an average net circulation of 29,199 copies per month – an increase of over ten percent on the average sale from January to June. Big thanks are due to all readers who have supported the magazine and now share in our success.

These figures position us firmly as the Number Two hi-fi magazine in the UK after *What Hi-Fi* (73,856). *Hi-Fi Choice* is comfortably ahead of both serious hi-fi-magazine rivals: *Hi-Fi News* (24,014 per month) and *Hi-Fi World* (18,635 per month).

Congratulation also to sister magazine *Home Entertainment*, which has just posted a first-ever ABC of 24,349. Bravo, chaps!

## Does it go up to 11?

An article in the February issue of *Studio Sound* magazine serves as a perfect example of the conceptual divide between professional recording and hi-fi. In the introduction to a piece about loudspeaker technology, AES fellow John Watkinson qualifies his comments with a subtle dig at the hi-fi press. "I am interested in precise sound reproduction rather than hi-fi. There was a time when the two were synonymous, but nowadays hi-fi has become a

religion in which beliefs are more important than truths."

No John – just that unlike most recording engineers, modern audiophiles are sussed enough not to be fooled when told that two identical-spec boxes sound the same.

## Something to do in May

Those frightfully clever but awfully nice boffins at the Institute of Electrical Engineers (IEE) are having a bit of a colloquium. It's on Monday May 1, at the IEE headquarters in London's Savoy Place – just by Embankment tube. This event, which is open to the public, will "consist of top industrialists giving their views on the way forward for the audio world", so a fun day will be had by all. Call for a booking form and programme on 0171-240 1871, extension 2206. See you there!

## Paul Messenger adds...

It's particularly sad to report the death of Raymond E Cooke OBE, one of British hi-fi's most important and influential figures. A far-sighted engineer, Cooke combined a BBC Engineering background with a five-year period as Technical Director at Wharfedale, before moving south to Maidstone and founding KEF Electronics in 1961. Over the following 27 years until retiring in 1988, he established KEF as the world's foremost pioneer of loudspeaker engineering and technology, notably the deployment of synthetic materials in the quest for unprecedented consistency.

Considerable natural marketing and communication skills made him the foremost international ambassador for the 'British-sounding' loudspeaker, and his legacy is a reputation for quality which will last for many years to come.

## Quotes of the month

"Architecture is frozen music" (Johann Wolfgang von Goethe, 1749 - 1832)

"Music is vaporised architecture"

(Hi-Fi Choice Team, 1995 - ?)

## Getting in touch with Hi-Fi Choice

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*Hi-Fi Choice* welcomes all information on new and upgraded products and services, for coverage within the news and review pages.

However, the publisher respectfully points out that the magazine is obliged neither to review nor return unsolicited products. The Editor is always pleased to receive ideas for articles, preferably sent first in outline form with details of the author's background (and where possible, with samples of previously-published work). However, he does not accept responsibility for unsolicited copy, and it may take time for a reply to be sent.

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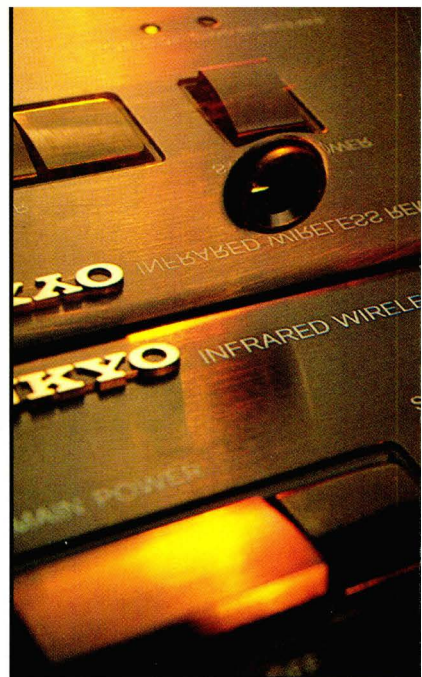
### THE GET-OUT CLAUSE

While every care has been taken in the preparation of this journal, the publishers cannot be held responsible for the accuracy of the information herein, or for any consequence arising from it. Readers should note that all judgments have been made in the context of equipment available to *Hi-Fi Choice* at the time of review, and that 'value for money' comments are based on UK prices at the time of review, which are subject to fluctuation and are only applicable to the UK market.



Your instant guide to the myriad intellectual stimulants present in this month's issue.  
What's in it, basically. (Cover image by Paul Wootton, taken from *The Professional Golgo 13*, courtesy of Manga Video.)

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# THE HI-FI CHOICE CHARTER

## Why Hi-Fi Choice is your essential choice

### RESPECTED EQUIPMENT REVIEWS

Our hi-fi group tests are the most thorough in the business. When we test a product, we assess every facet of its performance — the way it sounds, and its technical specifications. What's more, our listening tests are conducted under strict blind conditions, using an experienced panel drawn from the hi-fi industry.

### UNIQUE 'SWING TAGS' MARK OUT PREMIUM PRODUCTS

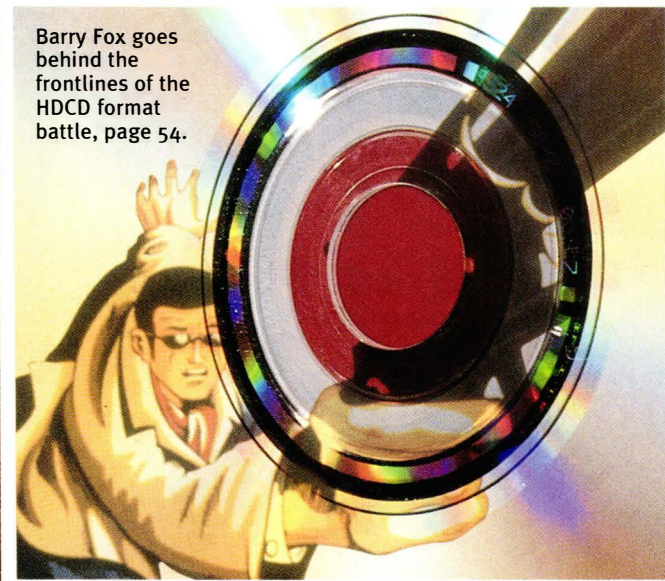
Our group tests aim to establish value for money based on absolute sound quality, build quality and measured performance. Products awarded the Best Buy swing tag will be of significantly greater value than alternatives in the same price band; both performance and construction will be exceptional. Products awarded the Recommended swing-tag offer greater value than alternatives in the same price band; their performance will be solid through and through, if not sufficiently remarkable for a Best Buy citation.

### EXPERIENCED WRITERS

Between them, our reviewers and columnists notch up over a hundred years' experience of listening to hi-fi. They understand what makes equipment tick, and are able to separate the wheat from the chaff. More importantly, they have the skill, honed over time, to predict how individual components will perform in real-world readers' systems.

### AN UNPARALLELED HI-FI PEDIGREE

*Hi-Fi Choice* has been testing hi-fi since 1975. We've seen the arrival of compact disc; the decline and resurgence of vinyl LP; the renaissance of valve amps; the birth of DCC and MiniDisc; and the continuing popularity of good old-fashioned cassette tape. We look forward wholeheartedly to the multichannel reproduction of music and the fusion of images and sound.



Barry Fox goes behind the frontlines of the HDCD format battle, page 54.

Paul Messenger reviews Acoustic Energy's *AE-1 Signature* speakers on page 20.

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*DAD7* CD PLAYER

*FM 7* TUNER

*Cyrus III* INTEGRATED AMPLIFIER

*PSX-R* REGULATED POWER SUPPLY



*Cyrus III*

# CYRUS

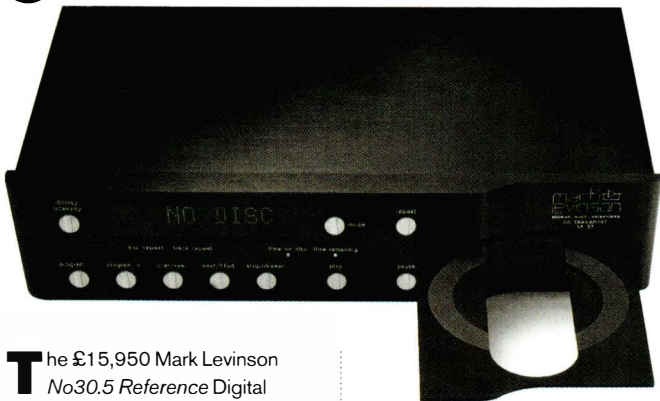
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Cast adrift in the mighty ocean of hi-fi, with little more than a word-processor to stave off certain death, how will Malcolm Steward deal with this month's batch of new goodies?

# update

## Mark Levinson goes HDCD



The £15,950 Mark Levinson No30.5 Reference Digital Processor now incorporates a retrocompatible HDCD decoder. Manufacturer Madrigal claims the improved unit offers eight times oversampling with up to 24-bit resolution when decoding conventional discs. Existing No30.5s can be upgraded by replacing their digital filter and processor-software EPROM.

The No37 CD Transport attacks mechanically and electrically induced jitter by combining a

Be First In your area to be First Out with Mark Levinson's No37. proprietary jitter-reduction circuit with a double-speed CD-ROM drive. The No37 eschews conventional servo circuitry and uses a low-noise FIFO (First In, First Out) buffer with a custom oscillator instead. Estimated price is around £4,500.

Another 'intelligent' FIFO buffers incoming data in the No36 Digital Processor. This £3,995 device doesn't rely upon sources having accurate data rates, and is even said to improve the sound of players that do not run exactly at 44.1kHz.

Finally, there are three new M-L dual-mono power amplifiers: the 300W No333 (£8,500), the 200W No332 (£6,500), and the 100W No331 (£4,500).

☎ (01494) 459981

### In brief

The legendary Final Laser turntable, now manufactured by the Japanese ELP corporation, is available in Britain through The Serious Audio Company for a cool £20,000 ☎ (01663) 742713

New from McIntosh Laboratory Inc, the MA6400 is a 100W integrated amplifier with full remote control and front-panel-mounted power output meters. Expected UK price: around £2,000. ☎ (01483) 454993

Rotel is offering an RQ970BX phono equaliser for just £99.95 to anyone buying an RA970BX integrated or RC/RB970BX pre/power amplifier before the end of August. ☎ (01908) 317707

Onkyo UK has taken over distribution of the Danish Dali range of loudspeakers. Buy a pair soon and you'll get eight metres of Dali audiophile cable free. ☎ (0181) 343 2082

## The full Amphi experience

Kinshaw's new Amphi-Sound processor (£299) aims to enhance music systems by negating the effects of reflected sound at the rear of the listening room.

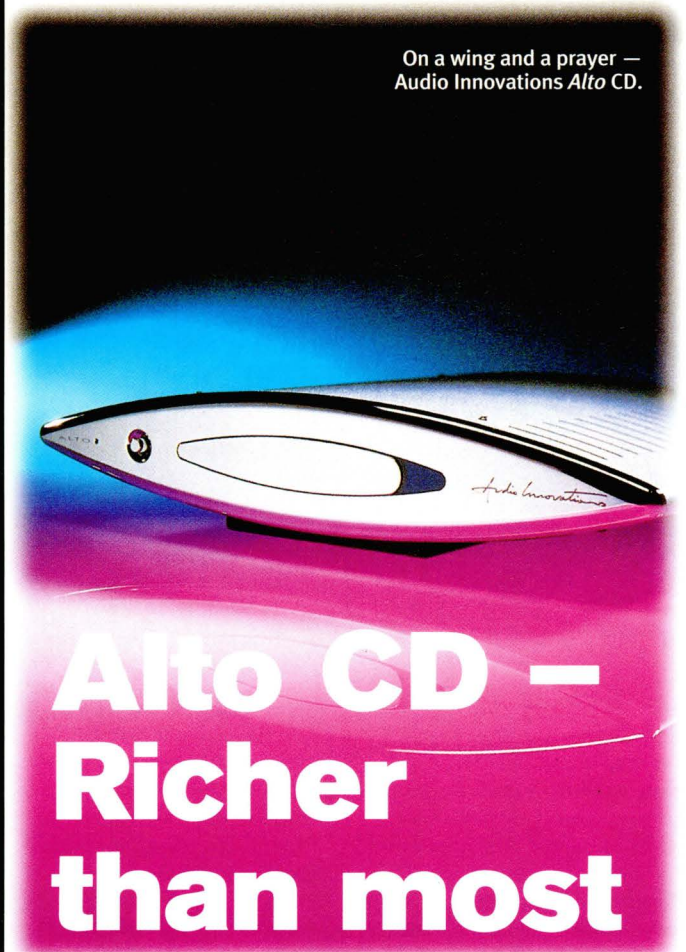
It takes a line level signal from the main stereo amplifier and feeds it to another amp driving a pair of speakers at the rear of the room. The

Amphi-sound is just the thing for Spartacus fans.

Amphi-Sound processor uses a proprietary algorithm, to reinforce rather than conflict with the main system, effectively masking the rear wall's reflected sound.

Kinshaw points out that this is not conventional surround sound, and

On a wing and a prayer — Audio Innovations Alto CD.



# Alto CD — Richer than most

After a year's development, the Audio Innovations Alto CD player is revealed to the world. Key features include: dual-differential balanced operational; constant-calibration bitstream DACs; a stabilised, low-jitter clock circuit and separate power

transformers for control and audio circuits; digital output; and a back-lit LCD display.

The Alto CD is priced at £299 (black) or £329 (chrome), and, like Audio Innovations' Alto amp, is available exclusively through Richer Sounds stores. ☎ (01305) 761017

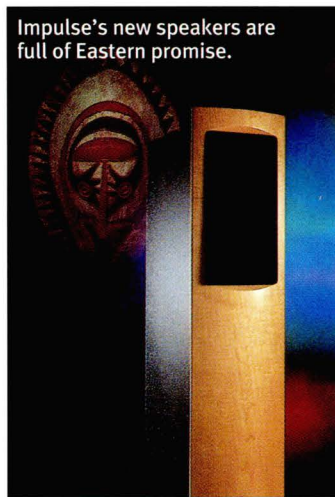


the system requires full-bandwidth speakers at the rear. A budget version, packaged with a four-channel amplifier, is expected. ☎ (01209) 715878.



## Impulse enters instrumental

Impulse's new speakers are full of Eastern promise.



**I**mpulse Loudspeakers enlisted the help of London's Design Council to create a dramatic look for its new *Kora*, *Lali* and *Ta'us* models, all named after Eastern musical instruments – a Senegalese stringed bass, a Fijian drum, and an Indian bowed stringed instrument respectively.

All three speakers are floor-standing, horn-loaded designs, made with hand-carved, solid-wood baffles hewn from Canadian maple. The top-of-the-range *Ta'us*, which costs £2,695, replaces the Impulse *H2* and uses separate horns to load its midrange and bass drivers. The £1,595 *Lali* replaces the *H6* and features an improved version of that speaker's bass horn. The £1,095 *Kora* is a wholly new design developed from the *H6*, which uses a modified exponential horn.

Each model has an integral stand, incorporates improved drive units and crossovers, and can be used close to a rear wall. Naturally, all are high efficiency designs with sensitivities ranging from 89dB for the *Kora* to 94dB for the *Ta'us*.

☎ 0181-766 0474

## Ultimately Rega

It's never too late to be called to the top table, thanks to Rega's *Planar 9*.



**T**he words 'ultimate' and 'definitive' are being uttered by Rega Research in connection with its new *Planar 9* turntable. Unlike former models, this one comes with a dual-speed, crystal-locked, dual-amplified, outboard power supply to drive a rigidly mounted motor – doing away with the need for the compliant motor mounting arrangement seen on previous Regas.

The motor drives a high-tolerance, diamond-turned sub-platter through twin belts for greater speed stability while playing heavily-modulated discs. Mechanical isolation comes from mounting the tone-arm, motor and platter assemblies on a lightweight inner plinth, which is attached through a three-point fixing to a solid wood surround. The main platter is machined from an aluminium oxide ceramic material.

The *RB900* tone-arm, described as an "ultimately refined" version of its *RB300* model, comprises a one-piece tube, high-tolerance bearings and attaches to the deck via three anti-resonance outriggers.

Total package price is approximately £1,500.

☎ (01702) 333071

## Europe's out walking

**L**ooks like it's gonna be a MiniDisc summer – Sony have announced a total of six new, third-generation MD machines. Immediately available models comprise three domestic units (*MDS-S30*, £499.99; *MDS-S1*, £549.99; *MDS-S302*, £499.99) and an in-car deck/tuner (*MDX-C150*, £599.99).

Come June, there will be two new MD Walkmen: the playback-only *MZ-E3* (£249.99) and the recording *MZ-R3* (£399.99) – the latter pair's

pricing has obviously benefitted from improved manufacturing techniques.

Sony claims to have sold 600,000 MD players worldwide over the last two years – with 30 per cent of those sold in Europe. They claim further that they have issued 36 hardware manufacturing licenses, 19 software pressing licenses and 16 recording media licenses.

Blank media is available at £7.99 for a 60-minute disc and £9.99 for a 74-minute disc.

☎ (01932) 816000

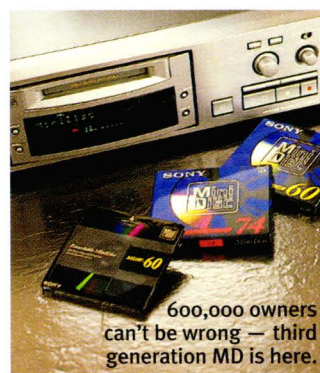
## Fidelity to customer demand

**M**usical Fidelity's *Elektra* range now includes the *Elektra E10*. This junior version of the *E100* is rated at 40 Watts per channel and, like its sibling *E50* tuner and *E60* CD player (due in a month's time), it will sell for £299.95.

The *E10*, which incorporates a moving-magnet phono stage and five line-level inputs, effectively replaces the popular *A1* and *B1* models in Musical Fidelity's range. The company explained that while the *A1* sounded sweet, it couldn't deliver high volume levels and was restricted in the loudspeakers it could drive. The *B1* was more powerful and resilient but frequently criticised for sounding brash. Customer response to the more expensive *E100* series components encouraged Musical Fidelity to clothe the *E10* in matching livery.

☎ 0181-900 2866.

**Back in black** — Musical Fidelity's *E10* undercuts the *E100*'s price but not its sound.



600,000 owners can't be wrong — third generation MD is here.





## Surrounding and visual

**B**ose's new £2,300 *Lifestyle 12* system adds the surround-sound angle to the company's slimline music system concept, first unveiled in 1989. In addition to CD and AM/FM tuner, the listener can now siphon Pro-Logic TV broadcasts or films through the diminutive brushed aluminium control centre.

The system is supplied with five magnetically-shielded *Acoustimass* 'double-cube' arrays and an *Acoustimass* three-chamber bass module, which incorporates

VideoLogic – Bose's enhancement of Dolby Pro-Logic processing.

Also of note is the RF handset, which relies on radiowaves rather than infra-red, and can thus be operated anywhere in the home. In specialist hi-fi dealers, customers will be offered a demonstration based around CD-i.

News from the fascinating facts department: Bose claims market leadership in European loudspeaker sales, citing market share of 17.2 per cent in May 1994.

☎ (01 795) 475341

## Budget Lux with optional champagne

**R**emember Luxman? RAM UK aims to re-establish this prestigious brand in the UK with new *300 Series* components, all at the entry-level price of £199.95. The range kicks off with the 40 Watt *A-312* amplifier, the two-head, two-motor *K-322* cassette deck, *T-353* tuner and *D-332* CD player – which offers 18-bit DACs, uncommon at this price level. All components are finished in 'Professional Black' as standard, though Luxman's tasty Champagne Gold finish will be available to special order.

☎ 0161-973 0505

Lorks! Luxury Luxman lives.



## Dangerous mini

**W**oah! Don't let your kids near the new £449.99 Aiwa *NSX-D999* Mega Mini System.

Unlike most wimpy minis, this one puts out a claimed and very dangerous 150 Watts per channel (ten per cent THD), making it a very hazardous bedroom accessory.

Other features include a three-disc CD changer, dual one-bit DACs, Artificial Intelligence navigation for ease of use, and – you guessed it – dual microphone Karaoke with Digital Echo. Aiwa's publicist assures us this means "More people, more fun". Mmmmm...

☎ 0181-897 7000

### Beware of the D999.



## Point Counterpoint



Counterpoint: where valves and solid-state meet.

**C**ounterpoint's £1,995 *NPS-100* is a new 100W hybrid power amplifier from the Californian company noted for partnering valves with semiconductors. However, the new model eschews traditional MOSFETs for bipolar transistors, thanks to the latter's greater ruggedness and improved current delivery, which translates into a more natural presentation with improved dynamic range, allegedly.

☎ (01483) 454993

## In brief

Kenwood's *UD-403P* mini system includes a three-disc CD player, tuner, cassette, graphic equaliser, and Dolby Pro-Logic surround sound. It comes complete with centre and surround speakers and costs £549.95  
☎ (01923) 816444.

Grundig's new *R120* midi system uses key components from the company's *Performing Arts* range. £399.99 gets you a silver finished CD, tuner, cassette, graphic, 30W amp and a pair of two-way, reflex speakers.  
☎ (01788) 577155.

Path Group has added a series of equipment and loudspeaker stands to its *Ixos* range. The *Deadrock* – not to be confused with *Dreadlock* – supports are fashioned from a granite resin matrix. ☎ (01494) 459981.

LucasFilm has bestowed Home THX certification upon XLO's *VDO* range of cables. This makes XLO one of only two cable manufacturers licensed to use the THX logo. ☎ (0115) 9284147.

The Chord Company has a special deal for anyone buying its *Solid* interconnect cable before the end of June. Trade in your old interconnect and get £30 off the *Solid's* regular price. ☎ (0722) 331674.

The National Vintage Communications Fair takes place at the NEC Birmingham on Sunday May 14th 1995, from 10.30 am to 5pm. Admission costs £5.00 and includes – while stocks last – a free copy of the *Sound and Vision Yearbook 1995/6*. ☎ (01398) 331532.

Goldring Products is now the UK distributor for Grado headphones. The American manufacturer has just launched a new five-model range that starts with the £89.95 *SR60* and goes up to £299.95 for the *SR325*. ☎ (01284) 701101.

Alpine still claims to make the world's smallest in-car CD changer after replacing the previous title holder, the *5960*, with the *CHM-5600*. The compact £299.90 unit has a six-disc capacity. ☎ (01908) 611556

In the US, sales to dealers of consumer audio hardware surged 12 per cent in 1994, topping \$8 billion for the first time. These Electronic Industries Association (EIA) statistics, released in March, are ascribed to 'an innovative industry and a resurgent US economy'. ☎ +1 (703) 907 7674

Aston Audio's Leeds branch is holding a Naim Musical Evening on Thursday May 23rd at Korks Wine Bar, from 20.00 onwards. Call ☎ (01943) 467689 to book.

Correction: last month's Update item on the REL *Storm* subwoofer was inaccurate. Where we implied that its *Volt* driver will be offered as an upgrade to existing *Stentor* and *Studio* owners, we should have said that the driver can be upgraded to the 'Big 10' driver used in the *Stentor* and *Studio*.



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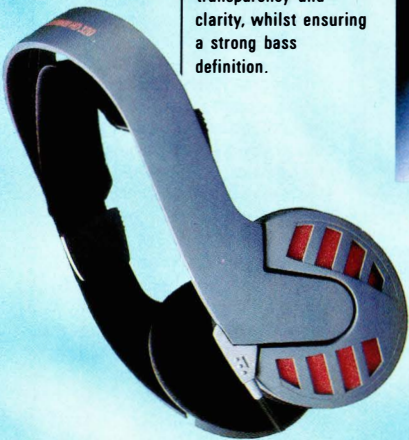
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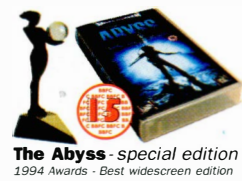
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Leaving no turn unstoned in the never-ending quest for the finest sound, Alan Sircom trawls the hi-fi ocean for prime fillet of audio, while Jimmy Hughes lives for good Stereo.

# choice sessions

It's strange how your tastes can change. Several years ago, I abandoned the classic 'Flat Earth' system in favour of something more neutral. It's therefore quite a shock to find that one of the most exciting sounds I've heard comes from an Exposure pre/power combo, which has firm roots in the flat earth camp.

Some time ago, Exposure loaned me its £850 *XVII* preamplifier and *XVIII* power amp, in preparation for this review of the new £850 *XVIII Super* power amp. The price of the combo was not quoted, but having spent several years in the industry, I can usually predict prices without a problem. This time, however, I failed completely, pitching the combo at double its real cost (£1,700). And that was before the *XVIII Super* turned up...

The combo is totally fuss-free, and superbly finished in Exposure's 'new' matt black house style. With a 250VA mains transformer that wouldn't look out of place in a power amp, the *XVII* is also one of the heaviest one-box preamplifiers around. This probably explains why it has a superbly musical on-board

phono stage (either MM or MC) and one of the most honest line stages in this price-range.

The Exposure *XVIII Super* is another stunner for the cash. It is equipped with a beefed-up power rail, a trimmed output section, and special foil capacitors which have nothing whatsoever to do with computers ('computer grade' components are a pet hate of John Farlowe, Exposure's designer). Like its sister model, the *XVIII Super* is a sixty-watter. It has the power it takes to get speaker cones smoking and cause the owner a 12 month suspended sentence for disturbing the peace. Both pre and power come fitted with XLR terminals. Neither offers true balanced operation, but there is still a great deal of improvement over previous models.

Prior to being introduced to the Exposure *XVIII Super*, I planned to praise the combo for its lack of artificiality and non-nonsense musical performance. Include the *XVIII Super* and give it a good warm-up, and you've come to the right place for a wicked sense of rhythm.

The imagery and transparency of the system is

also improved, as is the terrier-biting-through-your-soft-parts bass. The spot-on timing is what you'd expect from a designer who cut his teeth building Hi-Watt guitar amps for the likes of Pete Townshend. Effectively, it interferes with the fundamental aspects of the music so little that my note pad ends up looking more like a list from Record Collector than an attempt to criticise a piece of hi-fi.

If you are feeling picky, there is a slight dullness in the extreme treble, and the mid-range is on the hard side. But these details prove insignificant once the 'boogie factor' and price is taken into account.

The Exposure amp combo leads you toward similarly musical sources and speakers. I got the best results from speakers like the evergreen Epos *ES14*, smaller Shahinians and Royd's excellent little *Sorcerers*. More important, though, is that it creates clutter—you begin playing music at about eight o'clock in the evening and the next thing you know it's seven hours later and you can't move for records and CDs strewn across the floor. It's a worry.

I wouldn't recommend

owners of an original *XVIII* to replace it with a *Super*. Greater benefit would probably come from switching over to the mono version of this amp. However, I must admit that I deeply missed the Exposure *XVII/XVIII Super* when it left my system—which is about the highest praise I can think of for any product.

## Flat on my face

I'd hate to be drunk with a speech impediment when ordering sets of the Sonolith *Monolith 20/20* speaker cable. Designed to maximise the performance of Electrofluidics' Sonolith loudspeakers (reviewed in issue no. 139), the £25/m *Monolith 20/20* is a flat sandwich-construction cable. It uses a pair of high-purity 20mm-wide copper ribbons that are rolled, not drawn, and separated by a Mylar dielectric.

Cables like *Monolith 20/20* have extremely low resistance. This is to avoid the low frequencies unattenuating, which is borne out by listening, as is the extremely detailed high frequency performance one would expect from such a large surface area. On the right system, *Monolith 20/20* is wonderfully detailed, extremely coherent and has about the fastest transients I've come across from a cable. It's slightly dynamically challenged, but with all that detail, who cares?

The trouble is, low resistance cables have a very high attendant capacitance, which can cause a number of amplifiers near-terminal problems. The Exposure pre/power amplifier mentioned above would have a blue fit if I offered up *Monolith 20/20* to the speaker terminals. As a rule of thumb, a lot of amplifiers which emphasise pace, rhythm and timing will take to this cable like a duck takes to shotgun pellets.



Matt-black music from the rhythm kings of Portslade.



If you've the right system, give it 20/20 vision with *Monolith*.



If this all sounds familiar, it's probably because the *Sonolith Monolith* is nearly identical to the Goertz cable, imported by Townshend Audio. The two look the same, their construction is broadly similar, and they both behave and sound almost identically. If a gun were at my head, I would attribute slightly more detail and capacitive load to the *Monolith*, but it's also moderately less dynamic and balanced than the Goertz. However, these differences are extremely fractional.

I hesitate to recommend both the Goertz and the *Monolith* cables, because of their amp-crushing capacitance. The fact remains, however, that they are capable of providing superb sound in the right system.

The only conventional cable that sounds as good is the near-mythical (and frighteningly expensive) *Flatline Red Dawn*. But that's another story...

### Atmos 'R' Us

Our attentions now turn to the Technics *SC-LS10* system (see p15), a state-of-the-art radiogram which defies placement in conventional midi, mini or micro pigeonholes. Instead, this unit's discreet, curved fascia hints more at penthouse-style Bang & Olufsen than a commodity sale item in Dixons.

It's all remote-controlled naturally, and optimised for ease of use: basic function buttons stand ready on the handset; more obscure controls are hidden behind a sliding flap. The unit itself is similarly demure at rest, but when the CD and tape mechanisms are summoned they slide and rotate into position as if destined for an appearance on *Thunderbirds* or *Stingray*. You can also listen to FM, MW and LW radio, or select an external source.

Clever widgetry within enables easy unattended

recording of radio sources, or fuss-free cassette compilation of CDs. And once its clock is set, the *SC-LS10* becomes a high-tech alarm. This chronological awareness also extends to the unit's 'Soundscape' function, which offers synthesised renditions of calming natural sounds for those who need to unwind. On offer are Beach, Forest and Stream, each populated by 'virtual' birds and insects whose identities change through the day. From the morning cuckoo to the overnight owl, it's just the thing for executive stress.

Better still, mix this effect with the music you're playing and dial yourself an instant outdoor concert (Metallica meets Bambi, anyone?).

You'll be surprised by the sound of this distinctive machine. The speakers, curved in coordination with the main unit's styling, are three-way boxes of unexpected solidity; and they are entirely free of typical midi-system vices. Though power output is in the modest ten-to-thirty Watt range, real dynamics and real frequency range are available — music sounds like music, and will play to serious levels in the average room. Stereo imagery is

not a strong suit, but the *SC-LS10* would not embarrass itself in the company of budget hi-fi separates. There is a sprinkling of DSP widgets to boost bass, optimise for low-level listening and psycho-acoustically enhance the perception of stereo width.

While not qualifying as a true audiophile product, if you want to blend chic style, solid audio performance and remote-control convenience in a diminutive but high-value package, the £800 *SC-LS10* deserves your attention.

### La vie en Rose

A couple of stories surround Pink Triangle's new *Ventrical* loudspeaker (see p17). First, there's the name; for anatomical pedants, a ventricle is one of the two lower chambers of the heart; for Pink pedants, the *Ventrical* is PT's first since the introduction of *Cardinal* transport and *Ordinal* DAC. If the next Pink product is a bally subwoofer, I'd lay bets that it will be called the *Testical*.

The £865 *Ventrical* is a slimline floorstanding two-way speaker, available in a variety of funky finishes. It uses a dome tweeter (very similar to the EMIT popularised by Infinity) which

bestows seriously clean, extended treble, as well as the sort of openness that could almost pass for an electrostatic. Although extended, the *Ventrical* never lapses into brightness or sibilance, giving cymbals an attack, decay and release that is superbly accurate. This makes for a speaker that is very revealing, yet easy to sit in front of. Outside the world of 'statics, such a combination is as rare as hens' teeth.

The tweeter of the *Ventrical* is allied with a 100mm bass driver, coupled in a transmission line arrangement, with a rear-firing port. The latter makes the speaker adjustable to suit a wide variety of rooms. The *Ventrical*'s bass can be attenuated by up to 4dB, thanks to three different kinds of foam bung: too little and the bass overhangs and flaps around the room; too much and the bass disappears which means a thick and stilted midband. In my room, the best sound lay somewhere between 1dB and 2dB attenuation.

If you are an inveterate tweaker, this is the perfect speaker. Change the bung material or reposition the speakers slightly, and you will experience dramatic changes in performance. In this respect, the



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If style and DSP are all you need, Technics SC-LS10 is for you (see 'Atmos R Us', p15).

Smaller than your average speaker, the System Audio 905 lacks nothing in the fun department.

*Ventrical* is quite demanding. The more you put into the set-up of the speaker, the greater the rewards. In general, however, we're not dealing with a great fan of boomy, resonant or cavernous rooms. And the *Ventrical* prefers the softer approach of a Stemfoort SF100 integrated amplifier to the slightly brash Exposure combo.

When accurately set up, the *Ventrical* somehow reminds me of the Audioplan *Kontrapunkt* — a smoothly satisfying and unfatiguing experience. It produces an image that is dramatically precise, but which drops back from behind the speaker baffles, as opposed to projecting an image into the room. Also like the *Kontrapunkt*, PT's *Ventrical* has a very definite volume envelope that cannot be breached. This speaker will play loud enough to upset most inner city neighbours, but if you want pinned-to-the-wall volume levels, look elsewhere.

The *Ventrical* has a nice solid underpinning of bass. This is not the deepest, most grumbling bass around, but this speaker only uses a 100mm bass driver. A transmission line helps, but you cannae change the laws o' physics, Cap'n.

Sometimes, to my surprise, the *Ventrical* suddenly swung deep notes, when required by discs like Leftfield's *Leftism*. As with many transmission line designs, this bass is not the fastest, most spot-on performer in the rhythm department. It will not provoke a negative reaction under normal circumstances, but fans of timing-oriented systems will probably not be so impressed.

I'd be lying if I suggested that the PT *Ventrical* was the speaker for all people. Deep bass freaks, those seeking ear-bending volume levels and timing nutters are likely to find it downright unacceptable. However, if you lust after the glorious transparency that only a Quad *Electrostatic* can achieve, but lack either the funds or suitable domestic arrangements, this is a pretty good alternative.

#### Vitamin-fed minis

I've had so many boxes of fall over during the last few months, that even the tiniest speaker would be hard to like. Fortunately, the £250 System Audio 905 speakers are seriously small. Never mind Royd or Rega speakers, a pair of these tiny

starlets fit in a box almost the same size as a case of decent wine. The 905s are just about as much fun as a case of wine — and they last longer, too.

A tiny, bi-wirable two-way, this Danish five-litre 905 comes in a choice of black vinyl woodgrain or woodgrained vinyl which is black — but a genuine woodgrain finish is on the cards. It uses a 19mm fabric dome tweeter and a hand-made 130mm mid/bass drive unit connected to the outside world via a pair of gold-plated bi-wire terminals. The claimed sensitivity is 89dB which, coupled with a nominal impedance of eight Ohms and power handling of 70 Watts, means that it can be driven well with almost any amplifier.

Some hi-fi buffs may remember the classic Wharfedale *Diamonds* of the '80s. Along with many a fledgling enthusiast of the time, I cut my audio teeth on a pair of *Diamond 2s*. Although limited in a number of respects, the budget *Diamonds* never let go of the music, and allowed me to seriously upgrade turntables and amps over the years. These 905s share a great deal of that classic *Diamond* performance.

There is something nostalgic about the 905s. They kept

bringing me back to bedsit-land and Echo and the Bunnymen records playing into the wee small hours. And they lapped up almost all the music I tried on them, with a moderate bias away from classical music — more Velvet Crush than Vivaldi.

As you'd expect from a small box, deep and grunty bass ain't on the menu, but I think there's a slight upper-bass lift to hide the 905s limitations; not so obvious as to enforce heavy coloration on the speaker, but just enough to fill out the bass. This bass reinforcement is further enhanced by the filled single column stands, and by placing the speakers pretty close to a solid wall.

As an experiment, try the 905s with something like *No Protection* (the dub remix of Massive Attack's *Protection* CD), or the Vangelis soundtrack to *Blade Runner*. Both discs include the type of notes that cause serious intestinal disturbance to the listener, if you've got the right speaker. The 905 makes a valiant attempt at playing these deep notes, but at no time do you feel the air, or your bowels, move.

A small box generally images well, and the 905 is no exception. The image height is lacking completely, and there isn't much cavernous image depth,







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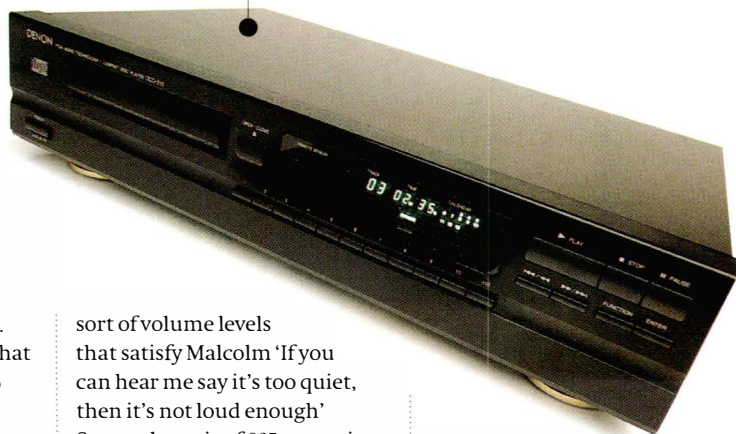


Open your heart to the new Pink Triangle *Ventrical* loudspeaker (see 'La vie en Rose', p15).

unless you move them into the room and lose what's left of the bass. But the soundstaging is wide, and studio engineers fiddling with pan-pots is every bit as annoying as with a pair of more expensive speakers.

What the 905s lack in image depth and deep bass, they make up for in a fair degree of dynamic range and coherence, allied to the sort of timing that brings a tap to the foot. Once again, the past keeps calling me. I can't help feeling that the 905s are a pair of *Diamonds* that took all their vitamins. All they lack is the lively spit of the classic Wharfedale, but that can be put

Denon's remote-free *DCD-315* CD player. Does low cost really mean good value (see 'The alternative is nothing', p18).



down to teenage exuberance.

The 905s are also smart in that they don't present a threat to mid-fi amplification and sources. So often, cheaper speakers are designed and even demonstrated when hooked up to vindictively expensive equipment; play the same speaker on cheap and cheerful middle-market gear (which it is most likely to be partnered with), and the speaker just doesn't deliver the goods. The 905 blends into real-world systems so well that you forget the technology and simply listen into the music.

While they can never play the

sort of volume levels that satisfy Malcolm 'If you can hear me say it's too quiet, then it's not loud enough' Steward, a pair of 905s can — in a fairly small room — churn out Rage Against The Machine loud enough to hurt. Finally, whatever you do, remove those black plastic logos from the grilles. I had them flapping along to almost every bass note, especially when things got loud. Better still, do away with the grilles altogether. Then you really have a giant-killer.

If they had the absolute detail resolution to match their strong points, the 905s could be serious competition for super-mini speakers like the Neat *Petite*. But such a statement doesn't match the massive price differential. More to the point, for a first 'proper' hi-fi system, you'll get a lot of mileage out of the 905s.

### Yes, my head hurts

Regular readers will know that I was profoundly impressed by the Grado *SR60* headphones. They are the baby of the Grado range, which stretches up to the £600 *HP1*. There is a lot of space between the two. Space that is filled with models like the £150 *SR125* (see p18). This looks almost identical to the *SR60*, save for the slightly larger earpads.

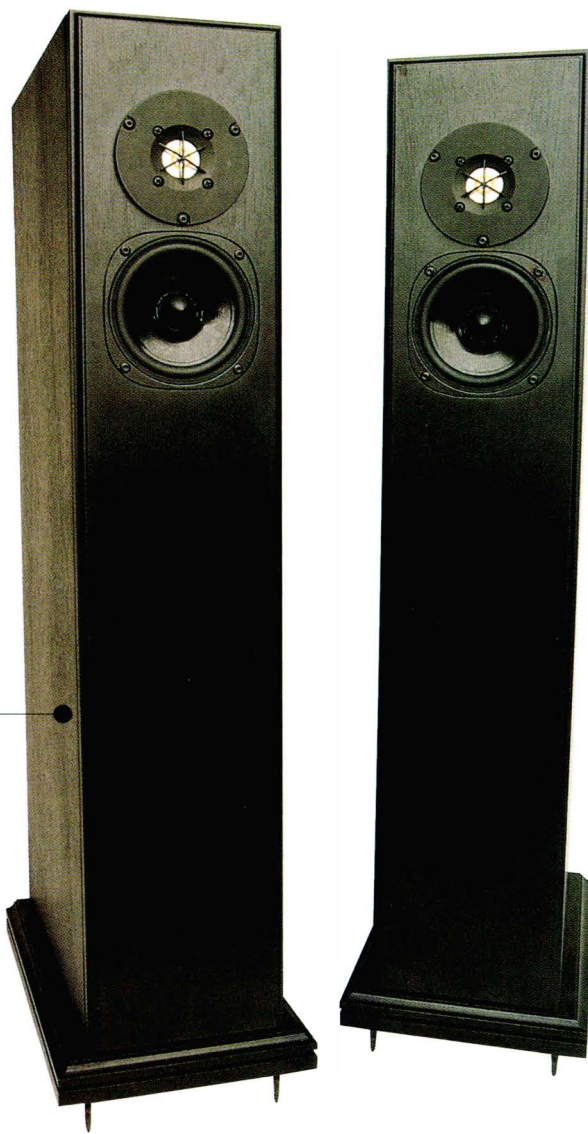
Bigger earpads, however, do not change the fundamentally uncomfortable nature of the headphones. It all comes down to that head-band, which is anatomically designed for a skull-sized light bulb. With the requisite amount of brute force and ignorance (my favourite combination, next to Southern Comfort and Babycham), the Grado band can be twisted into a vaguely human shape. They also leak sound like it was going out of fashion. In a quiet room, this makes the *SR125s* sound more like a pair of tweeters than a pair of quality headphones.

Fortunately, the sound quality more than makes up for the lack of creature comforts. The *SR125* builds upon the basic performance of the *SR60*, getting even closer to what's on the disc. It also provides the dark sound with deep, full-on bass and the slightly forward mid-range which is characteristic of the *SR60*. Unlike a pair of AKG, Beyr or Sennheiser cans, the Grado design is more idiosyncratic. If you, like me, can get past the uncomfortable nature and slight brightness, almost every other headphone on the market sounds contrived and unexciting by comparison.

The *SR125s* also avoid lateralising music, which helps to minimise the in-head sound typical of many headphones. On the other hand, they are never anything less than a bumpy ride through your platters, and many will find the process a tad too uneven and unnerving.

I know that the *SR125s* are bright. I also know that I listen to them too loud, consume too many trans-fatty acids, stay up too late, take too little exercise and swear in the car even when the window is wound down. But life is too short to live a puritan lifestyle and the *SR125s*, like the *SR60s* before them, help to bring out the proto-human in me. I really enjoyed playing some naff dance CDs through them. I like them because they're highly sensitive, so I can turn the volume up to hearing-threatening levels, just for fun.

Comparing the two models is an interesting project. Play a track on the *SR60* and get used to the depth of bass, the sheer clarity, focus and speed of attack. Then change over to the







SR125 and wonder how you could find such a limited performance so alluring. By contrast, the SR60 is seriously bass-challenged, sharp and grainy. A sense of immediacy present in the SR60 is less evident in the bigger model, but

after a while it becomes clear that this is simply due to the lack of frequency extension (the SR125 seems to add an extra octave everywhere). There is still a slight touch of grain, but this is trivial when compared to the sheer zest of the headphone.

The Grado SR125 is more of a double-edged sword than its sibling; use a cheaper headphone output and you have a rather bright balance. Plonk in a decent headphone amp and you are in for a superb, if uncomfortable, headphone

experience. It's more like direct-coupling your central nervous system straight into to the CD player's output.

#### **The alternative to nothing**

Finally, just a few brief notes about the new super-budget



Never a dull moment with the Grado SR125 headphones.

£150 Denon DCD-315 CD player (see p17). It uses the Burr-Brown PCM1710 combined DAC/filter chip, so we're dealing with a bare-bones player. There is no digital output, headphone socket, random play feature or display dimmer button. Couch potatoes like me will also find the lack of a remote control a problem. However, all the basic controls are on the front panel and the player's ergonomics are very similar to the company's more expensive machines.

Denon is obviously going for the audiophile vote at this low cost, even if the more logical option would be to opt for a feature-packed player with primitive sound quality. Yet, the DCD-315 is far from perfect. It tends to produce left and right channel sounds rather than a soundstage, and is quite gritty throughout the mid-range and treble. However, it can follow a bass line with some considerable charm.

Blur's *Parklife* revealed everything good and bad about the 315. It takes the vocals a little too close for comfort and leaves those guitars far too raspy. We're left with a close-knit, undynamic sound that borders on the claustrophobic. However, this must be weighed against its coherent performance, which tethers you to the music, especially if you can live with in-ear production values. And there's that low price...

Although I would find it hard to live with the performance of the DCD-315, I doubt if I could live with any player in its price-range. There is a hell of an improvement to be had by opting for one of the many players at £100 more, but if the choice is between a £150 player or no player, try this Denon.

### Accuracy or musicality?

After some goody-packed weeks of product testing, my head

spins from the plethora of philosophies presented by various manufacturers. On the one hand, you have the absolute fidelity of Pink's *Ventrical* speakers and *Sonolith's Monolith 20/20* cable; on the other you have the feel-good factor of Grado's SR125, System Audio's funky little 905 speakers and Exposure's XVII pre and XVIII Super power amp. I don't include the Denon in this, as it falls between the two stools because of its low price. I'm not even going to try to comment on which is intrinsically better — accuracy or musicality. But that's the beauty of hi-fi — you have room for choice.

If I lived with the seriously musical Exposure combo, I would dramatically change my system to match it. However, the system would then be so fun-oriented that I would over-use it, and consequently wear out a phono cartridge every six months and a CD laser every two years. By contrast, products like the slightly more cerebral PT *Ventrical* are deeply unexciting; not in a bland manner, but simply honest enough not to overstate themselves. At first listening, it is easy to dismiss the *Ventrical* as lacking in bass, slightly slow, and unsuitable for playing loud. Give it a bit of time and a lot of setting up, and this speaker really pays dividends in the sound quality department.

The Grado SR125s are totally different. I'd be the first to admit that they are not the most honest cans around, and I accept that they are too bright and uncomfortable for many listeners. But if you feel that the average £150 headphone is about as exciting as driving around a car park at 5 mph in a Volvo estate, then the Grados could be the cans for you.

Denon's DCD-315 will never take the hi-fi community by storm. For the money, however,

it puts in a very fair performance. If you are thinking of shaving a few pounds off the budget, I wouldn't advise you to opt for such a cheap player, but if you are driven by necessity rather than sheer penny-pinching, then at least the Denon tries for an up-tempo sound. The trouble is, it makes a few sonic problems for itself along the way.

Of everything tested, the tiny System Audio 905s impressed me the most. Of course, the more expensive products were intrinsically better, but the 905 is the sort of no-fuss, fun-time product that simply begs to be a part of so many sub-£1k systems. Hi-fi old-timers might remember 'student systems'; with the loan scheme, if you can find a student who isn't way below the breadline, get them to check out a pair of these, or else.

Denon DCD-315: Hayden Laboratories Ltd, Hayden House, Chiltem Hill, Chalfont St. Peter, Gerrards Cross, Bucks SL9 9UG. ☎ (01753) 888447

Exposure XVII/XVIII: Exposure Electronics, The Works, 59 North Street, Portslade, Sussex BN41 1DH. ☎ (01273) 423877

Grado SR125: Goldring Products Ltd, 8 Greyfriars Road, Bury St Edmunds, Suffolk IP32 7DX. ☎ (01284) 701101

PT Ventrical: Pink Triangle Projects Ltd, The Basement, Camberwell Business Centre, Lomond Grove, London SE5 7HN. ☎ 0171-703 5498

System Audio 905: The Chord Company, 38 Sarun Business Park, Port Way, Salisbury SP4 6EA. ☎ (01722) 331674

Technics SC-LS10: Panasonic (UK) Ltd, Panasonic House, Willoughby Road, Bracknell, Berks RG12 4PF. ☎ (01344) 862444



## Record review

### FESTIVAL

Chicago Symphony Orchestra

Fritz Reiner

Classic Records RCA Living Stereo

LSC 2423

Reiner's conducting of these Russian orchestral showpieces is an object lesson in how to extract playing of the utmost clarity and refinement without sacrificing temperament or excitement. You'll certainly have little difficulty finding a faster, flashier account of Glinka's *Ruslan and Ludmila* overture, or a starker, more lurid version of Mussorgsky's *Night on the Bare Mountain*.

However, Reiner's art was a subtle one, and he had the great gift of being able to control and shade the sound, so that it remained transparent and clean even during the wildest climax. The recording itself, made on March 14, 1959, is full-blooded and vivid, especially in this new Classic Records vinyl re-issue. Definitely a 'big' sound, but never loud or noisy.

It takes orchestral playing of exceptional refinement and control to avoid making Tchaikovsky's brash *Marche Slav* aggressive, yet Reiner and the Chicago symphony manage it. I can't think of a more musical version on record to date.

The disc starts with an excellent performance of Kabalevsky's *Colas Breugon* overture: a bright and tuneful, but shamefully neglected piece. Reiner's performance is relaxed, yet alert and pointed. The short *Marche Miniature* from Tchaikovsky's *Orchestral Suite No 1* is another highlight, with bright and mercurial playing. Borodin's *Polovtsian March* shows how supple and flexible phrase of Reiner's Chicago orchestra.

I don't think *Festival* was ever issued on LP in the UK at full price, but it definitely came out in the early '60s on RCA's budget Victrola label, retitled *Russian Festival*. The old Victrola wasn't bad, but the Classic Records re-issue sounds much fuller and more detailed, with extended bass and treble, in addition to stereo separation.

Those of you who took my advice and bought Reiner's fabulous Mussorgsky's *Pictures at an Exhibition* on CD will already have the contents of this LP; RCA generously coupled them together for the Living Stereo CD re-issue. Yet, good as the CD is, it hasn't quite the vibrance or sheer vitality of the LP. Definitely another Reiner to add to the collection!

Jimmy Hughes



# Rosewood bitters

*Paul Messenger takes a bijoux loudspeaker under his wing and ponders whether small is truly beautiful.*

**A** reviewer ought to know his or her prejudices, and there's no getting away from the fact that my heart lies in big-speaker-land. Behemoths like Tannoy *Westminster Royals*, Townshend *Glastonburys*, Klipschorns and Living Voice *Air Partners* are just some of the *colossi* which have inflicted temporary havoc on my interior decor.

Acoustic Energy's Steve Tayler is therefore a brave man to bring over a pair of the new *Signature* versions of the company's cult classic *AE1* luxury miniature. The £2,000 price tag makes it one of the most expensive speakers in the 'incredibly small' category.

But why spend so much on something so small? Apart from the odd loony like yours truly, smallness is widely regarded a very positive virtue among hi-fi speaker buyers, whose ideal should be heard but not seen. And while the majority might equate small with inexpensive, there are plenty of demanding audiophiles who combine top quality electronics with discreet and beautifully finished wonderboxes.

To overcome my innate bias, I sat my gut reactions down and gave them a good talking to, explaining that small speakers have real strengths as well as weaknesses, and that in loudspeaker-land all is compromise. Make something enormous and you stand a good chance of moving a lot of air molecules very quickly, which is handy. However, you also have to cope with the tendency of all that cabinetwork to carry on vibrating after the event. Make the box small, and there's not a lot of woodwork to vibrate. A stiff and strong build adds further icing on the cake, and is relatively easy to accomplish.

Cabinet coloration gets easier to minimise with a reduced surface area. And a small, head-shaped enclosure is just about the best shape for coping with baffle edge diffraction and other distribution discontinuities. Which not only keeps another source of coloration low, but also provides the most open, precisely focused and transparent stereo images.

However, against these very real ben-

efits must be set three unavoidable limitations: modest sensitivity and ultimate loudness capability, as well as limited bass extension. There's no way of bending the rules of Physics.

With 5mm metal plates lining the box (instead of the concrete compound used in the standard *AE1*), the *Signature*'s enclosure probably comes as close as any to providing a driver mounting platform which remains as stable and inert as possible, despite all the vibrational energy generated from the drivers. The one caveat is that such a tiny miniature has to be used on stands, and there aren't many (if any) stands of comparable build. Acoustic Energy supplied its own mass loaded twin-pillar affair, but I found the 24inch from Slate Audios noticeably more neutral, and used them for the bulk of the tests.

## Very metal

The *Signature* feels extraordinarily solid. At over 12kg, it represents an extra 5kg of mass loading over the standard Reference-series *AE1*. Although the drivers remain AE's own familiar metal diaphragm units — a 90mm main cone/dome and 25mm dome tweeter — pair matching and tolerancing is reportedly tighter. A completely new and much simpler crossover network is used, deploying quality components mechanically damped by epoxy potting, and feeding the drivers via silver wire.

I put the *Signature* through the usual in-room measurement régime, which produced results pretty much in line with *AE1* expectations. The differences between R- and S-series were less marked than their similarities and, not unexpectedly, they were mainly concerned with the crossover region. The S-series avoids the rather abrupt 2kHz notch of the standard model, replacing it with a broader but shallower depression which starts around 1kHz. More significantly, the *Signature*'s relative treble level is approximately 2dB lower.

Bass extension is naturally limited, with the alignment gently starting to roll off below 80Hz, ensuring adequate in-room levels down to around 50Hz and just a little below that. Some wall reinforcement might be helpful in bass balance terms, but it's bound to upset the mid-band smoothness.

Most significant of all is the sensitivity, which measures a very low 83dB/W (in relative far-field terms). This means that serious loudness doesn't really

belong on the agenda, and a powerful amplifier is mandatory. Happily, the load is very easy to drive.

My first reactions to the *Signature* were mostly positive. It crossed a number of crucial hurdles with a contemptuous ease that fully vindicates the elaborate enclosure engineering. I know of no speaker that sounds less boxy, while the bass freedom, the poise and the overall dynamic range is utterly remarkable from something so small. The smooth, flat balance ensures minimal coloration, natural perspectives and 'walkaround' stereo imaging.

However, if the dynamic range is exceptional, the dynamics themselves have all the excitement of a wet weekend in Whitby. There's none of the grip and little of the drama that makes high efficiency designs so exciting. This speaker does a fine job of reproducing a recording or transmission with great accuracy, but a degree of detachment ensures that it always sounds like a reproduction, and you'll never be fooled into believing you're listening to the real thing.

Although it has a bass reproduction which is altogether more confident and assured, as well as a mid and top that's sweeter and more transparent than the standard model, the *Signature* also sounds significantly more laid back. Thrash it as hard as you like (or as much as your amps can) and it steadfastly refuses to sound aggressive or even particularly loud. Fine timing, superb coherence and that wide dynamic range still add up to a very entertaining and rewarding listening experience, but the *Signature*'s quintessential reticence might be a mite too polite for some tastes.

Ultimately, speaker choice does seem to be a matter of taste. Just as several friends have recently opted for Shahinian speakers, I have gone the opposite, Rehdeko, route. This factor, combined with some lack of experience of its immediate competition means I will not describe the *Signature* as the greatest little speaker on the planet. Nor do I feel happy discussing its value for money — that depends too much on how you value your money. Nonetheless, the *Signature* is an exceptionally good speaker, and a lot of fun too, if a bit on the small side...

Acoustic Energy, 3a Alexandria Rd, London, W13 0NP. ☎ (0181) 840 6305.

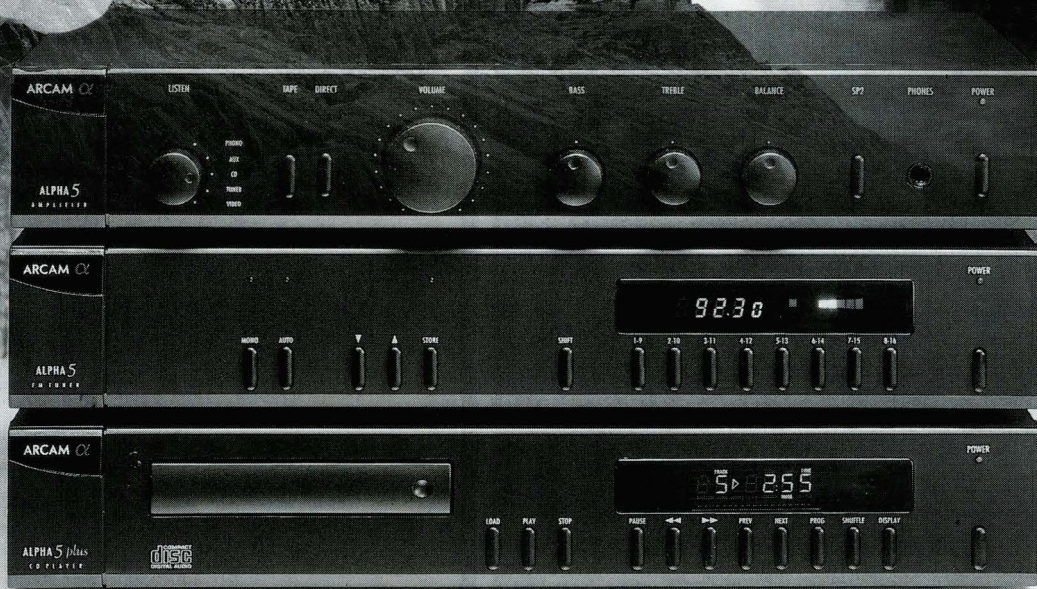
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\*If you already own an Alpha 5 CD player, we'd be happy to update it to full 5 Plus specification. Please call our service department at the number below during office hours for full details and prices.

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HFC 5/95



# Danish with knobs on

*Is there something rotten in the state of Denmark, or has Alan Sircom stumbled across the amp that dreams are made of?*

It's completely impossible to overlook an amplifier like the £1,299 Densen DM-10. This Danish design is encased in a four-square black box with a piano gloss front panel and two huge golden knobs on the front. Closer inspection reveals an LED between the two knobs and a minute legend along the top plate, telling you what the knobs do. In all, it looks like a large Onix amplifier, built to luxury standards — a strange coincidence, considering Densen was once the Danish distributor for Onix amplifiers...

The inside, however, is an entirely different matter. The DM-10 is split into two 75w monoblocks and a passive pre-amplifier, built into the same chassis. It shares this chassis with what must be the largest power supply of any integrated amplifier in this class; in the form of two huge toroidal transformers, eight power rectifiers and 80,000µF worth of custom-made storage capacitance. This design is similar to the company's 100W DM-30 power amplifier.

What is innovative about the Densen design is its lack of feedback. The use of feedback in amplification became popular in the post-war period in the search for lower measured distortion levels. As valves moved to early transistors, feedback was maintained to keep circuits stable. Today, though, the best solid state components are stable enough to cope with zero-feedback circuits, and since feedback-free designs became fashionable in the tube world, tranny amp design has started to go the same way. What goes around...

In its basic guise, the DM-10 is a line-only amplifier. However, there is an option to add the £149 DP-01 MM phono stage board, which uses surface-mount devices. There is also a forthcoming £299 DP-02 MC board, which will be the first light-powered phono stage.

The DM-10 has also been recommended for use with Densen's £10 DeMagic 'demagnetising' CD. This plays an eerie noise, like something from *The Day The Earth Stood Still*, for three minutes in the hope of demagnetising your hi-fi system. Whether it does so or simply sprays your system with fairy dust

remains unclear, but it works. I tested DeMagic on my own stereo, by first playing music to some unsuspecting friends, surreptitiously moving them out of the room to a quiet area, playing the disc and then replaying the system, and gauging the responses of the listeners. In general, the response was positive, upping clarity, transparency and dynamics, as if a level of background hash had been thrown away.

The manufacturer's brochure doubles as a set of sleeve notes for the DeMagic disc and serves as a handy introduction to Densen's products, philosophy and objectives. However, it lays claim to introducing the concept of the 'air-guitar' factor, where one feels so involved with the music that one wants to play along with an 'air-guitar'. While I am prepared to accept that Densen may have brought the phrase into hi-fi usage, I can remember playing many an air guitar solo back in the early '80s, head-banging along to the likes of AC/DC's *Whole Lotta Rosie* and Motorhead's *Ace of Spades*. Also, the seemingly random picture of a half-naked man spanking his plank on the rear cover is little short of disturbing.

## De-fuse the situation

It helps the initial performance of the DM-10, like any good product, if you give it a substantial run-in before playing. There is no front on/off switch, so it's likely to be the sort of amplifier that you don't switch off much anyway. The DM-10 is best used with a 13A fuse in the plug; inadvertently, I used the amp with a 5A fuse, which packed up after a few throws of the power switch. However, this is also an amplifier with masses of reserve current on tap, as shown by unplugging the amplifier. If

no signal is playing, the tell-tale red LED will still be glowing minutes later.

With the cross between high-tech circuit design and 'air-guitar' listening, one would expect the DM-10 to toe the line between cerebral analysis and heads-down boogie. And this is exactly what it does. The amplifier is extremely adept at creating a sense of musical balance, carefully juggling the characteristics of a performance.

Playing seriously funky jazz like *Long Time Gone* from Galliano's superb remix of the *A Thicker Plot* album didn't faze the DM-10 one iota. It was as if the amp unleashed foot-tapping pheromones from the speakers; all this 'air-guitar' nonsense seemed to be true after all. Even the frantic rhythms of *Jungle and Rave* were delineated without complaint; so often, dance music has all the grace of a car alarm if the amp's rhythmic qualities are slightly out of kilter.

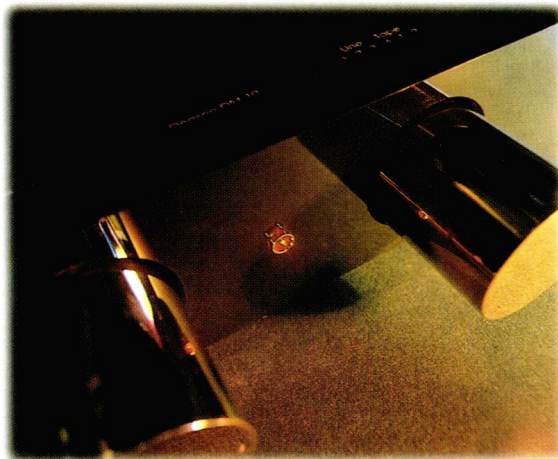
Densen's DM-10 provides a brighter, more uplifting air than rhythm-kings like the *Exposure* pre/power combo, in *Sessions* this month (page 12). I feel that the *Exposure* combo had deeper, more powerful bass, but the DM-10 wins in the mid-range and treble. Unlike the majority of up-beat amplifiers, the DM-10 is not hard or over-bright. This is vitally important with classical music like Bach's *St Matthew Passion*, where any hardness in the midrange equates to a brash-sounding choir. I experienced a smoothness and clarity that approached what US magazines call 'liquidity'. But the Densen was far too funky for that description.

The DM-10 is blessed with outright transparency. From top to toe of its usable frequency range, the amplifier is reluctant to impose any character on the music. This means that it should be able to slot into a wide range of systems and suit a variety of musical tastes.

If I had to draw an analogy, I feel the Densen DM-10 resembles a transparent Naim Nait 3 on steroids. Aside from the lack of absolute grunt to the bass, there is hardly anything to criticise about its seriously musical performance, at the price. The rewards are strong enough to warrant building a system around the amp, as long as you don't mind sharing your room with a couple of the biggest knobs in the business (yik, yik).

Morel UK Ltd, 11 Foxtail Road, Ransomes  
Ind Est, Ipswich, Suffolk IP3 9RT,  
☎ (01473) 719212

Is that a Densen DM-10 in your pocket, or are you just pleased to see me?





Panic not if your hi-fi system sounds like a bag of spanners, as the *Hi-Fi Choice* team of experts are on hand to guide you back to the path of righteous sonics.

# help!



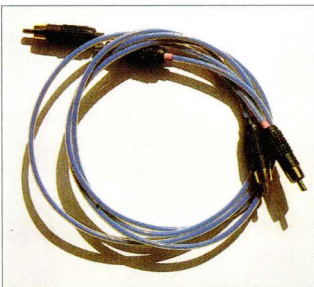
## Money well spent

**Q** My system consists of a Rega Planar 3 turntable with ADC Series IV cartridge, Creek CAS-4040 amp, Heybrook HB-1 speakers connected with Naim NAC-A4 cable, and an Aiwa AD-F500. I recently bought a Sony CDP-715E CD player plus Chord Cobra interconnects. The Sony must be the best £250 I have ever spent! As a total convert to CD, what would be the next logical upgrade — speakers or amp? My preference is for a tight, detailed and controlled sound.

**JG Terry, Scotland**

**A** The Heybrooks can sound quite bright, but in your system, this is probably offset by the warmth of the Creek amp. It's likely that most modern amps would produce a leaner and sharper sound

## Query of the month



Each month we're giving away a one metre pair of Precious Metal Silver Signal 75 interconnect cables for the most interesting letter. Send all your system queries to: *Hi-Fi Choice* (Help!) Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ.

**We told you so! The best £250 ever spent — it's official.**

*than your old 4040, so upgrading may be a mixed blessing. What you need is both, selected on the basis of your CD player. Speakers, however, would make the most obvious difference; listen to Mission 733s, JPW AP2s, Dali 104s and Castle Chesters if they fall within your means.*

## Bland blues

**Q** I currently have a Technics SL-P202A CD player, Nakamichi IA-3 amp, and Mission 737R speakers. I recently upgraded my amplifier from a Musical Fidelity B1 to the A1-3 (discontinued and available for £160). This has put more space into the sound and cleaned up the treble. But the trouble is, my CD player sounds rather bland and uninspired. Having saved some money on the amp, I could afford to spend between £200 to £300 on a new CD machine. What do you suggest?

**R Crawford, Wiltshire**

The rain in Spain falls mainly on the Audiolab 8000A.

## Sofa query of the month

**Q** I would one day like to replace my Dunlopillow bed settee with a conventional three-piece suite.

Because room acoustics are affected by the furnishings in it, I wonder whether you have any views on the best type of covering — say, between a cotton fabric or leather?

**M Lautenberg, Middlesex**

**A** You're right; large settees and armchairs can alter the sound

quite noticeably — perhaps one day we'll see an issue of *Hi-Fi Choice* devoted to A/B comparisons between soft furnishings. Even now, Paul Miller is reconfiguring his computers to plot the results in 3D.

Very large chairs will soak up quite a lot of treble, and the effect seems to be increased where the covering material is synthetic. A natural cotton material should be best, although you must of course listen for yourself! Just remember, it's easier to get curry stains off leather.



Sofa so good. Hi-Fi Choice — the first word in audio seating.

**A** The Marantz CD-63 offers a lively upbeat sort of sound that should produce the kind of improvement you're after. You could also listen to Sony's CDP-715E, which is exceptionally good. While the Sony is perhaps the more fully rounded performer sonically, the Marantz may prove more to your liking with its big soundstage and forward presentation.

## Spanish fi

**Q** I've got an old system consisting of a Denon PMA-980R amplifier, Denon DCD-685 CD player, Denon DRM-710 cassette deck, a NAD 5120 turntable, and Celef PS-1 speakers. Recently, I replaced the amplifier with an Audiolab 8000A and can hardly believe how much better my LPs sound. I'd like to upgrade the CD player and speakers, and have in mind the Marantz CD-63 or the Micromega Stage 1. My speaker shortlist includes the Castle Chester Mk II and Mission's 753. With £1,300 to spend, what should I do?

**R Toledo, Spain**

**A** You're heading in the right direction, but do listen carefully to ensure a balanced combination. Mission 753s sound lively and forward but may be a little too exuberant if partnered with the Marantz CD-63 — though much





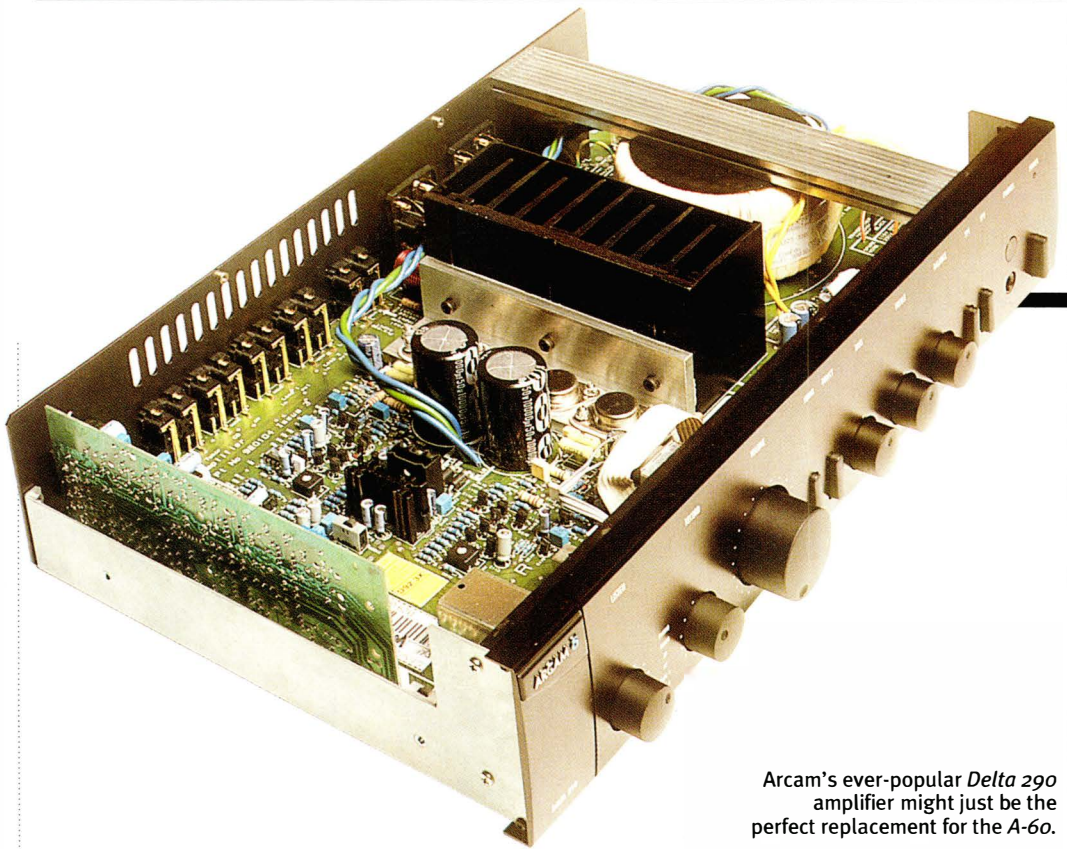
depends on how lively your room sounds. The Chesters are more refined and tonally neutral, if less assertive. Listen to the Sony CDP-715E if a cleaner more refined sound is wanted.

### Flatline fever

**C** My system comprises a Technics SL-PG200A CD player, Yamaha KX0-250 turntable, Pioneer A-400 amplifier, and Wharfedale 425 speakers connected with QED 79 strand cable. I want to upgrade both my speaker and interconnect cable to get the best from my modest combination of equipment.

**R Corneby, Southampton**

**A** Try Chord's Flatline speaker cable and matching interconnect; this should improve detail and transparency, making the system sound crisper and more dynamic. DNM's Reson solid core is also excellent, not too expensive, and is worth auditioning.



Arcam's ever-popular Delta 290 amplifier might just be the perfect replacement for the A-60.

### New for old

**C** Having begun to take an active interest in hi-fi again, I want to upgrade my old system so it sounds better and looks more pleasing. I've recently changed to a pair of Mission 751 speakers, which are currently used with an Arcam A-60E amplifier and T-21 tuner, a

Philips CD-840 CD player, Denon DRM-07 cassette deck, and a Rega Planar 2 turntable. I don't intend to replace the Rega, but I envisage spending about £1,000 on a new amp and tuner, possibly replacing the CD player at a later time. Mission's Cyrus equipment looks good, but it's rather expensive (especially the CD) and there's no matching tape deck. I've heard both the Cyrus III and Audiolab 8000A amps, but I don't know precisely how they compare to my trusty old Arcam A-60E.

**J Russell, Tyne and Wear**

**A** Both the amps mentioned should improve on the A-60E, in terms of bite, cleanliness, overall tightness and attack, but you may sacrifice some tonal warmth in the process. Audiolab's 8000A would be a good bet, but its superb 8000T tuner is rather pricey in the context of your proposed system. Since you've clearly been a satisfied Arcam user, why not listen to the Delta 290 amplifier and the matching Delta 280 tuner? Reservations were expressed about the latter when reviewed by Hi-Fi Choice, but it should improve on your old T-21. The Delta 290 sounds brighter and livelier than the old A-60E, so bear this in mind if your current system sounds about right tonally. Arcam

makes a cassette deck, but it may be more costly and elaborate than you want or need.

### From mini to grand

**C** I recently travelled to the UK and purchased a hi-fi system consisting of a Micromega Stage 3 CD player, Audiolab 8000A amplifier, and Ruark Talisman II speakers. Cables are Chord Flatline bi-wire and Gold interconnect. I am very satisfied with the system — it's an incredible step up from the Sony mini system I had before. However, while the soundstage is wonderfully open, I feel the tonal balance is a bit on the bright side. Is there anything I could do to get a warmer sound? I thought of adding an Audiolab 8000P power amp in bi-amp configuration.

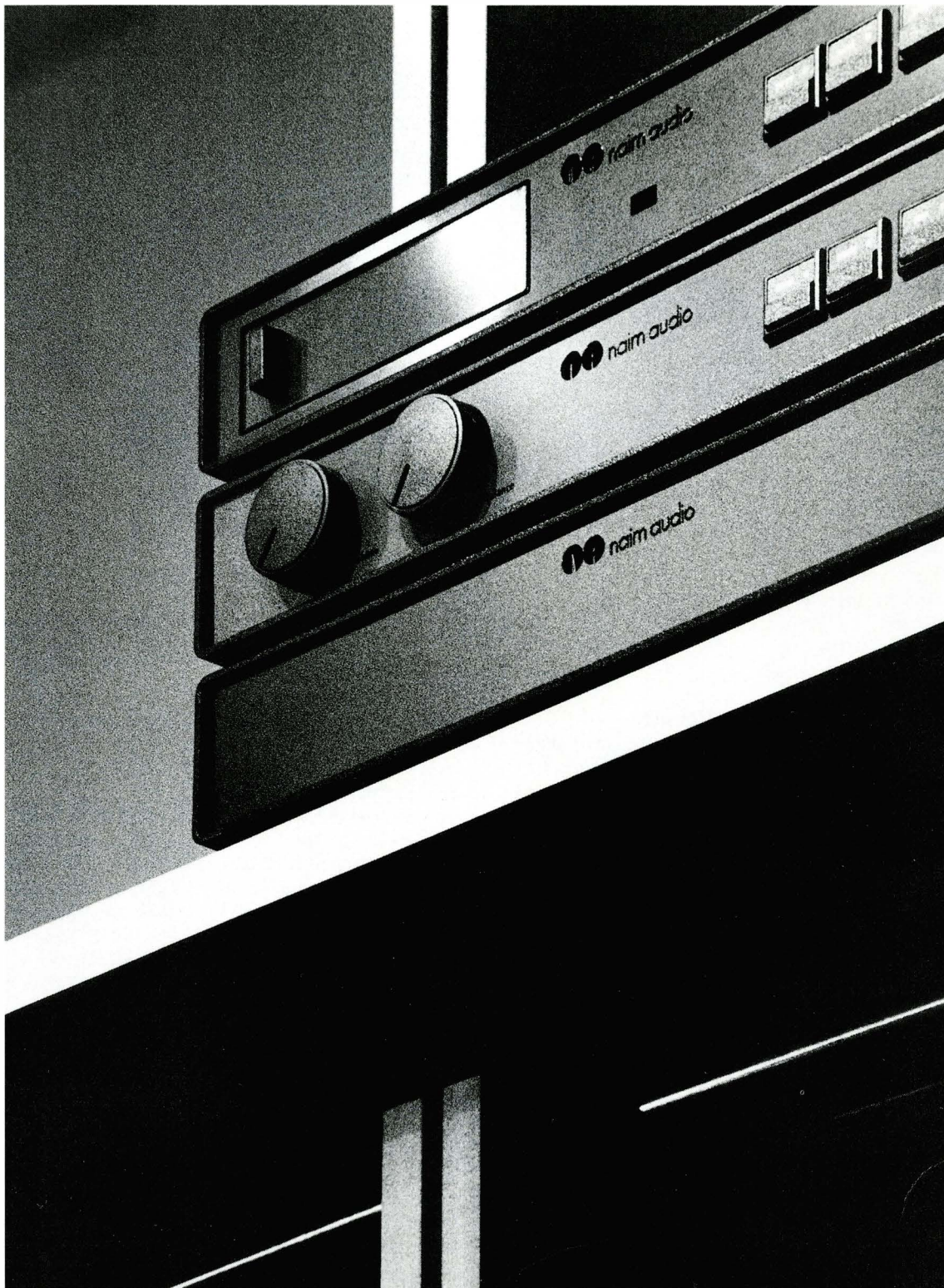
**T Thorgerisson, Switzerland**

**A** Adding an 8000P should give you a firmer, cleaner sound — perhaps reducing tonal brightness and smoothing the treble. But it's not likely to add much in the way of richness or warmth. Using an 8000P bi-amped with the 8000A might work, but the two amps do not sound exactly alike and there might be some imbalance dynamically. To reduce treble forwardness, try angling the speakers in, so their axes

Keep it on the level with Chord's space-age Flatline cable.







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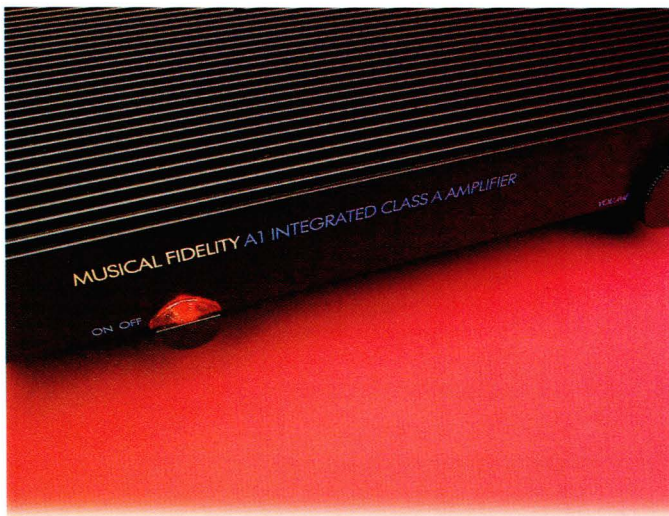
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cross in front of you. You can also experiment with the Audiolab's tone controls, which should introduce a little treble cut and some bass lift.

### Lovely veneer

**Q** I enjoy my music, and have a treasured LP collection which I play on an Acoustic Research EB-101 turntable fitted with a Glanz MG-70A cartridge. The amp is a Musical Fidelity A1 (starting to need repairs). I also have a Rotel RCD-855 CD player, Rotel RT-850L tuner, NAD 6220 cassette deck, and Monitor Audio R-352 speakers — my wife loves their wood veneer! What could I do to improve the sound with a budget of about £1,500?

**G F Taylor, Surrey**

**A** If the A1 is starting to give trouble, it's probably wise to replace it. Unfortunately, many modern integrated amps no longer have a phono stage. NAD's 306 would be worth considering, especially as it has an excellent MC/MM phono stage. Pioneer's A-400 and A-400X should not be overlooked either. If LP is still your favourite source, why not splash out on a first class turntable/arm/cartridge? There are some real bargains to be had second-hand at the moment, but if you want to buy new, take a look at Roksan's Radius/Tabriz (perhaps with their Corus Black cartridge) — an

excellent no-nonsense package. Linn's LP-12 Basik/Akito/K-5 combo is good too, especially if Linn's K-9 cartridge is substituted for the cheaper K-5.

### Desert Storm

**Q** The tweeters have blown on my pair of Gale GS-401 speakers, and I need to replace both drivers. My question is, how do I remove the chrome end caps without damaging them?

**R C Farney, Arizona, USA**

**A** If they're a tight fit, this will be very difficult! The chrome end caps are a tight press fit, and it's a two-man job to remove them. One to hold the speaker down, the other to pull the cap off. Try gently warming the cap with a hair dryer for a minute or two, taking care not to overheat it. Incidentally, later 401s had tweeter fuses; make sure these haven't blown before you go to the trouble and expense of fitting a new tweeter! Going on memory, Gale used a Celestion HF-2000 in the 401.

### The home connection

**Q** I've just upgraded my CD player from a Rotel 865 to a Teac VRDS-7. This has given me a clearer, more detailed sound which is much improved at frequency extremes.

Currently, I use the Teac with one of two interconnects: a home-made solid core or an unbranded multi-strand. The

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stylus. All of a sudden, much more of the music, and the space in which it was performed, was evident. I'm sure that the legions of Linn and Rega owners out there who still play their LPs will want to make the modest investment required for a major improvement in vinyl play."

**Andrew Marshall**

**(Audio Ideas Guide, Winter '94)**

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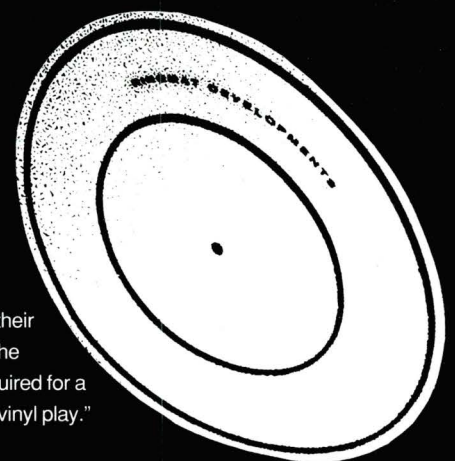
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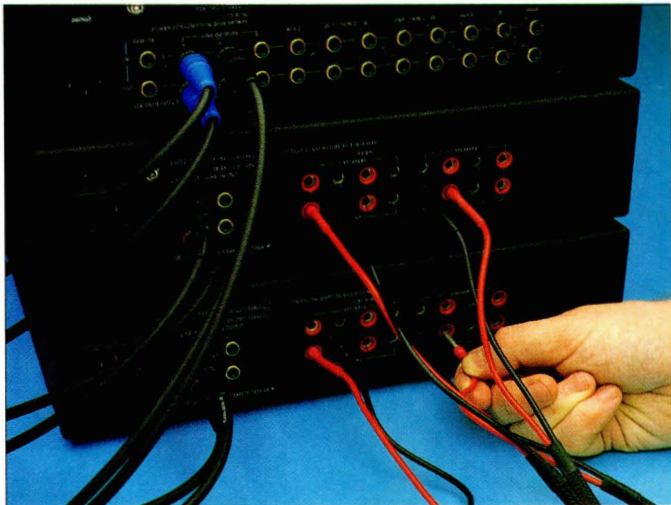
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sound with the former is crisp and detailed, but it can be wearing to listen to, as it is dynamically two-dimensional and rather hard tonally. The latter is richer with natural three-dimensional imaging. But it sounds muddled, especially in the bass. Can I put this right by using a better interconnect (say DNM?) or is my improved source revealing shortfalls in the amplifier or speakers?

**D Taylor, Guildford**

**A** You're describing the classic solid core/stranded cable difference. DNM Reson interconnect is very good indeed, but may veer too much towards the sound of your current solid core. Chord's Solid is excellent, giving more body and weight than the DNM, while Tara Labs' Quantum CD is another nice solid core that should avoid sounding too exposed and dry.

**Thai power**

**A** I own a Marantz CD-63/DAC-in-the-Box disc playing combo, an Arcam Delta 290 integrated amp, and Focus .7 series 2 way monitor speakers. I'm now interested in upgrading my system by adding an Arcam

**Solid or stranded — the great cable conundrum.**

Delta 290P power amp and bi-amping. However, I'm concerned that, because the signal path from the Delta 290's preamp section to the power amp will be shorter than that to the Delta 290P, I'll get the treble/bass signals out of sync. Why does Arcam suggest using the Delta 290 for the treble and the 290P for the bass?

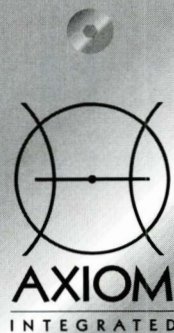
**BA Orler, Thailand.**

**A** Although the treble signal path will be slightly shorter, it won't affect the timing of the system. Arcam probably suggests using the integrated amp's power stage for the treble because the 290P has a bigger power supply and is therefore better able to deliver the extra current drawn by the bass drivers. Yet, because the ear is so sensitive to treble faults, it's often preferable to employ the better amplifier for the upper frequencies. Once again, it's a case of experimenting to find the amplifier arrangement that best suits your system.

**Will the Arcam Delta 290P sound better with treble or bass?**



(Actual Prize)



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# write on!



Pioneer A-400x: when is a Recommendation not a Best Buy?

## The times, they are a'changin'

I decided to subscribe to your magazine as I felt it to be the most subjective and believable. Unfortunately, recent events regarding the Pioneer A-400x have somewhat upset this happy relationship.

In issue 129, you praised the A-400x enough to award it a Best Buy tag. Issue 130 saw the Cyrus III pitted blind against the A-400x. Although the A-400x was slightly preferred, you felt they were both evenly matched.

In issue 138 you then inform that in light of recent new models, the Pioneer A-400x is reduced to Recommended status. I cannot understand why the £300 A-400x is only Recommended yet the Cyrus III is worth every penny of £500 and receives a Best Buy tag. Has either one of these products lost something or gained something since issue 130?

Considering the power of *Hi-Fi Choice* and other magazines in helping readers choose what list of products to audition, I feel that you owe it to readers who may have been swayed into purchasing the A-400x and are now wondering if it was the right move after all.

**FS Morrison, Glasgow**

*Both the Pioneer A-400x and the Mission Cyrus III have changed since issue 130. We deliberately used new samples, to see if later production samples had changed the performance. Objectively at least the differences were relatively minor, but they were great enough to lower the performance of the A-400x a tad, especially when set against the performance of the excellent Audio Innovations Alto. On the other hand, the latest Cyrus III actually performed slightly better in its full test.*

*Although the crown of the A-400x has slipped slightly, it doesn't change the fact that it is a seriously good amplifier. A Recommended swing-tag is no mean feat in itself.*

**Alan Sircom, Reviews Editor.**

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## Questions, questions

**B**ecause of the expense and esoteric concepts involved in buying hi-fi separates, I went to considerable lengths to research and compare products before buying my first decent separates system. Almost all of that research centres around reviews published by *Hi-Fi Choice* and other audiophile magazines. However, three apparent problems with the testing and review process have begun to cause concern as I start the upgrade slog.

First problem — surely your status as neutral judges of good and bad gear is (at least) severely compromised by the fact that you, and other magazines, depend on advertising revenue from the manufacturers of that gear?

Second problem — during a recent visit to a West-End store I was told that many manufacturers routinely modify equipment supplied to magazines for review. One manufacturer of budget separates, it was claimed, even has a team of technicians whose sole task is to tweak review equipment. Was this merely an over-the-top sales ploy, or is it true? If it is true, what measures do you take to counteract it?

Third problem — why is it that reviews of a product can differ to such an extent between magazines, particularly when speakers are involved? Your recent group-test of TDL's *Near Field Monitor* (issue 130), to take but one example, contrasts violently with another magazine's near-rapturous review of it.

*Hi-Fi Choice* is clearly the least 'gushy' and the best balanced hi-fi magazine around. The probable reason is that lab measurements are an integral

part of its review process. But bearing in mind the fact that buyers rely so heavily on magazine product tests, I think that clarification is needed on these three points

**Tim Jones, Leatherhead**

*Point one. Hi-Fi Choice has an international reputation for producing unbiased reviews, which are not influenced by advertisers at all. As fate would have it, when manufacturers are present at our blind listening sessions, often the most vociferous critic of a product will be the person who manufactured it in the first place. We have dismayed many an advertiser in the past with unfavourable reviews of products. We have to remain aloof from advertising strategies and campaigns, as our only customer is you, the reader.*

*Point two. Although there have been cases of 'tweaked' products supplied in the past, the magazine is unaware of any company producing 'specials' for review at the moment. Generally, our rigorous test procedures mean that reviewers can usually spot a tweaked product pretty quickly. However, such samples can lead astray subjective-led tests and we do investigate such claims very seriously, even buying samples from dealers wherever possible.*

*Point three. I would hope that the above two points do not influence the reviews of other magazines on the shelves. Differences of opinion are, however, commonplace and dependent on tastes in music and listening parameters. About 80 percent of all the reviews show a remarkable degree of consistency, but generally the more controversial ones are the ones that get noticed.*

*Hi-Fi Choice has its foundations fixed solidly into the bedrock of impartiality. We have every intention of staying that way.*

**Alan Sircom, Reviews Editor.**



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**here is no such thing as magic, even when**

the effect is as dramatic as a stack of Mana tables. Two years ago, I bought my first Mana table, a simple *Sound-Frame* that cost £125. The people at Mana could not explain why it worked. I have no turntable, but they suggested trying it under the tuner and power amplifier as well as the CD player. They recommended experimentation. This was a very unkind thing to suggest to a professional researcher, for unexplained phenomenon are notoriously time-consuming to explore. I took them at their word, and have spent far too many evenings and weekends listening, theorising and testing those theories. The results are worth it.

The system I have built only uses extra levels of table when the improvements are obviously greater than the equivalent expense in electronics. It pushes my existing system to new limits. Whenever a table made little difference to a component, I removed the table from the reluctant component and tried it under something else. As I bought more tables the system improved. Eventually the rest of the system had improved to the point where the reluctant component genuinely needed the extra level. This is trial and error, but performed systematically it was possible to take a Mana-based system to new extremes.

My system now has 32 Mana surfaces costing £5,500, which is as much as the equipment it supports, but the quality of musical resolution and timing exceeds the most expensive systems. When friends visit, I often connect a cheap CD player and put it on a stack of Mana tables. An old £150 player on a stack of twelve tables sounds better than a top £1,500 machine.

Everyone who visits notices the

sound quality. The effect is immediate. My favourite game is to start with good AAD recordings from the '50s or '60s. Inexpensive systems tend to pronounce the differences between analogue and digital recordings. With a well Mana'd system these older recordings have great drama and detail. It is like entering a time capsule, listening to sounds that have not been heard so clearly since they were performed.

Then, I stun the unsuspecting visitor with the dynamics and wider bandwidth of recent recordings. Organ music from Liverpool cathedral shakes the walls, full orchestras produce deep and precise sound-stages, while the vibrant and warming sounds of bass guitar and the sharp and powerful guitars of the Gypsy Kings are all superbly reproduced. The visitors love it. 'Frightening,' they often say, but they don't want it to end. The hours pass quickly. The biggest challenge is to persuade them to go home.

### **The Mana system**

The traditional Mana support is a series of small tables arranged in a stack. At the top and bottom of each layer are metal spikes, and between each table is a board. These absorb some vibration, while the metal structures transmit the rest of the vibrations without introducing new resonance. Mana uses L-section angle iron rather than tube to minimise ringing. On the top *Mini-Table* there is a heavy sheet of glass, which supports the hi-fi component.

Mana speaker supports are slightly different. The top of the stand is glass and the spikes of the speaker are replaced by small nylon feet. At the back of the stand there is a bar with spikes gently pressing the speaker forward against a stop at the front.

Initially my stacks were based on a *Mana Reference* table with five levels of *Phase 3* mini-table above it. Two years ago the talk at Mana was that a stack of six tables was close to ultimate for turntables and CD players. Amplifiers needed two or three levels; tuners and speakers needed one or two. In two years much has changed. My own experiments and those by Mana have shown that amplifiers and power supplies benefit from large stacks of supports. The power amplifiers seem to be the most demanding of all.

This presents obvious problems. The cost of a six-stage stack is £900. So proper support for a system with a CD transport, DAC, and two amplifiers would cost £3,600 and the room would be taken over by four vast stacks of table.

A solution emerged. For several years, Mana has produced an amplifier rack. This is a metal frame with three to eight levels, each consisting of a glass sheet supported on spikes. It is a natural extension of the *Reference Table*. A year ago, Mana also introduced the *Sound-Stage*. This is a shallow metal frame and board that is about 7cm high. The large boards are springier than the small *Mini-Tables* and large enough to place under a *Reference Table* or an *Amp Rack*. The effect of putting a *Sound-Stage* under an *Amp Rack* is that everything on the rack improves.

The cost of a *Sound-Stage* is £200, so for a five-level amp rack this is £40 per component. That works out much cheaper than a £150 *Phase 3* mini-table. What is the limit to the number of Mana tables in a stack? Not physical stability, because this could be resolved by making increasingly wide *Sound-Stages* for the bottom-most levels. Presumably there will eventually either be a diminishing improvement, or some part of the systems will put a limit on what can be achieved with the rest of the system; but the last time I added an extra level under my amp rack there was a significant improvement. Fifteen levels should be distinctly better than twelve. However, with the extra dynamics, the speaker stacks would also need to change from five to seven levels.

*He says he could give them up tomorrow, but for science writer Adrian Cowderoy Mana tables are a hard habit to break. This personal account explains why!*

# 32

# steps



Systems demonstrate a range of improvements as Mana tables are added. Most of these improvements apply equally to any component, whether source, power supply, amplifier or speaker.

**The Mana effect**

The most dramatic effect is on the bandwidth, which becomes wider and apparently flatter. For example, when I bought my Ruark *Talisman's* they played down to about 30Hz. I tried standing them on a couple of *Phase 3* mini-tables, resting the spikes on boards. The bandwidth extended sufficiently to reproduce double-bass.

With a second *Phase 3* mini-table, I could just hear the lowest organ notes in a favourite piece. With a total of four levels, the deep notes were loud and the entire frequency range dropped below the 2Hz limit of CD. (Take the covers off and watch the speaker cones moving in and out during the deepest organ notes.) Those deep notes are some of the most dramatic in the entire frequency range. They are essential for organ, double-bass and bass guitar tuba. Film soundtracks make particularly good use of deep bass.

The improvements to high frequencies are just as noticeable. The detail becomes more precise. Cymbals sound metallic and produce a musical cascade of sounds. Violins can be heard so clearly that the differences between them are blatant.

With Mana tables there is more detail in the music. The soundstage can be as deep and precise as the sounds of the real world, and the timbre of instruments and voice becomes completely realistic or deeply involving (depending on the position of the microphone). Moreover, the extra detail makes it possible to listen to music at much lower volume levels than before. At the other extreme, loud music no longer gives me migraines and visitors who 'hate' loud music enjoy extremely high volume levels. Even the equipment sounds happier, enjoying the loud notes, never sounding over-stretched or becoming physically hot.



Level-U-like: Adrian's Mana tables just keep on growing.

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Of all the musical effects of Mana tables, the most obvious is the improvement in slam. Certain reviewers use the word 'bass slam', as it shows the quality of their systems. However, the effect occurs throughout the frequency range and is not a slam but a resonance in time with the music. It hits you in the stomach, chest, neck and feet. Very desirable, but it requires at least five levels under decent power amps.

This is not simply a matter of power rating. It relates more to the ability to produce and hold bursts of power many times the rated level. (The effect is exaggerated by recordings which are close-miked.) When a system has high slam potential the speakers require several tiers of wood, glass and iron to maintain control.

When I first heard the display set-up used by Mana Acoustics, it had impressively deep notes and great energy, but the sound of classical music played through Linn *Isobariks* was embarrassing. Now the *'bariks* are on four levels rather than one, and they sound beautiful. At home, my own system was built for classical music, but it now plays rock with equal enthusiasm.

As the number of Mana stages increases, so background hiss becomes quieter. Noisy CD players and amplifiers become quiet. I believe that it's possible to hear -100 dB notes recorded on cassette with Dolby C and a standard metal tape. The switching mechanisms on all-digital recordings are often noisier than that. There are clearly studios which need Mana tables — imagine the quality if a stack of Mana tables was used under the tape recorder.

The final characteristic of the Mana effect was only noticeable after adding several stages. I found the positioning of the speakers had become unimportant. Within the listening room, the position of the furniture and speakers has limited effect. The music even sounds good upstairs.

### Hi-Fi components

Mana tables were originally invented for turntables. The surprise was that they worked for every piece of equipment. That includes solid state electronics, valves, and power supplies as well as CD transports and speakers.

My experience, and that of some other Mana customers, is that the amplifiers need even more levels than the main source. It is worth spending good money on amplifiers. I used to have a bi-amped pair of Albarray *S508s* and an Albarray *AP4* pre-amp. Subsequently, I changed to a pair of Albarray *S408* monoblocks equipped with *Powerblocks* from Avondale Audio. The

textbook power rating is only 35 Watts compared to about 90 Watts before, but the perceived sound levels are higher than before. The monoblocks also improved detail. They produced so much more slam that I spent the first week unnecessarily terrified that the speakers would be damaged.

The sound a Rotel *RCD-965BX* CD-player produces on a stack of Mana tables is well beyond the best free-standing CD players. And spending £141 to have it re-clocked by Trichord was worth every penny. But in the context of such a revealing system I realised an external DAC would be worth having. I auditioned several, they each worked well on five levels but they needed at least ten to reach their full potential. The final candidates were the Arcam *Black Box 50* and the Trichord *Pulsar One*. The *Pulsar* is a superb piece of engineering. On a five-stage table there was an obvious improvement compared to the *Black Box*, but when I moved them to a ten-stage table the differences were small. So I bought the Arcam.

Cassette recorders benefit enormously. A Nakamichi *DR-1* with Maxwell *MXS* tapes can be made to sound almost identical to CD. Tuners love Mana tables. I use a Revox *260BS* with a Galaxy 17 aerial. Radio 3 from the Wrotham (Kent) transmitter sounds superb; most of the other radio stations compress the dynamics and frequency of the music to a grotesque extent. For about a year there was a competition between the CD player and the tuner as to which could produce the best musical detail. A good competition, but when the CD player reached six stages the tuner started to lag. Presumably the BBC has no Mana tables. Yet.

I made embarrassing mistakes trying to improve the sound of my Ruark *Talismans*. First, filling the base with lead shot deepened the bass but muffled the mid-range. I removed the lead, but by then I had started to think the Ruarks were making strange sounds.

It was some time before I finally understood that the sounds were being created by the amplifiers. That lesson was reinforced every time I added a new level under the speakers.

The effect of Mana on Nicam video recorders was a surprise. With two levels, sound quality became less clinical and the picture quality and tracking improved. I have even tried using my Toshiba *VX6* VCR on a Mana twelve stack. Pre-

Hats off to speaker stands — Mana style.



recorded videos were a little better, but the sound quality of broadcasts was stunning, and the quality of the recordings from CD was only slightly inferior to the original.

It makes a mockery of suggestions that we need to quadruple the amount of data on a CD. The inferior sound people hear I believe is not coming from the CD but from the replay system.

### The theories

The effect of Mana tables is to damp vibration. Evidently it does this very much more effectively than any other damping method for audio equipment. What is not clear is why the effect of ultra-efficient damping is so great. An unexplained phenomenon. However, scientific methodology does not require that a phenomenon is explained. It requires only that it is measurable and repeatable. The theories can come later.

An early explanation for the Mana effect was that strong music causes such massive vibrations that equipment does not work properly. This was easily disproved by moving the speakers into a separate room.

Perhaps a better explanation comes from the difference between a CD player and a computer, as Mana tables have no perceptible effect on computer performance. Maybe the electrical and physical components within equipment resonate in a similar way to musical instruments. All that is required is that they are free to vibrate naturally. This wonderfully romantic theory implies that hi-fi systems make music as well as reproduce it.

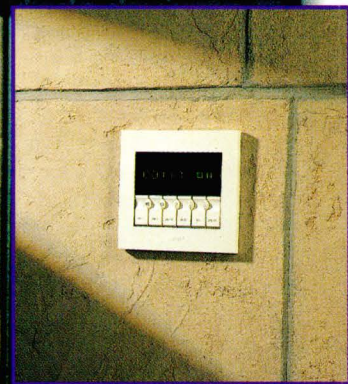
### Future perfect

The effect of a well Mana'd system has to be experienced to be believed. Huge waves of music roll out and wrap round you. It is comforting, thrilling, absorbing. These simple tables make the equipment disappear and leave you with the music.

In the last two years music has become more important to me than ever before. Good music is as addictive as alcohol. It makes television seem repetitive. Unfortunately, building music systems is expensive. Since discovering the ever-increasing Mana effect, my car has become rusty and the furniture needs repairing.

In the hundredth issue of *Hi-Fi Choice*, Paul Messenger wrote that the biggest revolution of the previous decade was the spike. Maybe it will not be long before he writes that the Mana system is the most important invention to have hit the recording industry since the vinyl record.





# Hi-fi in every

**Linn's new system can fill a house with music — and more. Alan Sircom Knechts with the house that Linn built.**

**Y**ou knever know what Linn will come up with knext. First came the LP12 turntable in the early 70s, followed by loudspeakers big and small, electronics and a lot of attitude. Today, Linn proudly ushers you into the next millennium, courtesy of its new Knekt distributed system.

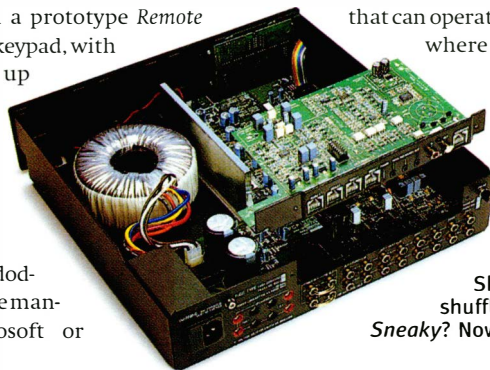
Knekt moves Linn Products still further from the stratified atmosphere of tweaky audiophilia and offers real-world music around the home. According to Calum Stewart, Linn's Production Engineer on the Knekt pro-

ject, "Knekt has been in and around our minds for a couple of years. We came up with the balanced audio distribution design well over a year and a half ago and we have, in fact, had Sneaky/Majik-based Knekt systems for the past 12 months. At that time, we came up with a prototype Remote Controller Unit keypad, with just volume up and down, but we decided to make the quantum leap to the current RCU."

Knekt is a doddle to use. In the manner of Microsoft or

Apple in the computer world, the £300 Knekt RCU uses computer-style software to present a simple, intuitive, user-friendly interface. Besides the usual volume controls and power button, the front panel has three key buttons — Where, What and Do — that can operate systems anywhere in the house.

This simply asks you where the sources are, what



Pick a Sneaky. Shuffle, shuffle, shuffle. Is that your Sneaky? Now that's Majik!



source you want to listen to and what you want it to do. The current Linn handsets incorporate this where-what-do philosophy. You can call up the main system sources and effectively bring them into the room with you. It even sets up favourite tuner presets for each room, regardless of those on the tuner itself. There is also a '?' button, providing interactive help on a button by button basis, in case you are new to the Knekt system.

For the past five years Linn has been engineering multi-room friendly concepts into its constantly expanding range of digital and analogue electronics. First was Linn's Line Remote, which fed communications signals along pairs of phono interconnect cables. This meant that effectively only your Linn Karik CD player needed to be visible, with all the other Line-Remote-speaking Linn equipment hidden away. The IR receiver on the Karik picks up all the commands and feed them through to the other components.

### Linnterknexion

Knekt, as it stands, is a separately controlled system that looks into the tape output of the Linn Kairn preamplifier. So whatever source is selected on the Kairn, Majik integrated amp or the similar Wakonda preamp, is distributed to the four rooms. The stand-alone £300 Line Driver connects to the Kairn's tape output, but you don't lose the tape

age-sensing system, so that the system will switch over automatically; if audio is detected for example, from a TV set. This requires an RCU that effectively becomes the front panel of the Line Receiver. Commands are then directed from the keypad (or through the infrared receiver in the RCU) down to the main system, or the local sources.

The RCU can be programmed with up to ten macros, each capable of containing up to ten instructions, that can be tied to ten alarms, each of which can be assigned to three different time/day/date formats. These macros can also be assigned to specific rooms, giving different levels of access privilege. So you can set the system to play a particular track on the CD in the bedroom, and a predetermined volume at a specified time on weekdays only.

At the moment, you can connect two Line Drivers together and supply up to eight rooms. From any of these rooms you can access local sources in that room, or the main system. You cannot access systems in other rooms and you can't multi access main system sources. So, if someone's listening to the main system's CD player, you can't listen to the tuner in another room. However, the forthcoming Intersekt system — which runs along Knekt cable/RCU architecture — will offer eight sources to eight rooms in its basic guise and can be expanded up to a substantial 16 sources in 128 rooms.

# room?

loop, as the Line Driver unit has a further set of tape outputs. You can also get a £200 Sneaky driver to go inside a Majik or Wakonda, which links to the tape.

There's also the £200 Sneaky Line Receiver which can be fitted directly into the front panel of a Majik or Wakonda. This allows either product to access the sources in any Line Driver equipped system in the house. This remote system, armed with an infra-red receiver, can also be used to access non-Linn components in the main system (as long as they're remote controllable).

Alternatively you can have a stand-alone £300 Line Receiver in a room. This acts as a three input line-level preamplifier, with its own switch-mode power supply. One line input has a volt-

All Knekt products are balanced line level units. Balanced operation confers greater noise immunity than conventional single-ended operation. Debatably this is unnecessary in conventional hi-fi systems, but for long cable lengths running behind 'noisy' apparatus, balanced operation is very handy. Linn tested its noise rejection by running 1km of cable around the Linn factory with, we're told, no appreciable loss in quality.

The RCU is basically a computer in a lightswitch; with a display, a keyboard, ROM, RAM and a completely new technology called flash memory. The flash memory component allows you to revise system software, erasing the existing program as it is downloading

## Multi-room alternatives

**T**hings have come a long way since the days of the basic speaker switching box. At their best, multi-room systems produce sound quality comparable to any audiophile system, writes Steve Moore.

Multi-room proper started eight or nine years ago in the US, where homes, wallets (and appetites) are bigger than here. In addition, good quality in-wall speaker systems meant that house-proud music lovers didn't have to put up with stacks of black boxes in each room.

Indeed, consumers so value the discreetness and ease of use of built-in systems that many housebuilders now prewire for multi-room audio and TV. These systems generally split your home into different zones — so the family can listen to different music in each room. You select what you wish to listen to using a keypad or remote control that 'talks back' to the main hi-fi stack.

Home owners have noticed the increasing amount of electronics in their house. Multi-room systems (for video and telephone distribution as well as audio) avoid the mess of cabling and poor functionality by integrating these systems into the design when building or refurbishing. The type of system chosen depends on the quality and sophistication required.

"Multi-room" systems fall into four categories:

### DIY (basic)

**Type:** Audio distribution with local volume controls in each room, but no source control.

**Example:** Existing system plus QED Transmatch (speaker switch/impedance matcher) and loads of cable.

**Pros/cons:** These systems suffer loss of power and quality due to the long lengths of speaker cable.

### SIMPLE INFRA-RED

**Type:** Audio distribution with local control of volume, source & function.

**Example:** B&O, QED Roomlink, Xantech (a manufacturer of infra-red & switching products).

**Pros/cons:** In addition to the above, systems of this sort generally don't allow for local sources (the sound from a bedroom TV, for example), offer little or no feedback and don't allow different music in other rooms.

### MULTIZONE

**Type:** Audio distribution with control, with the house split into different zones, so that you can listen to different sound in different rooms.

**Example:** Bose (2 zones), new QED system (4 zones), AudioAccess MRX (6 zones).

**Pros/cons:** These systems tend to be differentiated by ease of use and cost issues, rather than quality of sound. Some brands of source equipment are more easily integrated than others.

### MULTIZONE AND FEEDBACK

**Type:** Audio distribution with control of, and feedback from, main system.

**Example:** Linn Knekt, Meridian, Sony DST (not available in UK).

**Pros/cons:** These systems distribute a balanced or digital signal, resulting in better quality and simpler cabling. Decent feedback means the systems are easier to use. These systems generally involve the manufacturer's own source equipment (sited centrally), with other components (amplifiers, local sources) distributed around the house. They also offer the ability to control other products from the remote rooms.





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the new one. So, the installer doesn't have to take the RCU out of the wall to upgrade the system. In fact, they can download the software from the main system to all the remote rooms — the installer doesn't even need to take the RCUs to the programming computer, but just has to take a portable PC to the main system.

### Linnstallation

The Knekt RCU is also intended to control things other than hi-fi, and there is a proposed circuit switcher waiting in the wings. This is a programmable six-relay matrix, in the same size case as the stand-alone Knekt boxes. Each relay will be capable of handling 240V at eight amps, so that you can switch mains appliances on or off, and will have programmable relays for home automation products like curtain closers and burglar alarms. It will also be capable of switching loudspeakers, increasing the number of Knekted rooms still further.

All the custom installation software is written for the Microsoft Windows 3.1 operating system and is downloaded via a PC's serial port using Linn's wee *Doufer*. This converts computer-standard RS232 code into RC5 remote control commands. This downloading is so fast that a new room set-up only takes about 12 seconds. Knekt isn't directly controlled by a computer yet, but it's a small leap from a wee *Doufer* to a big *Doufer*, which would have a processor on it, to allow two-way communication between computer and hi-fi.

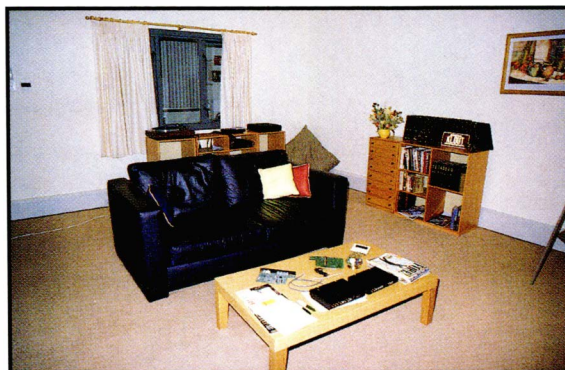
There is no reason why you couldn't have a software version of the RCU on a computer screen and use the mouse to push the buttons, for example. You could even call up the system from a remote location, using a PC and a modem, and feed it commands — just the thing if you're lying on a beach in Barbados and you forgot to close the curtains. As the hardware already exists in Knekt, it is simply a question of software development.

The software is Linn designed and upgradeable. It is effectively future-proof, and fits in with the company's philosophy of supplying upgradeable products whenever possible. Ultimately the software could be configured to work with non-hi-fi appliances that you'd want to control in the home. At the time of writing, Linn has remote control codes for a range of non-Linn source components, including Nakamichi and Pioneer multi-disc CD players. It's currently expanding this code library for other non-Linn sources. The communication link is

one sided, however, as Knekt cannot distribute display information from non-Linn sources.

### Linnteraktive

In the broadest sense, Knekt is for people who are interested in interactive multi-room audio or home automation. According to Brian Morris, Linn's Head of Press and Promotions: "They may or may not have an interest in music to the extent of being an enthusiast, but perhaps they have seen Knekt in place at a friend's house. Word of mouth is creating this market. It's too



**In the heart of Linn's factory lives a full-on Linn system, Knekt-ed to several rooms.**

early to say how this new market will polarise, but certainly there are people who want multi-room; not just for music, but a solution to control many aspects of home automation.

"It hinges on the concept of the home being a safety net for the family, as Knekt could interact with home security systems with as much ease as it copes with hi-fi. The barrier for people is the perception that it will cause a lot of upheaval when wiring. However, the Linn Knekt system is far less intrusive than many in this respect."

Linn has attempted to make the installation process as painless as possible, for both the installer and the end user. As ever with multi-room systems, the cables are best laid during the last stages of building, although the Knekt RCUs can be fitted after all the other decorations are fitted. The RCU itself fits into a custom back box and comes supplied with two bezels to blend in with UK and US light switches. The bezels can be painted and a black facia/button RCU is also available.

The connectors, cables and all tools are industry-standard FCC68, sourced from common-or-garden trade catalogues. There is no soldering or messy crimping involved and the wiring is simplicity itself to terminate on site.

To prevent any confusion, each part and its application is precisely specified by Linn, both in its computer-based 'manual' and during the intensive two-day training programme all prospec-

tive Knektors have to undergo at the Linn factory. This training course is split evenly between Knekt and general multi-room practices, covering issues such as siting RCUs to shield them from excess light, while keeping them accessible and cosmetically acceptable to the customer.

Linn is determined not to compromise the sound quality of systems that are Knekted together. The intention is to convey the sound quality from a high-class source like the *Karik* CD or *Kremlin* tuner throughout the house. To this end, Linn has introduced the £300 *Sekrit* speaker. Available in dark grey or white, the *Sekrit* is a two-way bi-wirable loudspeaker designed for in or on-wall use. The in-wall models are supplied backless with a removable port and adjustable tweeter output, thereby maximising flexibility for odd walls or room placements. The on-wall unit is less adjustable, but can be supplied with either a mounting bracket or a new polymer stand.

Note every Linn dealer will stock Linn Knekt. But there are groups of retailers within Linn's network that are experienced in multi-room installation. The system is already appearing in some prestige locations, both in this country and the USA, where the whole multi-room ethos is better developed. Knekt has been installed into the newly-refitted QE2 and is rumoured to have been chosen for the private home of a member of the Royal Family.

### Linnintegration

As I was writing this, one cynic asked if the Knekt system would prove any better than putting a midi system in every room. While I understand the sentiment, I have to say that it is slightly misguided. The beauty of Knekt is that the main sources can be assigned to other rooms; that way, you get the sound quality of the main sources without having to buy several CD players. Those who opt for the Knekt system will do so because it is discrete and flexible. Can a midi system also control the burglar alarm, turn lights on and off throughout the house, or even impose a curfew in a child's bedroom, by turning the music off at a prescribed hour?

Linn's Knekt system is about the most flexible, future-proof multi-room system around. Linn once ran an ad showing an electric food mixer with a caption that ran along the lines of: 'Some people think this is a hi-fi'. It's ironic that Linn is now producing a system that might one day turn on your food processor for you.

Linn Customer Helpline: (0500) 888909



If you too are fed up with feeding your CD player an extravagant diet of £14.79 discs, it may be time to switch to the one hi-fi source component that doesn't go on costing money after you've bought it, 'cos the music it reproduces comes free of charge.

The UK radio airwaves have never been more crowded, nor have they offered a greater range of choice, so even though the medium no longer enjoys the same pre-eminence as fifty years ago, the current situation is positive proof that radio has a bright future, irrespective of televisual developments. How good is radio as a hi-fi source? At its very best, seriously good indeed, though you do have to search out the high spots. These are inevitably found on the FM band, because of AM's practical limitations.

Admittedly, much radio is heavily compressed, partly to help motorists and walkpeople hear what's going on over high background noise. And while it's true that many stations do compromise sound quality this way, so do the studios that make most pop recordings in the first place.

There's no denying that the transmission of a recording will never match the direct reproduction of the same recording in the home. 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 investing in a good quality hi-fi tuner (and aerial).

#### MIX OR MATCH?

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 to go for a tuner of the same brand as 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 electronically to provide unified remote control. Furthermore, it's a racing certainty that the tuner designer will have used his company's amplifiers when developing the tuner, so the two are likely to blend well in the subtler aspects of sonic compatibility too.

If you already have an amplifier, you'll want to know whether its partnering tuner works well in an absolute sense. Will it fit your requirements and represent reasonable value for money, even though you may well be prepared to spend a handsome price premium to get the perfect cosmetic match? If you don't have an amplifier, you'd better choose one before you start worrying about tuners!

#### WHAT'S IN A TUNER?

Although they are superficially straightforward devices, the 'real world' evaluation of a tuner can be boiled down to an

**Paul Messenger casts his net wide and lands a premium catch: sixteen of the best tuners that money can buy. Mayonnaise or RDS with that, sir?**



equation which takes into account price, RF (radio frequency) performance and sound quality. However, this is a considerable oversimplification. The internal architecture of a tuner consists of a least five distinct stages, from the reception of the aerial signal down to its final conversion into a stereo audio signal.

The first task is to receive the incoming transmissions, which is where the aerial plays an important role. The tuner has to make sense of the whole mish-mash of signals coming down the coaxial cable, a mish-mash which will vary dramatically from one place to another.

The 'front end' and intermediate frequency (IF) strip have to extract the wanted signal from the ether – and preferably nothing but the wanted

signal. The selected (IF) signal must be converted into audio and then decoded from a multiplex stereo signal into left and right channel outputs. This in itself involves a fair amount of processing work, which in turn leads to sonic differences between the various models.

The tuner designer faces a number of dilemmas when creating a product within a fixed budget. Should the tuner be as sensitive as possible, at the risk of overload on strong signals, or should it have a more robust front-end which is ultimately a little more 'deaf'? Should the IF bandwidth be wide for best stereo and lowest distortion on strong signals, or include a narrower option to dig out weak signals next to strong ones at some expense in sound quality? Should the signals be rigorously filtered to avoid interference, or is a gentler approach more sonically acceptable?

Without even considering the presentation or 'user interface', this incomplete list of designer choices allows many permutations. Which particular set of choices suits your particular need will depend on where you live (relative to a transmitter) and what sort of listener you are, from strict audiophile through to avid radio freak.

#### AERIAL DISPLAY

Why should you go to all the trouble and expense of putting up a damn great FM roof aerial, when your portable and personal radios function perfectly well using cheap indoor telescopics and headphone leads?

Contrary to popular misconception, the roof aerial is not primarily needed in order to get lots of signal strength, though that's a nice bonus. The really important factor is to pick up a clean signal, as free as possible from mucky reflections. So get the aerial as high up as possible, pointed in the right direction and with an uninterrupted line of sight in the direction of the stations you require.

Conventional FM aerials are all roughly the same width, but they come in dramatically different lengths, according to the number of rods (or elements) in the array. These act like a zoom lens; the more elements, the greater the gain, but the narrower the angle over which it is effective. A narrow beam is a positive advantage in cutting down unwanted reflections or limiting the pirate effect, but it can be a nuisance if you want to pick up good signals from diverse transmitters.

The ultimate is to combine a high-gain multi-element antenna with a remotely driven rotator. The majority of us settle for something a little simpler and less costly, chosen as a good compromise for more advice contact the Confederation of Aerial Industries on 0181-902 8998.

#### DO YOU REALLY NEED RDS?

The BBC originally hyped RDS as the most important radio development since the transistor, but I suspect someone ordered a straightjacket when the idea of putting teletext on the radio was first mooted.



# HOT TUNERS





RDS (the radio data service) is not the same as teletext, but follows a similar concept of adding a stream of digital data to an existing broadcast service. Whereas TV's teletext supplies information pages for on-screen display, FM radio's RDS has had to look around for its own applications.

This it has done, but most of the functions are more helpful for the motorist than the home listener. The transmitter data includes a variety of information about the station, including the station name, alternative transmitters carrying the same programme, details of the type of programming, and a clock, to name but a few. The latest upgrade to RDS is the Extended Other Network, which can display yet more text, including track title and artist name.

RDS can enable a car radio to retune itself automatically to the strongest local transmitter of a network, or even interrupt such a programme with a traffic announcement from an alternative local station, both of which are very handy, but of little relevance to a hi-fi radio. Here, the most useful functions are the ability to display the station ID or the clock, and perhaps search for other stations of similar types, although RDS is only received and interpreted on reasonably strong signals, not the weak and distant mono ones.

#### DAB — A POSSIBLE FUTURE...

It's as much habit as anything else, but we've all come to accept that hi-fi radio is the terrestrial broadcast FM radio network, and vice versa. The two have effectively become synonymous. However, it may not stay that way for long. Satellite transponders are already beaming down a variety of high quality programmes (including the BBC World Service) from space, and the BBC has announced that it intends to start up a digital radio network, dubbed Digital Audio Broadcasting, from terrestrial transmitters during the course of 1995.

Does this mean that FM radio is getting out of date, has had its day or it's on the way out? Not in the slightest. The 50 million plus FM receivers in regular use around the country will continue to provide broadcasters with potentially enormous audiences for decades to come. The new services may well provide alternatives, but it's far too early to predict just how practical and successful they will turn out.

The limitation of current radio satellite services is obvious — you need a focused dish aerial to pick them up, which locks them to the family TV and ensures they'll be ignored. The possibility of future, more practical satellite-delivered services should not be ignored, though that vital factor known as the installed hardware base will have to start from ground zero.

This is potentially the biggest hurdle facing DAB. The new service is entirely incompatible with any currently existing radio system, so it will take many years for radio listeners to graduate to the new technology, especially if the initial entry price is high. By transmitting cleverly coded digital signals from cellular style transmitters DAB has some potential benefits, especially in avoiding the unevenness of FM reception for mobile (in-car) users in urban areas. It can also offer up to 40 different stations organised into seven sub-groups. But will that be sufficient to tempt existing radio users to change format?

# 16 TUNERS FOR YOUR SHOPPING LIST



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#### Aiwa XT-950 £150 (Recommended)

Aiwa's £150 XT-950 is a little above the beer budget benchmark, which explains why it's pretty well stuffed with features. The box is taller and deeper than most, though the only well-filled part is the fascia, which has an unusually large collection of buttons and a quite elaborate display. There's even a remote control sensor, but no handset, nor any mention of one; neither is there any system remote socketry fitted on the rear. Should you have an XA-950 amp, however, you'll discover that its handset can be used to change the preset channels.

The switchable FM selectivity only adds one extra filter, which gives selectivity just a little better than some two-filter sets, but is no match for a full complement of four. Nor is the fitted local/DX switch as effective as an external passive attenuator when it comes to easing overload problems. Other features include an FM mono/stereo switch, and a reasonably useful signal strength meter. The rest of the ergonomics were initially confusing, and the preset labelling altogether too tricky for its own good. RF reception performance is reasonably good, though AM was less so, which is backed up by the lab measurement findings.

Sound quality is above the budget average, if

pretty tacky by audiophile standards. The mid-band is decent enough, with good dynamics that make voices suitably expressive, and a reasonable freedom from significant coloration. But the treble sounds both suppressed and slightly detached and the net effect is not particularly sweet or transparent, but fortunately steers clear of unwanted aggression.

One would hesitate to describe the XT-950 as special in any way. Neither the bulk nor the ergonomics are particularly helpful, but sound quality and RF reception are both a shade above average, so Recommendation is appropriate at the reasonable price.

(Reviewed issue 129)

### New products

These tuners are all recent arrivals, and have yet to undergo formal Hi-Fi Choice tests. All other models have been tested previously, earning Best Buys and Recommendeds as marked.







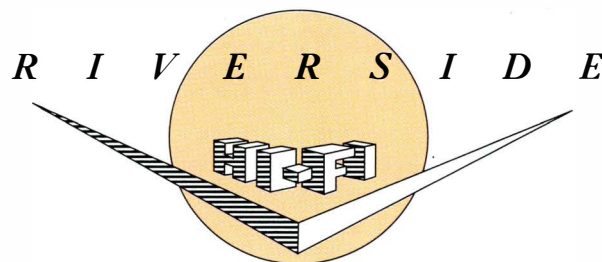
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### Arcam Alpha 5 – £220

**A**rcam's £220 FM-only Alpha 5 tuner is a perfect match for Arcam's identically named and ever-popular budget amplifier. It costs nearly as much as the amp, which puts it a little above the budget tuner pack. The obvious question is whether it deserves a premium price.



The final verdict will have to await our full technical review, as this brief hands-on session does suggest some equivocation. Basic sensitivity is high, but the ability to discriminate the weak from the strong is very limited, while some susceptibility to front end overload tends to suggest that the Alpha 5 might be better suited to rural than RF-congested urban environments.

Matching the Alpha amps dimension for dimension, it's a neatly styled slimline package with relatively few features and facilities. Ergonomics are refreshingly straightforward – it's a pleasant change to find a tuner without some stupid microprocessor which thinks it's smarter than the user. The memory will store 16 stations, while telltale pushbuttons permit unmuted mono or muted stereo as well as auto-scan or manual tuning. The display has a rather garish signal strength meter and stereo indicator light alongside the frequency readout.

Sound quality is arguably rather better than the budget norm, at least making a stab at communicating with coherence and zest, although it can sound a touch strident and not particularly clean, and does seem a bit short on weight.

### Audiolab 8000T – £700 (Best Buy)

Audiolab kept its many amplifier customers waiting a good few years for this matching tuner, but even though the £700 pricetag might keep it beyond the reach of some, few will deny that the end result is eminently worthwhile. There's only one obvious omission – no remote control, system or otherwise.

The 8000T is a quite-bulky, full-width unit, and very substantially built. But there's not a lot of spare space on the busy fascia, reflecting the very comprehensive range of features that make this an unusually flexible and versatile design. Besides FM, an AM section covers both medium and long wavebands. The large back-lit LCD display is superb, with bags of useful information available. A good old-fashioned round flywheel-action knob does the tuning duties (backed up by 39 presets and scan modes).

Narrow/wide selectivity and 25kHz FM tuning increments proved very effective in discriminating weak signals close to strong ones, while AM was sensitive enough and remarkably free of spurious. Technically original design solutions deliver a fine measured performance and promise tight tolerances over the long term.

Particularly praised for its relaxed clarity, openness and neutrality, well developed images and fine dynamic detailing, sonic criticisms were mild. A little less crisp and slightly more grainy than significantly more expensive references, the Audiolab always remains informative and enjoyable in its own smooth and relaxed way. It even manages to make AM quite a lot of fun.

Superb ergonomics, fine reception perfor-



mance and a sound quality that gets close to the state of the art demand a Best Buy, even though the £699 pricetag is well above the budget sector.

(Reviewed issue 120)

### Denon TU-260L – £120 (Best Buy)

Awarded a Best Buy rating when reviewed way back at the time of its introduction four years ago (supplement to issue 93), Denon's £120 TU-260L has been at the top of the separates tuner sales charts ever since. It's actually due for an imminent update, but however the new model turns out, the current 260L has established itself as THE budget alternative for those unwilling or unable to pay much higher prices for the tuners that match audiophile amplifiers. This is the model of choice for those who reckon £120 is enough to pay for the radio in their lives.

It's a compact and discreet little package, enlivened by a small digital display, if inevitably limited in terms of features and facilities. However, all the important technical bits are firmly in place. A 20-slot memory may be allocated to FM, MW or LW stations, alongside the normal scan and manual tuning modes. However, no signal strength metering or narrow/wide IF selectivity is provided.

The lab tests delivered a very competent set of results, with high sensitivity and very decent selectivity and image rejection. The sound is open, detailed and essentially communicative, with an honesty and enthusiasm that's very engaging, if not particularly refined.

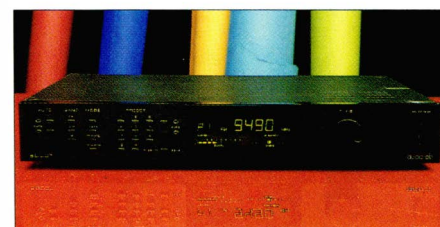
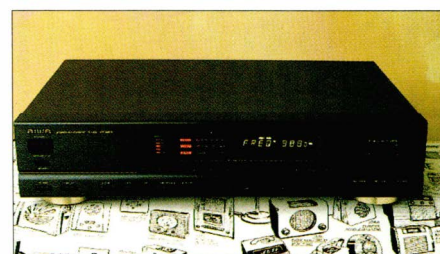
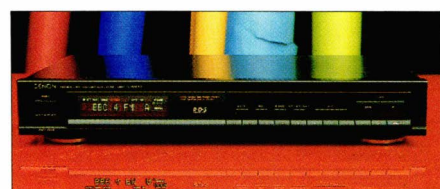
(Reviewed issue 93)

### Denon TU-580RD – £220 (Recommended)

A couple of steps up the ladder from the budget market leading TU-260L, the £220 TU-580RD adds features like RDS (radio data service) decoding and independent remote control (handset supplied) to the normal digital synthesis tuner roster.

Besides FM, there's just medium wave AM here, but the rest is the usual full-feature line-up, with step-by-step, scan or preset tuning (30 stations), adjustable selectivity, aerial attenuation, station naming and three stage display dimming.

As an RF performer, the 580RD is one of the best around, with its (very) narrow setting pulling in weak, distant transmissions despite strong local



From the top; Arcam's latest Alpha 5 relaxes on a bed of extra long Twiglets. Denon's TU-580RD, meanwhile, ponders the significance of short person behaviour in pedal-depressed pan-chromatic resonance and other highly ambient domains. The Aiwa XT-950 is content to browse *Wireless World*. The Audiolab 8000T doesn't have to try.

activity close by. Sadly, AM suffers an extreme example of the woolly sock syndrome (all too commonplace in hi-fi tuners). The lab measurements fully endorse these practical observations.

Exceptional RF performance often seems to accompany less promising sound quality from an audiophile perspective, and this Denon model fell into the stereotype. It doesn't sound bad by any means, but it doesn't sound great either. The below-average listening test results included particular criticism of a rather processed quality with some mid-band nasal coloration, and a slightly softened and slowed bass end.

The ultimate sound quality may not set any records, but the 580's RF performance is out of the top drawer, and the rest of the package is very





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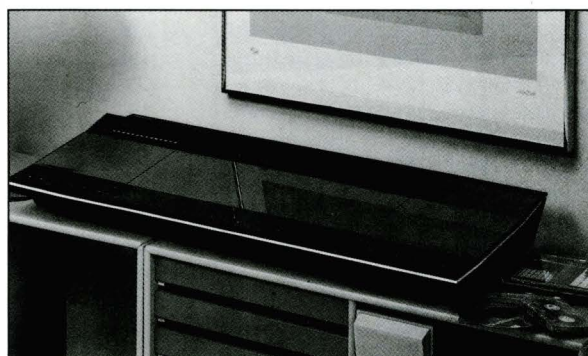
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competitive in terms of features (including RDS and remote control), build and component quality. Recommendation is thus in order.

(Reviewed issue 120)

### harman/kardon TU9400 – £300 (Recommended)

Recommended back in issue 93's supplement (four years ago), the £300 TU9400 is not the cheapest hi/k offering currently around, nor does it have the remote control and more advanced tuning facilities of the upmarket 9600. Instead, it concentrates on quality circuitry throughout, in the interests of delivering superior sound quality.

It's a good-looking slimline package with gently curved fascia, the preset memory using a 3x8 configuration to store up to 24 channels across FM and MW and LW AM bands. There are no options to alter IF selectivity or RF strength, though 'high blend' can improve noise with weak stereo signals. The row of signal strength LEDs cover a useful range.

Lab tests reveal quite high useable sensitivity and very respectable performance throughout, with low distortion, decent enough noise figures, and even relatively low AM distortion. The listening panel responded very positively to its open and dynamic sound, particularly praising the realistic texture of massed strings, and the generosity of the whole recorded acoustic. All of which provides plenty of reason why this fine tuner is still going strong several years after its original introduction.

(Reviewed issue 93)

### Linn Kremlin – £1,779 (Recommended)

Linn's £1,779 *Kremlin* is one of the most expensive tuners around, justified perhaps by its prodigious component count and considerable circuit complexity. Remote controlled from a button-rich system handset, this demure and discreet FM-only unit has compact mid-width metal case-work. Ergonomics are quite friendly, aided by an exceptional digital signal-strength meter, but not by the rather small display.

Technically, this tuner has a fixed and fairly wide selectivity, opting to maximise sound quality at the expense of digging out weak distant stations close to strong local ones. Front-end overload behaviour is particularly robust, however, which is good news for anyone living close to a powerful transmitter.

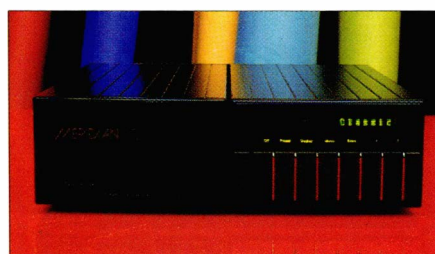
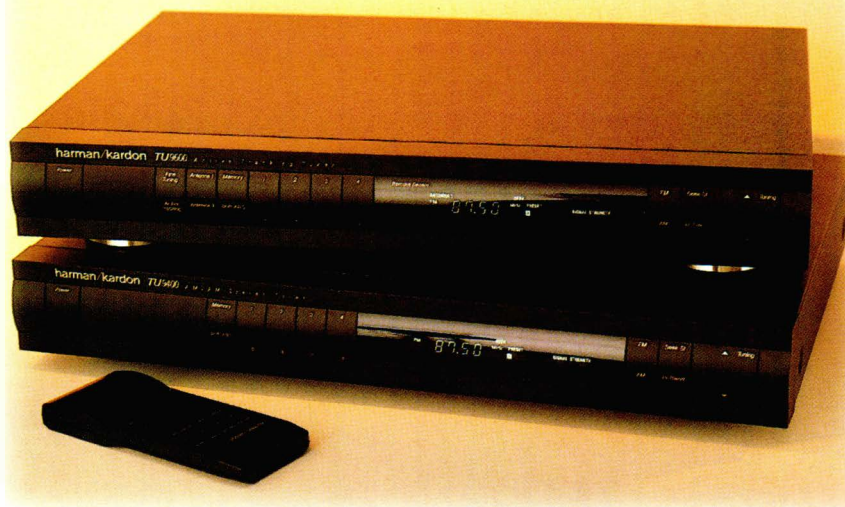
The sound quality was not to every panellist's taste, some finding it a little coloured and aggressive. Others – myself included – were very impressed by fine coherence and lack of time-smeared. Whatever, the *Kremlin* has an exciting and invigorating sound, but one that is not necessarily a comfortable experience.

The lack of tight selectivity option may limit its appeal to the long distance radio enthusiast, but the 'bullet-proof' front-end should ensure fine consistency under difficult conditions, and the sound quality positions it among the few exceptional performers around, with its own unique character and strength.

(Reviewed issue 120)

### Meridian 604 (Recommended)

Meridian's £1,350 604 FM-only 'digital wireless' is clearly primarily intended to be used as part of a



Above; harman/kardon's TU-9400 pretends not to notice the TU-9600 on its back. Left; Linn's krafty *Kremlin* wins another award for discretion and below left; Meridian's 604 sets out to completely realign our attitudes to control ergonomics.

as an independent standalone tuner. But it clearly makes sense in a complete 600-series Meridian system context.

(Reviewed issue 120)

### Mission Cyrus FM 7 £400

**W**hat a beautiful looking piece of kit. Mission's new



Cyrus FM-only tuner costs a not inconsiderable £400, but it shouldn't find any difficulty attracting buyers amongst those who put the quality packaging packaging and presentation high up their list of priorities.

Four factors set it apart. Matching the Cyrus amps and power supplies, it's half the width of 'standard' hi-fi separates, with the flexibility to be stacked or set side by side. Cast alloy casework will always look and feel better than plastic or bent metal alternatives, especially with such a cunningly-sculptured fascia. Then there's a real analogue-style (though not flywheel-weighted) tuning knob, set alongside a large and softly backlit LCD type display which includes rather neat graphics for signal strength or fine-tune.

That aside, simplicity is the key, with a rather modest complement of seven presets (a sufficiency for most methinks), and no selectivity or aerial attenuation options. There is also some (unspecified) remote-control capability via Mission's classy system remote (not supplied). However, the tuning procedures are ideal, with inter-station muting in scan mode alongside the opportunity to search continuously with the manual knob through unmuted grunge for something interesting.

That said, our air-check procedures showed that this tuner falls well short of the ideal for distant station, weak signal reception. This is mainly due to its basic sensitivity being fairly modest, even though strong signal intermodulation effects are well handled.

complete Meridian 600 system, in which role its internal analogue-to-digital converter and digital audio output are particularly relevant.

Presentation is quirky but classy, with the plate-glass fascia unifying two separate slimline sections which make up the compact mid-width whole. Remote control is available.

Partly to handle potential multi-room use, this is a highly-flexible tuner which can be configured in various ways according to system and preference. Seven buttons perform a whole variety of functions which should cover most eventualities. The signal strength meter is a little crude for such an expensive unit.

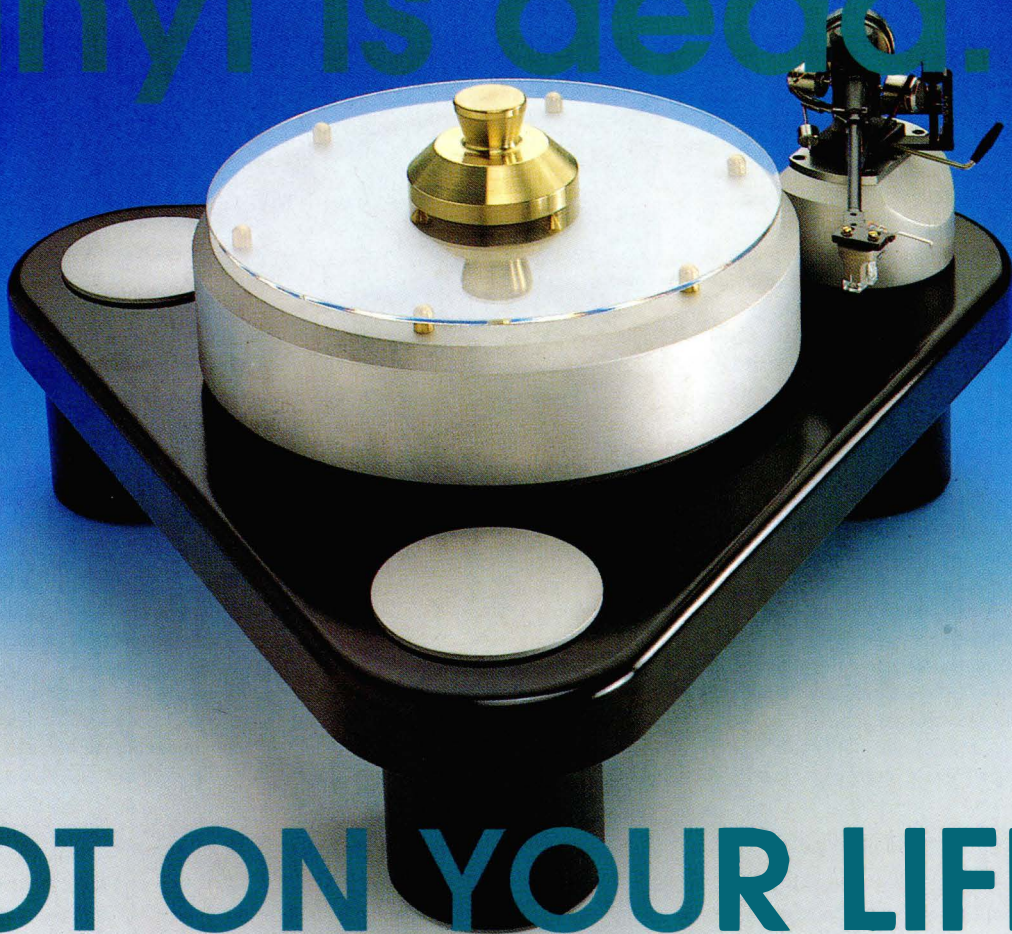
Lab tests confirm the high-quality bespoke circuit design. Selectivity gives RF intermodulation results amongst the very best, but it's not particularly impressive at picking out weak signals from distant stations which are adjacent to strong local transmitters.

Sound quality is unfailingly civilised, with a lovely transparent mid-band that relishes the delicate portrayal of fine detail. An element of time-smeared and chestiness at low frequencies is well disguised by a very dry and controlled bottom end, which in turn tends to focus listeners' attention on the slightly forward presence and the tidy and sweet treble.

In terms of sheer performance for a high asking price, this Meridian is not an obvious choice



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Sonically, however, it does show more than a touch of class, with an open and generous soundstage that gives the music plenty of firm foundation. The top end sounds a touch shut-in and nasal compared to more expensive audiophile references, but this Cyrus is no slouch in communicating the essential dynamic tension and drama of musical performance.

### Naim NAT01 – £1,453 (Recommended)

This first and most expensive Naim tuner, the FM-only NAT01 cost an extravagant £1,100 as long ago as our original 1987 review (Collection edition). That the price is now £1,453 actually represents a rather modest rate of inflation, and the design still looks contemporary.

It's unusual in several respects and probably unique in consisting of two quite separate boxes, following a long-standing Naim tradition of packaging power supplies separately from sensitive electronic signal processing. The actual tuning circuitry follows traditional continuous analogue varicap techniques (as distinct from digital frequency synthesis), the only digital bit being the display. Features are almost non-existent – no remote, no presets, no scan, no signal strength, just a couple of indicator lights and a single large manual tuning knob with a delightfully nostalgic fly-wheel action.

Active inter-station muting and modest sensitivity will discourage those seeking to receive weak and distant signals, but the proprietary RF section is very well engineered and aligned for the capture and processing of strong signals.

The author's eight-year-old, once-updated example still provides an invaluable yardstick for tuner sound quality assessment, delivering insights into both musical performance and the broadcast studio environment which few rivals can match. Aside from some susceptibility to interference, it works exceptionally well in a Naim system context. It may lack modern creature control comforts, but there's clearly virtue in this simplicity.

(Reviewed issue 50)

### Onkyo T-430RDS £190

Onkyo has been around a long time on the Japanese and international stage, although its products have hitherto only received sporadic distribution in Britain. The latest foray seems very serious in intent, judging by the extravagantly large number of models filling our Buyer's Guide – no fewer than six tuners, which is twice as much as any other brand bar Kenwood.

Quite why it should be desirable to split the tuner market into so many small segments escapes me, but maybe it has to do with overlapping old and new ranges, the latter distinguished by an RDS suffix. Those who've read the intro will

**Above:** What Rega calls a *Radio*.  
**Right:** Oozing sophistication all over the backdrop, the Cyrus FM7.  
**Top right:** A Quad 66 and its remote unit, yesterday.



know it stands for Radio Data Service, a feature of limited value in the static domestic context, but handy for tuning confirmation nevertheless.

The T-430RDS is Onkyo's least-expensive RDS model and carries a pretty competitive £190 price tag. It's a substantial unit which covers the MW, AM and FM bands. Although capable of some remote control when used with appropriate Onkyo amps, this tuner has adopted the button frenzy approach to ergonomics.

The result finds even the relatively experienced operator burrowing into the manual to figure out what's going on. It turns out there are at least two different ways of organising the 30 preset memory, plus labelling facilities over and beyond the automatic RDS station IDs. How appropriate this to a nation congenitally unable to pre-program a VCR must be questionable.

Although there's every possible mode of tuning in (short of a proper knob) plus a large display area, there's not much else to assist the tuning process – no alternative selectivities or signal strength metering, for example. Perhaps it doesn't really need them, as it proved a thoroughly able performer in RF reception terms, digging out weak and distant stations nearly as well as a pricey reference. The AM performance is unusually passable too, which is a nice bonus.

Sound quality as such doesn't set any new standards, but is pretty good nonetheless, thanks to an inherent and pleasing neutrality. Dynamically a little reticent, thanks to a little

timesmear and congestion, it doesn't quite have the tension and poise of the best, but still deserves marks for trying. Not the friendliest or prettiest tuner around, the Onkyo T-430RDS is nevertheless a very promising all round performer.

### Quad 66 – £519

Known primarily for its amplifiers, Quad has always produced matching tuners, often with a degree of system integration and dependence. Indeed, this £519 66 tuner has no independent life of its own, relying on the hefty table-top system remote control supplied with the matching preamplifier (approx. £130 as a separate item).

The 66 is just about the prettiest tuner on the market; the front interesting without being flash; the display a lovely restrained back-lit LCD type. It helps, of course, that there aren't any buttons to clutter everything up...

The 'large print' remote has just a handful of big buttons and two even larger rotary knobs. However, system duties make it less than intuitive when operating the radio – sadly neither of the rotaries are operative here. Scan-tuning up or down the FM-only band allows up to 19 stations to be stored. Once loaded, the other option is a step-by-step search through the memory bank.

The single IC for front end duties doesn't do much for the measured RF performance, with below-average noise factor and modest RF overload point. The fixed selectivity effectively falls into the 'wide' category. Weak signal reception

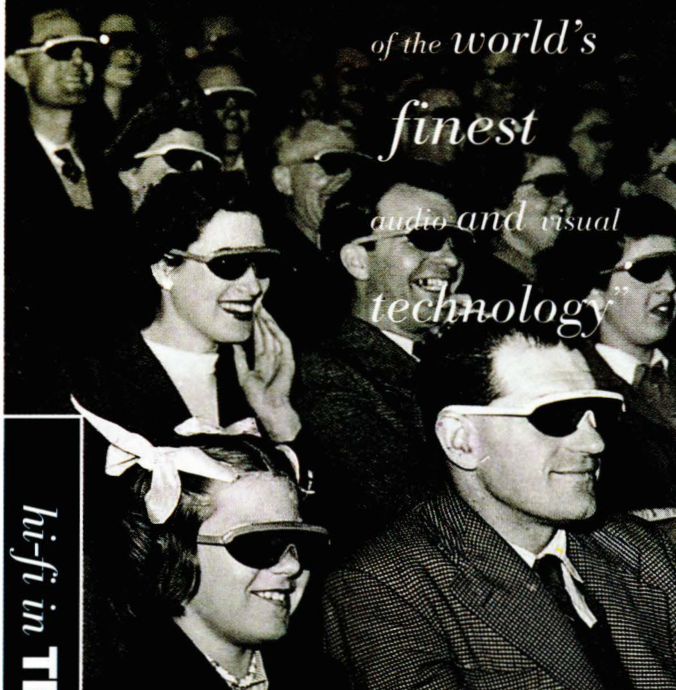




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had greater background noise than the best, and strong local signals precluded some distant stations entirely. Fed with high quality signals in a (non-Quad) audiophile system context, the 66 sounds very pleasant, uncoloured and generally neutral, if a bit laid back, self-effacing and dynamically shy with it.

It has to be said that the 66 has little to offer the radiophile or audiophile that isn't available elsewhere for less. But it's a very attractively styled unit that should work very satisfactorily in a Quad system context, provided local RF conditions aren't too demanding.

(Reviewed issue 120)

### Rega Radio – £230

Given the once over in a recent Sessions piece (issue 138), Rega's new £230

Radio tuner is primarily intended

to partner the company's cute integrated amplifiers, although no attempt has been made to provide any remote control operation, in isolation or system context.

Based on the same sort of chip technology found throughout budget tuners, Rega details include a single-sided glassfibre circuit board with an extensive ground plane, metal film resistors and selected-quality electrolytics.

Features are sparse: a couple of dozen presets – half for FM and half for AM – alongside automatic scan or manual step tuning. A simple red, back-lit, four-digit LCD shows the tuned frequency. The button-count is minimal, and the buttons themselves are tiny and easy to miss under dim domestic lighting. A little patience is also required while the microprocessor figures out what you want it to do.

Selectivity is nothing special, so this isn't an ideal choice for trying to pick out distant weak signals adjacent to more powerful locals. However, this is often the price one pays for a sweet, engaging and lively FM sound quality that only falls a little short of the very best at any price. Live Promenade concerts were an absolute delight, with a real feeling of the space and tension of the Albert Hall coming through. Sadly, AM sound is the usual sub-standard rubbish often found on hi-fi tuners today.

(Reviewed issue 138)

### Rotel RT-950BX

One step up from Rotel's budget RT-930AX comes this £200 950BX, reviewed in issue 129. These are superficially very similar, but the 950BX sports more careful and costly component tweaking for superior sound.

A total of 20 preset stations can be stored over both long and medium wave AM bands, as well as FM. There's no adjustment of FM selectivity, while AM's 'wide' alternative setting is not very useful. One unusual aspect is that the high-frequency sharp-notch filter, which normally suppresses stereo pilot tone residuals, has been substituted by a much gentler network.

Selectivity is not really much use for long distance and difficult reception conditions; lab tests show slightly poorer-than-average noise, and a tendency to intermodulation with strong signals. The AM 'wide' selectivity could easily be



described as narrow, being heavily rolled-off at the treble end and sounding muffled.

However, the FM sound-quality makes up for the rather indifferent RF performance. It sounds open and lively, driving the music along at a fine pace. The bass is dry and restrained, making the net effect a shade bright and shiny. To some ears, it's a trifle exposed and untidy, but the sound has fine timing and an engaging coherence.

This budget audiophile device delivers a pacy and exciting experience from good quality transmission signals, although the RF performance won't appeal to radio enthusiasts.

(Reviewed issue 129)

### Teac T-X4030 (Best Buy)

Former tape specialist Teac offers this one £120 T-X4030 tuner to partner its amplifiers, although it is purely a cosmetic match, as there are no remote control provisions of any kind. It's a neat slimline unit, the budget price an obvious plus, but note the AM section here only includes MW.

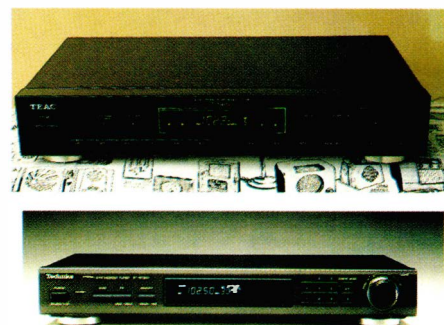
Under the skin, the engineering is nothing special, but appears generally competent. The lab tests showing slight HF ripple and some stereo separation limitations, while AM signals show some low-frequency weakness. The ergonomics are attractively simple, but the muting and scan tuning modes are always automatically selected when changing between wavebands or powering up, which is irritating. Any random selection from the FM and MW bands may be stored in the 20-slot memory.

Reception performance is very competent considering the modest price: it copes well on weak signals while not suffering from overload and intermodulation problems with strong ones. Selectivity is nothing special, but AM sounds less muffled than most.

The basic sound balance is just about right, and colorations are pretty well under control, if lurking just beneath the surface – just a little spitch and splatter, a touch of chestiness and low frequency timesmear. Dynamics do seem a trifle squashed and depth a bit constrained, but basic stereo imaging is well formed.

Though less sweet and substantial than the best, the sound passes muster nonetheless. RF performance is as good as any and better than most, and the price is also below market average. No it ain't great, but it is pretty good value, so a Best Buy rating seems the logical conclusion.

(Reviewed issue 129)



From the top; Rotel's RT-950BX tunes in to Radio Four to catch *The Archers*. The Teac T-X4030 prefers a bit of Jazz FM but bemoans the fact that they no longer plays 'real' jazz. And the Technics ST-GT350L, being new to the scene, is still looking for Akihabara FM.

### Technics ST-GT350L £140

This tuner really looks the business, and its £140 pricetag makes it a genuine contender in the hotly-contested budget sector. The ST-GT350L is a beautifully slim affair, full width to persuade you of its genuine hi-fi aspirations, and with a smooth contoured moulded fascia to add a touch of class. However, the real *pièce de résistance* is something which looks – and feels – exactly like a real tuning knob (just let it spin).

There's all the usual presets, scan tuning gubbins and so forth. Also included are 3x10 memory slots which may be assigned randomly to long or medium wave AM or FM stations. But the tuning knob's promise of trawling the wavebands in search of distant stations is totally thwarted by the idiot microprocessor, which auto-mutes as soon as the knob is moved and declines to remain in mono when a strong signal comes along.

Reception performance seems pretty competent, pulling in weak stations with a quality only a little below the reference, though backgrounds are not quite as quiet. Sound quality, however, is a tad depressing, having much more in common with a mini/midi system sort of sound than the audiophile pretensions of today's best budget separates. Decent RF performance is maybe not quite enough, while the promise of ergonomic delights rare at several times the price are scuppered by silly microprocessor (il)logic.



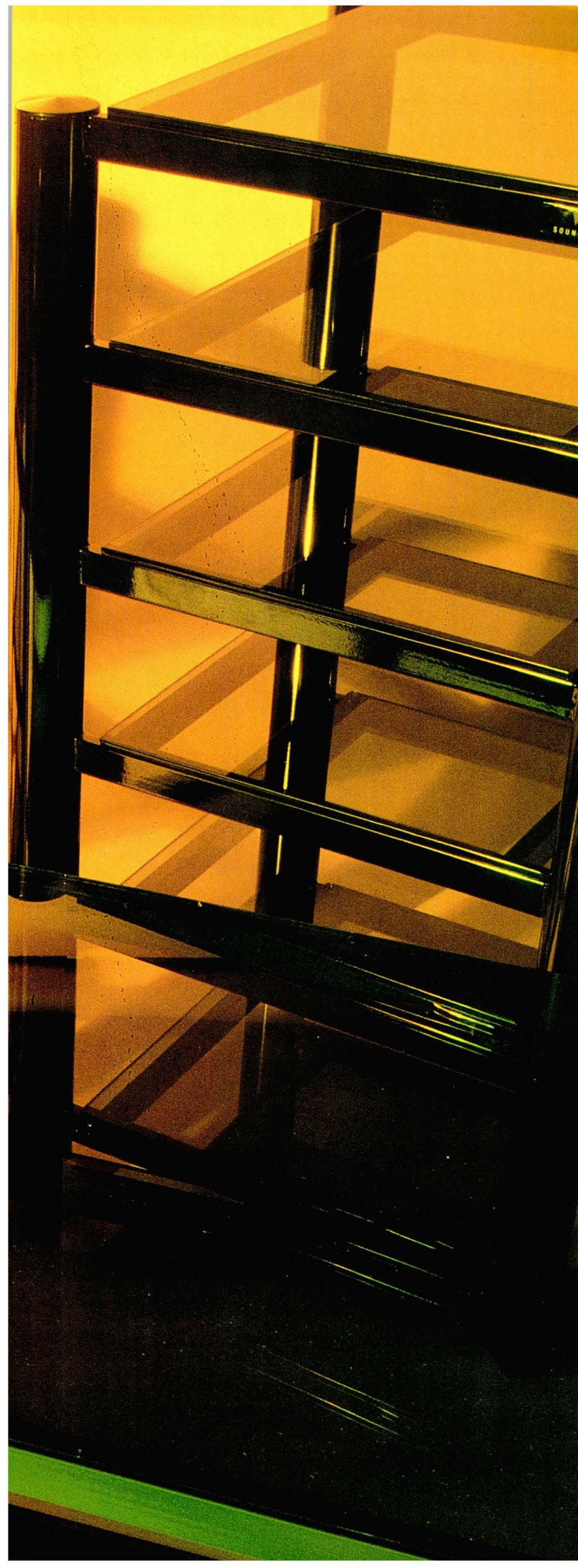




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Equipment from AVI, Linn, Meridian or Quad would be the perfect partner for the new *X120* stand, here shown in Classic Black. The *X120* is designed to accommodate up to six midi-width components, and comes complete with a bottom shelf to store CDs.

The *X105* stand, shown in Rock Red on the photo, will transform the

looks and sound of any full-sized hi-fi or home cinema gear. It will hold up to five components, the bottom two shelves being extra large to hold taller equipment, such as beefy power amps.

Finally, home cinema aficionados will love the new *X310*, shown in Harmony Grey. This is designed to house TV, video, and every part of your home entertainment system in one elegant package. The *X310* can be fitted with castors or 'audiophile' spikes, depending on your needs. Like all the Soundstyle tables, the *X310* is available in a variety of high-gloss finishes. Aside from Classic Black, Rock Red and Harmony Grey, the tables are available in Symphony Grey, Opus Green, Concert Blue and — you guessed it — Sonata Blue.

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#### THE QUESTIONS

**1. When did Hi-Fi Choice last give away Soundstyle tables?**

- a) July 1982
- b) June 1876
- c) May 1993
- d) May 1994

**2. Which of the following does NOT produce midi-sized gear that would suit the *X120* stand?**

- a) Naim Audio
- b) Linn Products
- c) Meridian Audio
- d) Quad Electroacoustics

**3. Which quasi-autonomous nerve ganglion initiates heart-beat and establishes its pace?**

- a) atrio-ventricular node

- b) sino-atrial node
- c) sino-ventricular node
- d) chordæ tendonæ

**4. What tables did Soundstyle give away in its last Choice competition?**

- a) Four-point *Quadruped*
- b) Three-point *Tripod*
- c) Four-point *Quadrupod*
- d) Three-point *Tripod*

**5. How many high-gloss colours are there in the Soundstyle range?**

- a) Three
- b) Five
- c) Seven
- d) Nine

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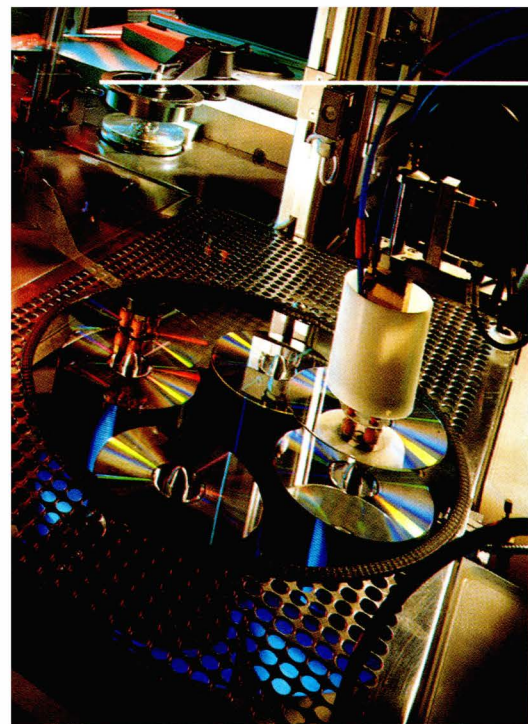
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**B**y mid 1994, the truth was out. It was an open secret throughout the video industry that Philips and Sony had been working and talking with Matsushita (Panasonic and Technics) about a second-generation CD. This would use smaller pits to increase capacity, which in turn would increase playing time and picture quality from a video disc.

It was also expected to improve the sound quality, either by added multichannel surround sound to video, or higher sampling rates and bigger-bit word lengths for audio-only discs.

### The original HDCD

Sony/Philips' new high-density CD was initially dubbed HDCD, but this name was then dropped to avoid confusion with a 'High Definition' CD already marketed by Pacific Microsonics — an emergent high-tech company based in Berkeley, California (see box, HDCD — What's Available To Buy page 59). Pacific's HDCD system improves the transfer of 18 or 20-bit studio recordings to 16-bit CD format. Originally the record companies just rounded off or threw away extra bits. But this creates a disturbing effect: the quietest sounds and any background hiss just switch on and off, regardless of musical content.

The more modern approach is to add 'dither' (a quiet, artificial hiss-noise which masks the switching); and 'shape' any background noise by taking it from the middle frequency bands where the ear is most sensitive, then redistributing it in higher or lower bands where hearing is less acute.

HDCD is just one of several similar systems, of which Sony's Super Bit Mapping is the best known. Although the full benefit of HDCD encoding is only heard from a CD player with bolt-on HDCD decoder, the same disc plays on existing CD players.

### The new high-density CDs

So there is no connection between Pacific's HDCD and the completely new high density CDs. It thus made good sense to use a different name for the new systems. DVD, short for Digital Video Disc,

was chosen because the driving force behind the new CD has so far come from the Hollywood studios. They love the idea of releasing Laser Disc quality movies on single five-inch discs, which pop off presses at high speed and for only around 50 cents a time. VHS tape duplication is several times more expensive.

But good intentions quickly evaporated and the name HDCD is now back in currency for DVD.

### Video CD — a doomed format?

Philips' problem with DVD is more basic. The company has recently launched Video CD, which spreads a movie of VHS-or-slightly-better-quality over two CDs. Promising something much better is a sure way to kill what's already on sale.

Although Philips is probably right to say that the complexity of DVD players will make them much more expensive to build until the end of the decade, this argument glosses over an important point. If the Japanese want to create a new market for a new product, they will initially sell it for below the manufacturing cost. Even subtle rumours of a second-generation system can be enough to kill consumer confidence in the first generation product, and hence deflate sales.

A policy briefing on DVD (and how it relates to Video CD) had been planned by Philips and Sony for the Summer Consumer Electronics Show held in Chicago last June, but was cancelled. Philips' partners in Video CD — Panasonic, Sony and JVC — were selling VCD for karaoke in Japan, but were still uncertain about launching it as a movie carrier in the USA and Europe. Today, they look increasingly less likely to support this first generation format. However, the computer world may adopt Video CD as the ideal low-cost way to display movie images on a PC screen. Current systems, like Apple's QuickTime and Video For Windows, give very poor quality on all but the most expensive PCs.

### The two new rival discs

At last January's Winter Consumer Electronics Show in Las Vegas, Sony (with Philips a none-too-willing partner) gave an impressive demonstration of DVD. Two weeks later, Toshiba and Time-Warner chose Hollywood as the place to unveil their rival system. Surprisingly, Panasonic backed Toshiba instead of Philips/Sony. So did Pioneer, Hitachi and Thomson of France.

Every day makes it clearer that these surprise moves followed heavy-pressure lobbying by Time-Warner, with little regard being paid to the differing technical merits of the two systems.

Both systems have been tailored to meet a 'wish list' drafted in 1994 by the Motion Picture Studio Advisory Committee, which represents the seven major movie studios in Hollywood. The list requires a full 135-minute movie on a single disc, with better-than-Laser-Disc picture quality, multichannel surround sound, multilingual soundtracks and more.

### What's in a CD?

On existing CDs, the spiral track of data pits has a pitch (distance between pits) of 1.6 microns. The read-out laser emits infra-red light, with wavelength of 780 nanometres, and is focused by a lens with numerical aperture of 0.45 (the numerical aperture is a measure of the angle over which the

lens can collect light and bring it to a focus). The single-sided disc can store around 650 megabytes of data, which is read at a constant rate of around 1.5 million bits a second. The MPEG-1 data compression system used for Video CD (as available in Philips' CD-i players) codes full frames of TV pictures, not individual interlaced fields.

Both new DVD systems use MPEG-2 compression, which codes individual interlaced fields at a higher data rate, making for much clearer pictures. Both systems can vary the data rate depending on whether the picture contains moving detail or stationary objects. Both systems also use a red-light laser which has a shorter wavelength: 635-650nm. The player lens has a higher numerical aperture, which lets it focus into a tighter spot and thus read smaller pits in a tighter spiral.

This is where the differences between the two systems emerge. And the overriding consideration is that Toshiba is pushing capacity further, with even smaller pits.

On the face of things, pushing for the smallest possible pits sounds a good policy for the future. It gives the best long-term options for playing time, picture quality and audio coding. But overstretching disc capacity could make the system unworkable in practice as a consumer product.

### The Philips/Sony disc

Philips and Sony use a lens with a numerical aperture of 0.52, to focus onto a track with a pitch of 0.84 microns. The disc has a storage capacity of 3.7 gigabytes, though bits are read out at a variable rate of between one and ten million per second — on average 3 Mb/s. Playing time is 135 minutes.

There is room for six channels of sound: either three stereo pairs (perhaps censored and uncensored dialogue), or six-track discrete to cope with the new digital cinema systems. But this sound is compressed, like Mini Disc or DCC.

Computer companies IBM, Apple, Compaq and Microsoft are already working with Philips and Sony to set a multimedia standard for the new disc to be used in a new generation of PCs.

Thanks to work done by 3M, the storage capacity can be doubled to 7.4 gigabytes and 270 minutes of continuous movie playback. The double density DVD is pressed from conventional polycarbonate plastics, with the micro-pits in one surface. This pitted surface is then coated with a thin layer of semi-reflective material, like a two-way mirror. This layer in turn is coated with a soft film of photopolymer material, which is hardened by exposure to ultraviolet light while in contact with a mould which impresses a second layer of micro-pits. The result is a three-layer sandwich which is then topped with a conventional aluminium reflective layer, just like any other CD.

Each of the two recordings is identified to the player by a digital flag buried in the data stream. The playback laser can focus on either layer, depending on a switch setting. Once a recording layer has been selected, the player's servo control system keeps the laser focused on that layer, while ignoring the other, out-of-focus, layer. Refocusing takes only around three thousandths of a second, so playback is effectively unbroken.

The photopolymer moulding system process was first used fifteen years ago by Philips, to make Laser Discs. It was then known as 2P.

The difficult part is getting the semi-reflective





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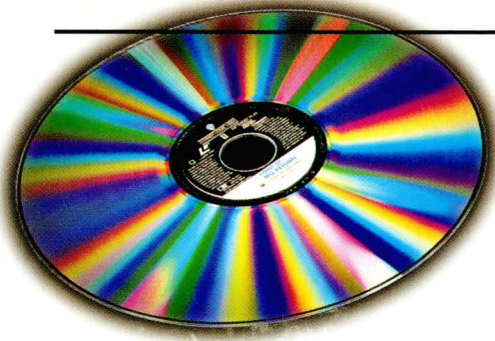
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The production of Toshiba/Time Warner's CD format will resemble that of the LaserDisc: two thin halves glued together

layer to be of just the right reflectivity. It must return the laser beam when it is focussed to read the first top layer of pits, but must also let through enough laser light to read the second layer of pits. In practice the reflectivity must be between 20 per cent and 40 per cent. If aluminium is used, the layer must be applied with a thickness tolerance of less than five nanometres. 3M claims success with a new material which gives a tolerance of between 30 and 75nm.

3M says it developed the system on request from Philips and Sony, and no-one will reveal what the magic material is. Very probably it is something that 3M had already developed for coating glass to make two-way mirrors, as used in police investigation rooms and airport customs halls. Observers can look through the glass, but the observed see only their own reflection.

### The Toshiba/Time-Warner disc

Toshiba uses a lens with higher numerical aperture (0.6) to focus the laser more tightly on a track with tighter pitch: 0.725 microns. This pushes the storage capacity to 5 gigabytes. For movie material, the data is read at variable speed, but with the higher average of 4.69 Mb/s for 142 minutes. Sound is Dolby's AC-3 compression system, with five main channels and one for effects and low bass. So again, it is compressed like MD or DCC.

Most importantly, Toshiba plans to glue together two separately-pressed discs back to back, just like an analogue Laser Disc. This doubles capacity but requires the user either to take the disc out and turn it over, or buy a player which — like Pioneer's top-end LD machines — has a laser mechanism that reads one side of the disc first, then moves round to the other side of the disc and reads that to double overall playing time. Either way, the changeover is very slow.

### A little bit of politics...

Both camps started off saying that each other's DVDs will be hard to make and/or hard to read. Then, through February there was silence, while Philips and Sony considered the possibility of joining forces with Toshiba. Next, in late February, both Philips and Sony publicly rejected the Toshiba system, effectively declaring a format war. Philips has now come forward with some very cogent arguments against the backwards-looking double-sided disc technology, and in support of the much more elegant, single-sided, double-layer system.

And both Philips and Sony now suggest that it may be the computer industry, rather than the movie studios, who call the shots. This would hap-



## Better sound on CD

**W**ith all the fuss over movie storage on DVD, no-one has yet given any serious thought to audio-only use. The movie disc will have multichannel surround sound, either Dolby AC-3 or a similar compression system. But this is not the best way to code hi-fi stereo with optional surround.

DVD offers an upgrade to higher audio sampling rates, more bits per word, the incorporation of hi-fi surround system like Ambisonics, as well as a useful extension of playing time.

However, members of the Audio Engineering Society are warning that the mad rush to set a standard for DVD as a video carrier risks leaving serious hi-fi issues out in the cold. Philips and Sony might get it right, but Toshiba quit the hi-fi business years ago. The best course of action is for the AES to draft a technical proposal for hi-fi DVD, or SuperCD, and circulate it to named executives throughout the audio and video industry. It is more difficult for a company executive to ignore a letter addressed to him or her directly.

"It is not unusual for new systems to compete," comments Jan Timmer, who is head honcho at Philips. "We avoided it with CD audio, but now we find ourselves in the midst of a conflict."

Timmer thinks it unfortunate that the discussion over new formats is taking place in public, as "the man in the street does not understand the issues." He points out that a new system must fulfil a high number of various expectations.

"Any new system needs a life expectancy of 25 years. It must be future proof. It must be easy to use. And it must make it easy to migrate from CE (consumer electronics) to computers. We should ask the opinion of the computer industry.

"Any decision pins us down for 25 years, so our next steps are of vital importance."

Barry Fox

pen if the computer companies adopted DVD as a new multimedia and high-capacity CD-ROM standard for PCs. Additionally, Philips and Sony are now laying far more emphasis on the practical value of single-sided, double-layer recording. Previously this had been mentioned only as future option.

Realistically, any use of either new DVD technology for a Super CD (with no compression, double sampling rates and bigger bit words) will at present only have a limited, specialist-market appeal. (See box, Better Sound On CD, right.)

### What problems lie ahead?

The bigger-capacity numbers quoted by Toshiba are superficially impressive and seductive. But they are bought at the expense of smaller pits, which are harder to master and press, and more susceptible to users' fingerprints.

If users' fingerprints cause problems with playback, and Toshiba is forced to put its DVDs in caddies, all manner of practical market difficulties arise. It becomes more difficult to build a player which also plays existing 'bare' CDs, and it would be quite problematic to construct a jukebox system which stores large numbers of discs. Because caddies are larger than five-inch discs, every shop,



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Producing a thinner disc (0.6mm) makes it easier for the optics to cope with tilt. But the disc then lacks strength. Making it from two halves, glued together, gives back that strength. And it also gives the option of a doubled recording capacity, which is good for the numbers game. But all discs must be made from two halves, irrespective of whether the second-side storage capacity is needed or not. This explains Toshiba's apparently daft suggestion (at a New York press briefing) that the label can cover one side of the double-sided disc.

Currently, a lens with an NA of 0.6 must be made from glass, not moulded plastic as used in ordinary CD players. This increases the cost, and raises the issue of backwards compatibility—will new players be able to play back ordinary CDs? Philips asserts that a lens designed to play back 0.6mm pressings cannot also play back 1.2 mm pressings (ordinary CDs). If two lenses are mounted on the same carrier, the mass is increased and the servo control system has much more difficulty moving the high NA lens fast enough to keep the spot in focus.

Panasonic is believed to have developed a lens with a split NA, 0.6 in one part and 0.4 in another, to cope with both disc thicknesses. But this type of lens can so far only be made by electron beam etching, which makes it far more expensive than the plastic moulded lenses used in domestic CD players. Also, a stepped lens will reduce the light received back from the disc, so the electric signal retrieved is weaker and more prone to digital jitter.

Strengthening the laser diode, from a nominal two milliwatts, is an expensive way to compensate for light lost in a stepped lens. Red lasers are still at an early stage of production and much more expensive than infra red diodes.

## Conclusion

More and more, the signs stack up that the two main companies behind the glue-sandwich disc (Panasonic and Thomson — owner of influential RCA in the USA), have been pushed by PR hype, rather than deciding after a process of cool judgement based on careful evaluation of hard facts. Is this really the way to set a new CD standard for the next quarter century?

## HDCD—what's available to buy?

**A**lthough Pacific Microsonics' HDCD-encoded discs can be played on any conventional CD player, until the Las Vegas CE, only a handful of companies had announced HDCD-compatible electronics. And at present, there is only a smattering of HDCD-encoded discs available to buy.

So far, eight companies have already developed HDCD products, with a further eight actively involved in the HDCD campaign. HDCD products currently in (or very near) production include: Audio Alchemy's DDE v3.0 converter and DTI Pro jitter-busting interface; Classé's first ever DAC; Counterpoint has added a HDCD option to its flexible DA-10 processor; Esoteric Audio Design (EAD) have several HDCD converters; Mark Levinson's new No 36 DAC and a HDCD option for its Reference No 30.5 DAC; Sonic Frontiers HDCD-upgraded SFD-2 MkII and Spectral's SDR-2000 Pro DAC.

In the UK, Pink Triangle was first to announce a HDCD filter card for its *Ordinal/DaCapo* converters.

The encoder is due on sale very soon, with over 20 major recording studios expressing interest in producing HDCD-encoded discs for a range of musical genres. Currently, however, only America's Reference Recordings have access to HDCD-encoding equipment, having launched about a dozen encoded discs — including one sampler — to date.

**Alan Sircom**

Philips and Sony are currently cooperating with major computer companies to develop a new multimedia CD format for PCs



warehouse and home would have to change its shelving to accommodate this new CD.

The master disc used for pressing Philips/Sony discs can be cut with the blue-gas lasers currently used to cut conventional CDs. The smaller pits of the Toshiba disc need an ultra-violet laser. Nimbus is already using this as a sales pitch: "No other mastering system has the capability," says Nimbus of its UV upgrade.

The Toshiba disc is made from two half-thickness (0.6mm) halves. New pressing moulds are thus needed, because existing moulds are designed for 1.2mm pressings.

As Toshiba has explained to journalists in the USA, plastics material cools quicker if it is thinner — like a cheap pizza. So the half-thickness pressing should be quicker to make. The obvious (but unstated) downside is that you have to make two of them and then glue them together, which adds considerably to manufacturing time.

The less obvious (and also unstated) downside is that Toshiba's pizza will have to be hotter in the first place, because it is more difficult to get plastics to spread evenly over a wide area with shallow depth; it cools as it spreads. And this means that different plastics have to be applied instead of conventional polycarbonate.

## How will the discs be made?

All of this adds up to the need for existing mastering and pressing plants to re-equip. Glue is messy stuff in a manufacturing process. It takes time to dry, which adds to the production time for each disc made. Toshiba could use a glue that is quickly cured by ultra-violet light. But then, why not use 3M's two-layer system? Significantly, Time Warner continues to stall the US press, who were promised a visit to the WEA CD pressing plant in Oliphant, where DVDs are supposedly being pressed.

The higher the numerical aperture value of the player's lens, the more critical the focus accuracy becomes. Small radial and tangential tilt

## Contact telephone numbers

### Reference Recordings

*May Audio Marketing* ☎ (01943) 864930

### Audio Alchemy, Mark Levinson

*Path Premier* ☎ (01494) 441736

### Classé

*Absolute Sounds* ☎ (0181) 947 5047

### EAD

*Audiofreaks* ☎ (0181) 948 4153

### Counterpoint, Sonic Frontiers

*Picture The Sound* ☎ (01483) 31410

### Pink Triangle

☎ (0171) 703 5498



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Aston Audio Ltd	Alderley Edge	01265 582704	Lintone Audio	Gateshead	0191 4600999	Richer Sounds	Newcastle	0191 2301392
Bryants Hi-Fi	Aldershot	01252 20728	Lintone Audio	Gateshead	0191 4774167	Lintone Audio	Newcastle upon Tyne	0191 232 3994
Northwood Audio II	Aylesbury	01296 28790	Richer Sounds	Glasgow	0141 2265551	Hi-Fi Western Ltd	Newport	01633 262790
Hyper-Fi	Barking	0181 591 6961	Rogers Hi-Fi	Guildford	01483 61049	Listen Inn	Northampton	01604 37871
The Hi-Fi Centre	Barrow in Furness	01229 838757	Sevenoaks Hi-Fi	Guildford	01483 36666	Richer Sounds	Nottingham	01159 241551
Paul Green Hi-Fi Ltd	Bath	01225 316197	Harrow Audio	Harrow	0181 8630938	Superfi	Nottingham	01159 412137
Richard's Audio Visual Ltd	Bedford	01234 365165	Adams & Jarrett Ltd	Hastings	01424 437165	Frank Walton Hi-Fi	Oban	01631 62917
Audio Times	Belfast	01232 249117	Citysound	Hastings	01424 429991	Audio Counsel	Oldham	0161 6332602
Five Ways Hi-Fi Ltd	Birmingham	0121 455 0667	E.T.S. Ltd	Helston	01326 573801	Oxford Audio Consultants	Oxford	01865 790879
Music Matters	Birmingham	0121 429 2811	English Audio	Hereford	01432 355081	Sevenoaks Hi-Fi	Oxford	01865 241773
Music Matters	Birmingham	0121 742 0254	B & B Hi-Fi	High Wycombe	01494 535910	The Hi-Fi Company	Peterborough	01733 341755
Norman H.Field Hi-Fi Ltd	Birmingham	0121 622 2323	Musical Images	Hounslow	0181 5695802	The Hi-Fi Attic	Plymouth	01752 669511
Richer Sounds	Birmingham	0121 643 1516	A. Fanthorpe Ltd	Hull	01482 223096	Movement Audio	Poole	01202 730865
Superfi	Birmingham	0121 631 2875	Superfi	Hull	01482 24051	Now That's Hi-Fi	Portsmouth	01705 811230
Chew & Osbourne Ltd	Bishop Stortford	01279 656401	Zen Audio	Hull	01482 587397	Practical Hi-Fi	Preston	01772 883958
Practical Hi-Fi	Blackburn	01254 691104	Eastern Audio	Ipswich	01473 217217	Island Compact Disc Centre	Ramsey	01624 815521
Romers Hi-Fi Centre	Blackburn	01254 887799	Classic Hi-Fi	Kettering	01536 310855	B & B Hi-Fi	Reading	01734 583730
Practical Hi-Fi	Blackpool	01253 300599	Infidelity	Kingston-upon-Thames	0181 9433530	Reading Hi-Fi	Reading	01734 585463
Sound Academy	Blackpool	01253 300599	Practical Hi-Fi	Lancaster	01524 36991	Moorgate Acoustics	Rotherham	01709 370666
Jaysound Audio	Bognor Regis	01243 826355	The Hi-Fi Company	Leamington Spa	01926 888644	Chew & Osbourne Ltd	Saffron Walden	01799 523728
Practical Hi-Fi	Bolton	01204 395789	Aston Audio Ltd	Leeds	01943 467689	Performance Hi-Fi Systems	Sevenoaks	01732 740425
Mike Manning Audio	Bournemouth	01202 751522	Richer Sounds	Leeds	01132 455717	Sevenoaks Hi-Fi	Sevenoaks	01732 459555
Movement Audio	Bournemouth	01202 529988	Superfi	Leeds	01132 449075	Moorgate Acoustics	Sheffield	01142 756048
Suttons	Bournemouth	01202 555512	Leicester Hi-Fi Company	Leicester	01162 539753	Richer Sounds	Sheffield	01142 661616
B & B Hi-Fi	Bracknell	01344 424556	Listen Inn	Leicester	01162 623754	Superfi	Sheffield	01142 723768
Brentwood Hi-Fidelity	Brentwood	01277 221210	Sevenoaks Hi-Fi	Leicester	01162 557518	Creative Audio	Shrewsbury	01743 241924
Hi-Spek Electronics	Brentwood	01277 226303	Superfi	Lincoln	01552 520265	Shropshire Hi-Fi	Shrewsbury	01743 232317
Quay TV	Bridlington	01262 672870	Beaver Hi-Fi	Liverpool	0151 7099898	Frasers Hi-Fi Video	Slough	01753 520244
Sevenoaks Hi-Fi	Brighton	01273 733338	Richer Sounds	Liverpool	0151 7087484	Richer Sounds	Southampton	01703 231311
The Power Plant Hi-Fi Ltd	Brighton	01273 775978	Audio Concept	London	0181 5678703	Southampton Hi-Fi Centre	Southampton	01703 228434
Richer Sounds	Bristol	01179 734397	Bartletts Hi-Fi	London	0171 6072296	Square Deal Electrical	St. Albans	01727 852501
VAudio	Bristol	01179 686005	Billy Vee Sound Systems	London	0181 3185755	A N Audio	St. Neots	01480 472071
Spains	Bromsgrove	01527 872460	Citysounds	London	0171 4365366	Stamford Hi-Fi Centre	Stamford	01780 62128
Grange Hi-Fi	Burton-upon-Trent	01283 533655	Francis of Streatham	London	0181 7690466	Richer Sounds	Stockport	0161 4801700
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Campkins Hi-Fi	Cambridge	01223 312240	Hi-Fi Care	London	0171 6378911	Superfi	Stoke	01782 265010
Steve Boxshall Audio	Cambridge	01223 68305	Hi-Fi Components	London	0171 2231110	Music Matters	Stourbridge	01384 444184
Sevenoaks Hi-Fi	Canterbury	01227 462787	Hi-Fi Experience	London	0171 580 3535	Stratford Hi-Fi	Stratford-upon-Avon	01789 414533
Richer Sounds	Cardiff	01222 465654	Hi-Spek Electronics	London	0181 3491166	Audio Exchange	Swindon	01793 539008
Practical Hi-Fi	Carlisle	01228 44792	Kamla Electronics	London	0171 3232747	Thame Audio	Thame	01844 215431
Eric Wiley Hi-Fi	Castleford	01977 556774	M O'Brien Hi-Fi	London	0181 9461528	Chelston Hi-Fi	Torquay	01803 606863
Sevenoaks Hi-Fi	Chatham	01634 846859	Musical Images	London	0171 4971346	Sevenoaks Hi-Fi	Tunbridge Wells	01892 531543
Rhythms (Colvill Hi-Fi)	Chelmsford	01245 325125	Myers Audio	London	0181 5207277	Chanry Audio	Tuxford, nr. Newark	01777 870372
Sevenoaks Hi-Fi	Cheltenham	01242 241171	Oranges & Lemons	London	0171 9242040	Astley Audio Ltd	Wallingford	01491 839305
Chichester Hi-Fi	Chichester	01243 776402	Richer Sounds	London	0171 3528496	Doug Brady Hi-Fi	Warrington	01925 828009
Monitor Sound Ltd	Chorley	01257 271935	Richer Sounds	London	0171 4031201	Practical Hi-Fi	Warrington	01925 32179
Pro Musica	Colchester	01206 577519	Richer Sounds	London	0171 7223359	Acoustic Arts	Watford	01923 245250
The Hi-Fi Showrooms	Congleton	01260 280017	Richer Sounds	London	0171 8312888	Hi-Fi City	Watford	01923 226169
Frank Harvey Hi-Fi Excellence	Coventry	01203 525200	Sevenoaks Hi-Fi	London	0171 3529466	Richer Sounds	Watford	01923 218888
Superfi	Coventry	01203 223254	Sevenoaks Hi-Fi	London	0181 8558016	Sevenoaks Hi-Fi	Watford	01923 213533
Richer Sounds	Croydon	0181 6671100	Shasonic	London	0171 3230333	Stirling Sounds	West Wickham	0181 7779321
Sevenoaks Hi-Fi	Croydon	0181 6551203	Son et Lumiere	London	0171 5809059	Cosmic	Weybridge	01932 854522
Hi-Fi Experience	Darlington	01325 481418	Sound Sense	London	0171 4022100	Weymouth Hi-Fi	Weymouth	01305 785729
Superfi	Derby	01332 360303	Superfi	London	0171 3881300	Sevenoaks Hi-Fi	Whitham	01376 501733
Rutters Hi-Fi	Devises	01380 722268	The Sound Organisation	London	0171 4032255	Bartletts Hi-Fi	Woking	01483 771175
KA de Cobains	Doncaster	01302 326026	John Munro	Lossiemouth	01343 812340	Sevenoaks Hi-Fi	Worcester	01905 612929
Hi-Fi Corner	Dublin 2	0110 3531 6714343	B & B Hi-Fi	Luton	01582 459915	West Midlands Audio	Worcester	01905 458046
Richer Sounds	Dublin 2	0110 3531 6719666	B & B Hi-Fi	Maidenhead	01628 73420	Bowers & Wilkins	Worthing	01903 264141
J.D. Brown (Est 1919) Ltd	Dundee	01382 226591	Halksworth Wheeler	Maidstone	01622 756756	Phase 3 Hi-Fi	Worthing	01903 245577
Riverside Hi-Fi	East Twickenham	0181 8927613	Central Radio (M'chester) Ltd	Manchester	0161 8346700	Worthing Audio	Worthing	01903 212133
Musical Images	Edgware	0181 9525535	Practical Hi-Fi	Manchester	0161 8398869	Action Gate Audio	Wrexham	01978 364500
Richer Sounds	Edinburgh	0131 2263544	V.J. Hi-Fi	Margate	01843 226977	Mike Manning Audio	Yeovil	01935 79361
Sevenoaks Hi-Fi	Enfield	0181 3421973	Audio Insight	Milton Keynes	01908 561551	Vickers Hi-Fi	York	01904 629659
Hi-Fi Corner	Falkirk	01324 629011	Technosound	Milton Keynes	01908 604949			

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# V'AUDIO

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### NEW SPRING ITEMS

We tend to refer to ATC, AVI AM8 Ruack quite a lot, so for a change I thought I'd mention some of the newer items we've had in recently. Firstly, the Heybrook Heystak's which we've had for a little while and are extremely good value and sound excellent with male voices. A good all-rounder, well worth auditioning if after a floorstander in the £500 bracket. Another fine all-rounder, but more expensive at £895 is the Opera Callas, plus of course a good stand to allow them to perform at their best.

On the digital front we at last have the Pink Triangle cardinal transport to front our Da Capo (including reclocking DIC), which is sounding excellent, but as we've only had it 2 days, we've lots more evaluation to do yet. We also have had our Mephisto transport, which previously had the Trichord clock 2 mod, upgraded to also have the new Trichord digital line driver, so if you wish to hear the effect, give us a ring for a demonstration.

### ARE YOUR LIGHTS GETTING DIM?

It's amazing that the reduction in mains voltage to 230 volts since Jan. 1st has been carried out with so little publicity, but if you have wondered why your lights are a bit dim and possibly why your Hi-Fi may be sounding a bit dim, that could be the reason. Wait till they drop it even further to 220 volts so that they can buy even more cheap electricity from France!

### CRUSADER V'S EQUINOX

About a year ago we decided to stock the Ruark Crusader rather than the Ruark Equinox, partly because the former seemed closer to the Accolade and was easier to drive. In some respects our full appreciation of the Crusader only occurred when we received the new AVI 100 watt integrated amp at xmas and found a tremendous synergy between the two, especially on classical music. Having now also got the Equinox in stock I am delighted to report that the AVI integrated also suits that superbly as well and the speaker will probably suit more types of music and customer's requirements. With more power from say the AVI pre + monoblocks, the Equinox comes close to the scale of sound of the Accolade - a fine achievement!



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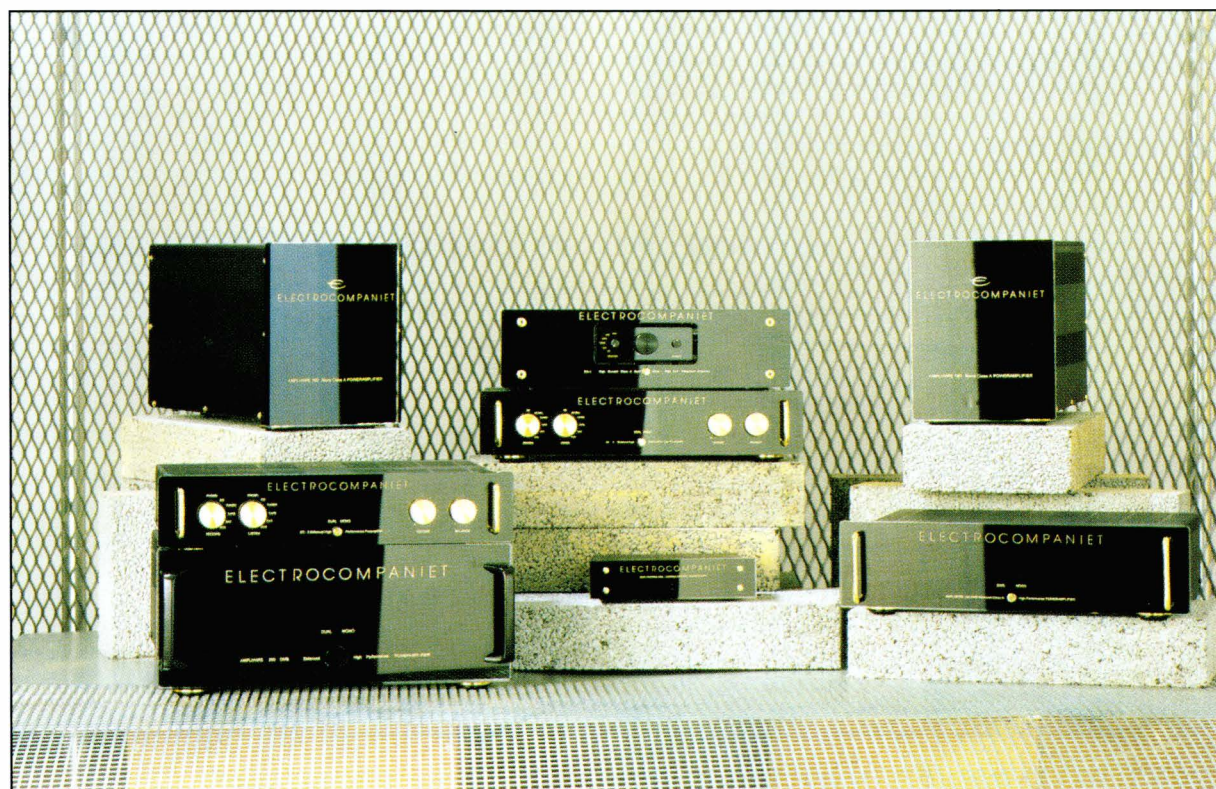
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# ON TEST

# Amplifiers



**Paul Miller explores another price territory on our world map of amplifiers.**

**R**eaders of recent issues of *Hi-Fi Choice* have seen us take a close look at amplifiers between £300-£400 (issue 138) and £400-£600 (issue 140). For those who are keen of ear but somewhat hard of pocket, it's now time for the top contenders between £200 and £300 to strut their transistorised stuff.

Once again, we are concentrating on a very tight band of the market. But even within the narrow £50 gully between £230 and £280, there's quite a wide choice of amplifier design and philosophy. Some, including the Aura, Magnum and Pro-Ject, are unashamedly minimalist in approach. These amplifiers put sound quality well ahead of both flexibility and convenience and, by their very nature, stand or fall according to subjective merit alone.

If you want something more than a basic volume control and input selector, or if you are put off by an amp that looks prehistoric with your shiny new CD player, fear not, for alternatives are at hand. Everything, in fact, up to the lavish convenience offered by remotely-controlled amplifiers from Kenwood and Onkyo is

accessible from the depths of your favourite armchair.

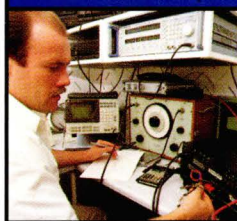
So where's the catch? In theory, there's no reason why the audiophile thinking of Magnum and Aura and the remote flexibility of Onkyo and Kenwood need be mutually exclusive. In practice, however, every facet of an amplifier has its price. When funds are tight, designers often end up robbing Peter to pay Paul in the struggle to offer all things to all consumers.

Whatever its colours, an amplifier has to achieve a certain standard of quality within the price band in order to gain a Recommended label from *Hi-Fi Choice*. It must be judged to be above average for what is already a very generous price. By contrast, a Best Buy is something very special indeed, a reliable, compatible and supreme performer that represents astonishing value.

## The cast list

AURA VA-80	£280
DENON PMA-450SE	£270
JVC AX-A472	£250
KENWOOD KA-3060R	£230
MAGNUM IA170	£270
ONKYO A-803	£260
PRO-JECT 7	£259
SONY TA-F444E	£250

## 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. So, Sony's fabulous *CDP-715E* CD player was retained from issue 137, joining Pink Triangle's faithful *PT/TOO* (LP) and Audio Note's *AN/EII* loudspeakers.

Another unique feature of the *Hi-Fi Choice* reviews is our use of precisely matched listening levels across both CD and vinyl sources, as well as from one amplifier to another. This helps to ensure that every amp is auditioned on a fair and level playing field. Thanks, as ever, to Roger Batchelor (Denon), Guy Sargeant (Audio Components Ltd) and Alan Sircom (Hi-Fi Choice) for the loan of their experienced ears.



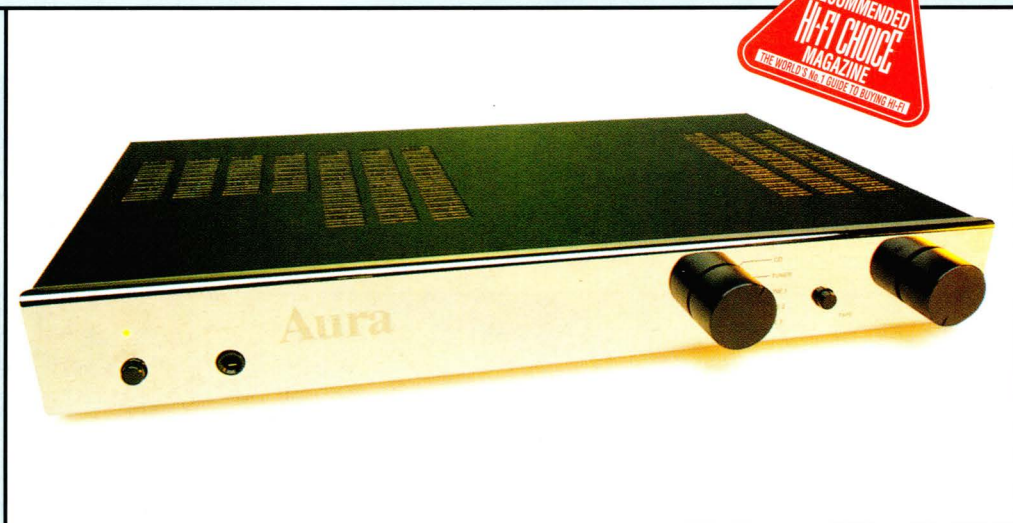
# AURA VA-80



**O**n numerous occasions in the past, our blind listening surveys have uncovered large subjective differences between amplifiers that were virtually identical in design.

This is the case with the VA-80 which is the trimmed-down forerunner of Aura's VA-100 Evolution (issue 138). They share the same sleek casework, although the chrome version of the VA-80 was supplied for this test. The same rotary controls are specified for volume and input selection even if, on the £280 VA-80, Aura's MM phono stage has been discarded in favour of an extra line input. Around the back, we find a single (rather than bi-wire) set of nickel-plated 4mm speaker sockets that will accept both 4mm banana plugs and the thickest multi-strand cable.

Under the bonnet lies the same basic MOSFET power amp that graces the current VA-100 Evolution. But differences do exist, especially in the VA-80's main power supply, which features a smaller toroidal transformer to support its supply rails.



## Sound Quality

"Aside from its light-sounding bass" our listening panel agreed, "this is a difficult amplifier to criticise". The VA-80 is certainly a very jolly-sounding amplifier, even if it lacks a little oomph to reinforce the strongest of bass lines. Only in a lighter moment did our panel suggest that the fleeting quality of Magpie Lane sounded like a cross between the old Z-Cars theme and a sailor's hornpipe...

Otherwise, the VA-80 has a genuinely

honest sound, one that reflects the various tonal characters of myriad instruments — qualities that might only be hampered by a lesser CD player. The cello from Haydn's *String Quartet* lacked a little body and substance, but the vibrancy and brilliance of the remaining strings was quite breathtaking, a vivid performance that really made the most of our Sony CDP-715E front end.

Miles Davis's trumpet sounded equally vivid, just as the ride cymbal sprang into view with an unusual clarity. An unsympathetic amplifier will turn these into a spitty haze, but the VA-80 sustained the natural impact and decay of each stroke as they shimmered into a hash-free acoustic.

Massive Attack's bass line was as they weakened, just as Tracey Thorne's voice was a little thinner and less seductive than usual. Otherwise, the music remained very open, expressive and accessible.

## Conclusion

With the benefit of hindsight, it would have made more sense to review the VA-80 before the VA-100 Evolution. Nonetheless, it served to put the latter into some perspective.

This leaves us with the VA-100's blueprint and an amplifier that's better balanced with a sound that's honest, crisp and sparkling with

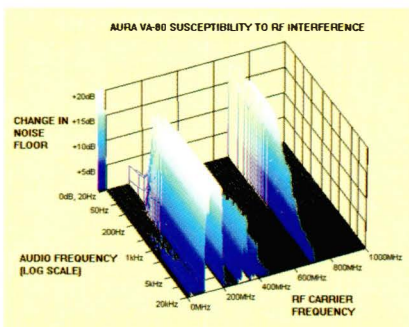
lively detail. Sure enough, the VA-80 is just as nervous of low-impedance loudspeakers as its bigger sibling, but with a pair of sensitive loudspeaker boxes on its side, this unusual design now comes heartily Recommended.

## LAB REPORT

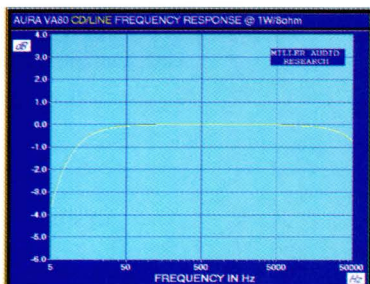
The quirkiness of the VA-100 Evolution is just as apparent in the VA-80, where its output into low-ish impedance loads ( $\leq 6\Omega$ ) is limited by the negative temperature coefficient of its over-heating MOSFET power transistors. Once again, the momentary power output is closer to 68W/104W/131W respectively into 4 Ohm, even though the VA-80 struggles to sustain some 20W on a continuous basis.

Importantly, the 50W-to-20W collapse of the VA-80 is not so dramatic as that suffered by its sibling, while both share the 10-11A maximum current delivery. The VA-80 must be partnered with easy-going, high sensitivity speakers if it's not to be over-stretched.

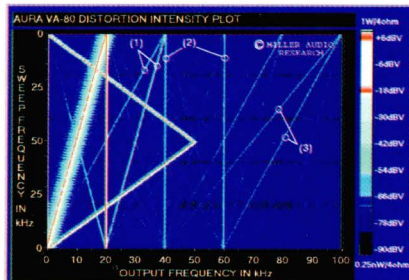
Otherwise, Aura's smaller PSU has the added benefit of improving the VA-80's S/N ratio (87dB from 86dB) while reducing hum and noise (-77dBV from -74dBV). Stereo separation is also improved though the common layout leads to a recognisable RF 'fingerprint'.



The VA-80 remains susceptible to RF noise between 100-200MHz and 300-400MHz with a sharp break at 700MHz.



This plot shows the same mild bass/treble roll-off demonstrated by the VA-100 Evolution in issue 138.



(1) Second-order LF effects. (2) Second and third-order effects increase at HF. (3) Complex crossover distortions.

## VERDICT

- ▲ Free-flowing and energetic without strain or dynamic compression.
- ▼ Lacks deep, rumbling bass. Not for low-impedance speakers.

SOUND ★★★★★

VALUE ★★★★★

PRICE £280

✉ Aura Designs Ltd,  
Marlborough Road,  
Churchill Industrial  
Estate, Lancing, West  
Sussex BN15 8TR  
☎ (01903) 750750



# DENON PMA-450SE



**A**re you one of those people who is always in a hurry? Do you never have time to listen to an entire album? Then Denon's amphetamine-charged *PMA-450SE* could be the thing for you. This is an amplifier with an uncanny knack of condensing a 40 minute CD into half an hour of turbo-charged music.

At first sight, the *PMA-450SE* could easily be mistaken for the 'original' UK-orientated *PMA-450*, reviewed under identical conditions way back in issue 116. Indeed, the same dual-concentric volume control and independent source and rec-output selectors still sprout from the familiar, if rather utilitarian facia.

Under the bonnet, Denon has retained its favoured Ansar Super Sound caps in both the MM and power amp circuits, while justifying its golden 'Special Edition' badge with a new silver-contact speaker relay, new OFC supply wiring and a revised layout for the output PCB (printed circuit board). That's not bad for an extra £20 quid.

## Sound Quality

With an obvious zest for the life and energy of its music, the *PMA-450SE*'s rugged, confident and very positive outlook might, in less sympathetic company, be viewed as



headstrong. Our panel described it as 'subjectively loud, fast and up-front without sounding aggressive'. Haydn's *String Quartet* sounded like a rushed session just before lunch, with all the musicians playing in perfect harmony but at a brisk pace.

Even the measured drama of Massive Attack's *Better Things* was hurried, encouraging a very large, clear and open sound. But the sense of atmosphere clearly suffered from this haste. In similar fashion,

Magpie Lane sounded more like Jethro Tull thanks to the amp's well-meaning but feverish enthusiasm to have this gentle folk tune fill every corner of the room.

Yet, it is difficult not to admire the clarity of its mid-band, which remains both sharply focused and explicitly detailed. Moreover, the amp still sounds 'quicker than average' via its MM input, with plenty of detail.

Joni Mitchell sounded particularly expressive, emerging from a subjective fog with a much fresher and very lucid performance. Rachmaninov's Symphonic 'Dash' galloped along but remained polished, powerful and undeniably entertaining. This is the key: although the *PMA-450SE* is far from sober, it does remain highly engaging, regardless of your choice in music.

## Conclusion

The similarities between blind listening and lab tests for the original *PMA-450* two years ago, and those published here for the 'new' *PMA-450SE*, are uncanny. This suggests a mild tinkering on behalf of Denon, rather than a super-charging of a once-favoured design.

Two years on, however, and the foibles of the Denon *PMA-450SE* are a little closer to the subjective surface. By trading dramatic tension for extra verve, this exciting and

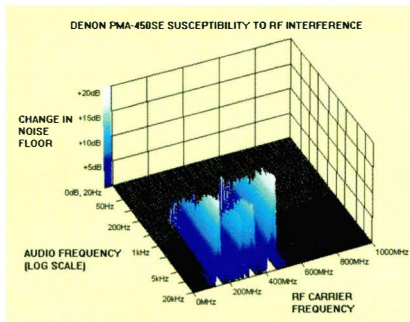
energetic performer — like its predecessor before it — continues to ensure the likes of Massive Attack sound more a Rapid Attack. So just remember to don a sturdy flak jacket before reaching for the volume control!

## LAB REPORT

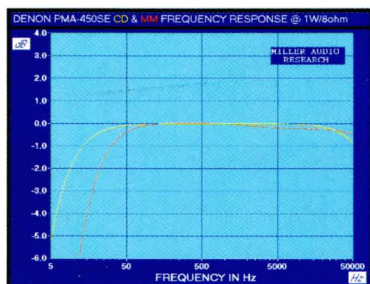
The measured performance of this amplifier is very close indeed to that of the original *PMA-450* (issue 116). Power output remains steady at 100W into 8 Ohm and 150W into 4 Ohm, all ably supported by a huge 20A reservoir of current. This represents an increase of about 1A, possibly due to the improved PSU wiring.

More importantly, the 18mV and 287µV input sensitivities for CD and MM respectively are nigh-on identical to the 18mV/291µV recorded two years ago — confirming that the gain (amplification factor) and feedback remains completely unaltered.

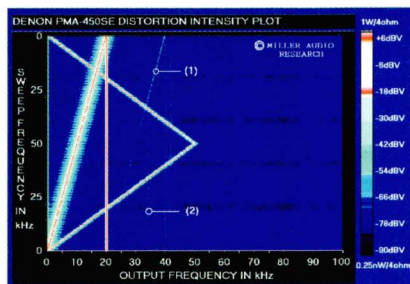
The tolerancing of Denon's volume control has deteriorated slightly but, to its credit, neither the channel separation nor noise figures have been adversely influenced by the revised output board layout. The amplifier's susceptibility to RF interference, however, is slightly worse even if its steady-state distortion remains solid at ±0.002 per cent.



Changes in layout have aggravated sensitivity to RF noise, which shows unwanted peaks between 150-430MHz.



The CD response (yellow) is only 1dB down at 12Hz. MM treble 'shelf' (red trace) should exert little or no influence.



(1) THD is kept in check, despite a hint of second-order IM distortion. (2) Note just visible radiated interference.

## VERDICT

- ▲ This amp will take you on a cresta run through the twists and turns of all musical styles.
- ▼ Blink and you'll miss the musical view.

SOUND ★★★★★

VALUE ★★★★★

PRICE £270

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# JVC AX-A472

**C**autious is a corporate watchword at JVC. Having developed a reliable CD player or amplifier, this company will tend to stick with the same basic design for several seasons. As a result, the latest AX-A472 and its bigger brother, the AX-A572, bear an uncanny resemblance to the earlier AX-R462 and AX-R562 (issue 121). Yet, in an apparent backlash against the current trend for high-convenience amplifiers, JVC has stripped off all its electronic signal-switching ICs.

Crucially, these latest variations lack the full remote control of their forebears, as logic-controlled input and rec-out selection is replaced by good old-fashioned mechanical switches. Fortunately, relay switching for both A and B speaker selection has been retained.

Otherwise, the AX-A472 is no less flexible than its forebear, including a handy source direct option to bypass the bass, treble and balance controls, and a loudness contour to augment very-low-level listening. Meanwhile, decent 4mm speaker sockets ensure the AX-A472 will cope with any grade of cable.

## Sound Quality

This is a perplexing, almost chameleon-like performer that has the unnerving habit of



changing its spots midway through a track. "Not unlike", it was suggested, "one of the more wayward examples of Pioneer's *Legato Link* CD player technology".

The simple whistles that mark the intro of Magpie Lane's *Oxford Rambles* were very open and full of life. This vibrancy was initially compelling. However, the same instruments soon sounded hard and insistent, prompting the suggestion that "a group of unruly children had commandeered the stage".

Low notes often proved problematic, with the acoustic bass from Miles Davis's *So What?* occasionally rolling and booming like some drunken, retired, Home Counties colonel. The mean bass from Massive Attacks' *Better Things* wobbled uncertainly into the room, smearing some of the vocal detail but leaving the quiet, pure-sounding treble comparatively untouched. Sadly, Haydn's strings sounded too thin and starchy, with a relentless quality that irritated our listeners in the longer term.

Our panel was much more impressed by the warmth and clarity of JVC's MM phono stage. Here, the bass guitar and kick drum running through Joni Mitchell's *Cool Water* sounded resonant and detailed, just as her voice was purer and less 'processed' than vocals had sounded via CD.

## Conclusion

Although it lacks a remote control, JVC's AX-A472 is flexible, very well built and appropriately powerful for its £250 price. The internal design is also rugged and serviceable, promising a long and trouble-free life even if its new-found simplicity has not wrought any clear subjective advantage.

As a consequence, and despite allowing you to follow the overall intentions of an orchestra or group of musicians, the AX-A472

singularly fails to depict the character and actions of individual performers within the ensemble.

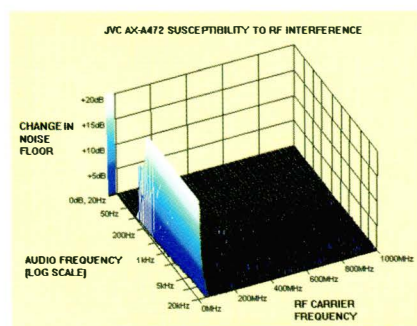
JVC may be on a progressive track with its amps, but it needs to pick up its heels before being rewarded.

## LAB REPORT

What we have here is an example of well-meaning but subjectively irrelevant specmanship. Distortion, in particular, is dealt with quite ruthlessly by vigorous compensation that squeezes harmonic products to below 0.001 percent and in-band IM distortion to less than 0.0004 percent. Unfortunately, we know from experience that such techniques can just as easily strangle an amplifier's subjective subtlety.

The amplifier also looks pretty powerful at 80W into 8 Ohm although, in this context, the 11A maximum current rating is hardly generous, representing momentary bursts of 115W into a 1 Ohm load. As a result, I'd still advise against partnering the AX-A472 with tricky loudspeakers, particular in its A+B mode.

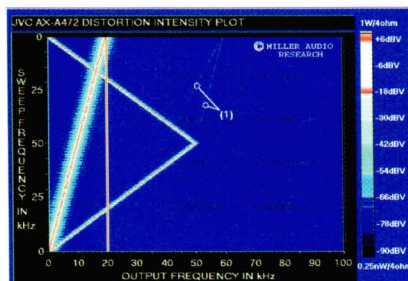
The AX-A472's S/N ratio, by contrast, is rather below average at 82dB (re. 1W/80hm), leaving JVC with an overall performance that's vaguely similar to Sony's equally equivocal TA-F444E.



This wideband design is responsive to signals (including RF) up to a few MHz, beyond which it is adequately filtered.



The slight response peaks are uneventful, but JVC's MM bass roll-off will still boost the turntable's arm/cartridge resonance.



Distortion is squashed below 0.001 percent. (1) Traces of third-order IM distortion are just visible.

## VERDICT

- ▲ A rugged and reliable amplifier for dyed-in-the-wool turntable fans. Can on occasion be as forgiving as 20 lashes from a cat o' nine tails.

SOUND ★★★★★

VALUE ★★★★★

PRICE £250

✉ JVC UK Ltd, JVC House, JVC Business Park, Priestley Way, London NW2 7BA  
☎ (0181) 450 3282

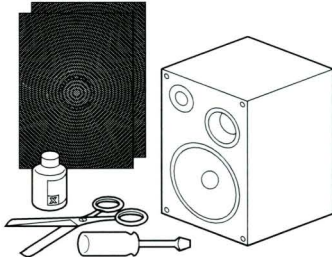




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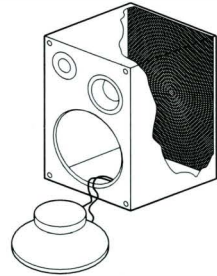
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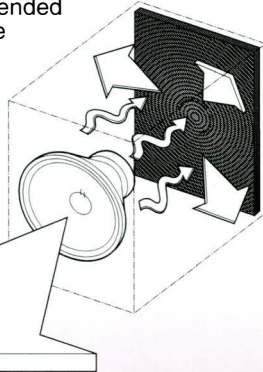
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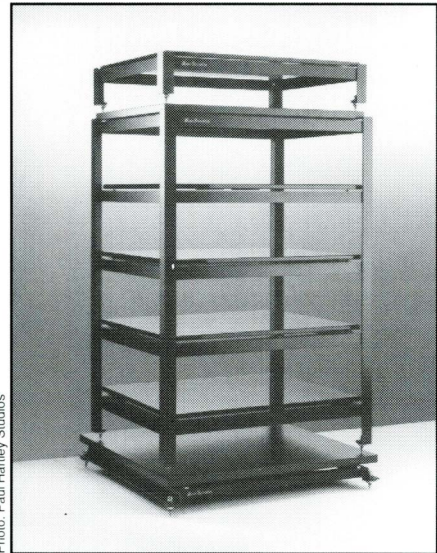


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# KENWOOD KA-3060R

**W**ith no less than five of its eight integrated amplifiers now available *avec* full remote control, Kenwood has established itself as a leading light in the struggle to combine graceful aesthetics with lavish facilities and a generous helping of Watts. The *KA-3060R* is a perfect example of the breed, and an alternative (rather than a replacement) for the similarly-priced *KA-3020SE* (issue 134). Along with the cheaper *KA-2060R*, this amplifier represents a development of the older *KA-3050R*.

The general layout of the *KA-3060R* — with its logic-controlled input selectors for MM phono, two tape and two line sources, its elegant bass, treble and balance controls, plus muting and loudness facilities — is clearly related to the *KA-2060R* rather than the MOSFET-equipped *KA-4060R*. The *KA-3060R* also features Kenwood's LRCM (Low-Resonance Control Mounting) to reduce any vibration reaching the volume control and thereby modulate the audio signal.

Any function that's directed by Kenwood's own internal microprocessor is also accessible via the remote. This includes the motorised volume control, input and tape switching, tone defeat and muting.



Compatible separates may also be controlled via Kenwood's XS8 BUS connection, which runs from the rear of the amp.

## Sound Quality

"Very big and very dry" suggested one listener, "like a bucket of vodka martini". This is the *KA-3060R* in a nutshell — an amplifier that sounds expansive through either CD or MM inputs without appearing especially vibrant or atmospheric. Miles Davis's *So*

*What?* sounded forced on this occasion: acoustic double bass adopted an electric tone, weakening the colourful resonance and nimbleness we had come to expect.

Quite a few recordings sounded slightly strained. These included *Cool Water* by Joni Mitchell, whose voice lacked a sense of individuality and expressiveness. It projected a larger-than-life image, even if "it's rather like an alcohol-fuelled dragster being run on half a pint of lager shandy".

So, the *KA-3060R* sounds big and strong but is often clumsy and hamfisted, presenting Haydn's *String Quartet* in piecemeal fashion rather than reflecting the true subtlety and contrast of these fragile instruments. On a more positive note, the bruiser within the *KA-3060R* was more than happy to wrestle with the earthy bass of Massive Attack's *Better Things*, encouraging a large, bold and lively sound that rescued it from the pit of blandness. Something of a rough diamond, by all accounts.

## Conclusion

"A chip butty in the finger buffet of audio", concluded one erudite listener. "It sounds earnest but unsophisticated, like a character from an HE Bates novel". Technically, the *KA-3060R* is on the straight-and-narrow, just as

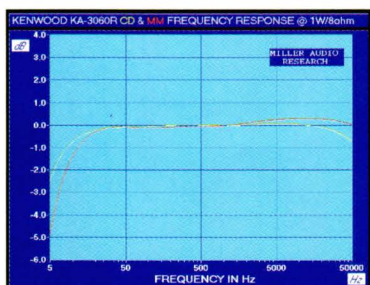
its build quality and flexibility are guaranteed to earn Kenwood new admirers.

Complying with all the latest EMC regulations never was a sure-fire route to audio bliss. Full marks for effort, then; rather less for its sonic execution.

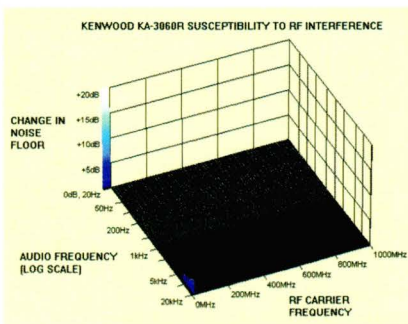
## LAB REPORT

The 63-69W 80hm output of this amplifier comfortably exceeds Kenwood's 45W specification for the 20Hz-20kHz audioband, while its generous 12A current rating ensures trouble-free music-making with difficult speakers. The high 0.2Ohm output impedance is rather less impressive. Kenwood is employing relay-fired speaker protection, but its A/B output selection is achieved manually and with recourse to over two feet of internal ribbon cabling!

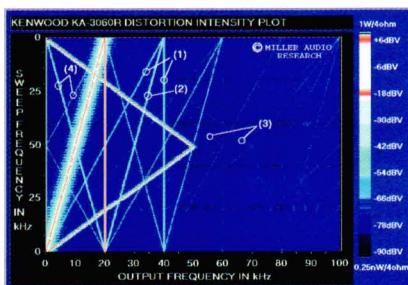
As a result, I would expect some variation in the bass and treble performance of some loudspeakers, especially with long, moderate-inductance speaker cables. Otherwise, the modest 0.04-0.06 percent distortion is almost entirely second order via CD (decreasing further at higher power) and second/third order via MM. Despite Kenwood's use of Class A driver circuitry, this increase in THD at a lower power output looks suspiciously like crossover distortion.



The CD input (yellow trace) is flat and extended, but the MM (red) input shows a broad +0.35dB treble boost.



This amp shows a clean pair of heels to RF interference through cascode circuitry and nasty ceramic filters on its inputs.



(1) Second harmonic and (2) second-order IM distortions. (3) Unusual IM patterns. (4) Second and third-order IM distortion.

## VERDICT

- ▲ A large and enthusiastic sound that lends itself to rock and pop.
- ▼ Over-stretches itself, revealing an eager but agricultural performance.

SOUND ★★★★★

VALUE ★★★★★

PRICE £230

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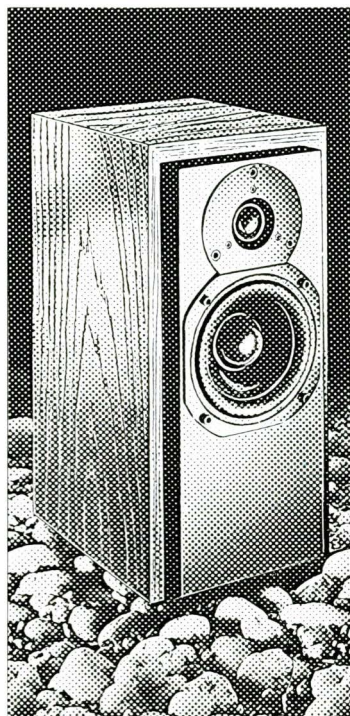
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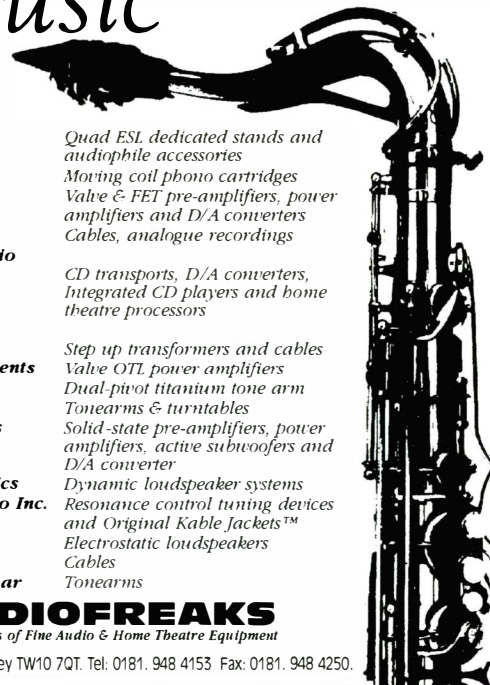
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# MAGNUM IA170

Every once in a while, this small but innovative company comes up with some surprising goods. Remember the Class-A device that warmed the listening room in issue 116? Well, the *IA170* is just as 'classy', despite running a good deal cooler. Once again, it's a line-only amplifier with inputs labelled for CD, LD, VCR, tuner, aux and tape sources. I believe Magnum can supply a phono board if specified before purchase.

The low-profile chassis, with its gold livery, volume and balance controls plus mono and muting facilities, seems culled from the less-than-spectacular *Quartet-A* (issue 121). The innards, however, represent an upgrade from the earlier *IA120*, a lower-powered integrated amp originally conceived for the Italian market.

With the *IA170*, we find a very rugged and straightforward design, based on an old Darlington circuit, but featuring pairs of discrete 25A transistors. These are run at enriched bias and from a Class-A driver stage.

The *IA170* is seemingly designed to be bomb- and nerd-proof, with its 3A slow-blow



PSU fuses popping well before the amp turns into an expensive firecracker. It incorporates a huge power supply to clout recalcitrant loudspeakers, but lacks any sort of invasive hi-tech protection circuitry. Either way, it's never a bright idea to short the output of an amplifier, so take care when wiring up!

## Sound Quality

Auditioned directly after the lacklustre efforts of Onkyo's *A803*, the living, breathing music that danced from the *IA170* could not have provided a greater contrast. This amplifier not

only captured the mood of the music, but also the imagination and enthusiasm of our hard-bitten panel.

In ultimate terms, the *IA170* still suffers a loss in transparency and low-level 'blackness', but gives a realistic sense of vibrant-sounding instruments playing within a very believable acoustic. According to our panel, Magpie Lane now "conjured a rustic impression of Morris men cavorting outside a village pub somewhere near Ambridge".

There was a brilliance to the violins from Haydn's *String Quartet*, revealing a hint of brightness but preserving the colour, harmonic detail and ambience of the recording. Vocal sibilance was well controlled, with Tracey Thorne singing Massive Attack's *Better Things* in a very seductive and expressive way while staying firmly in check.

The bite, life and tempo of Miles Davis's *So What?* expressed so much more of his muting technique along with the substantial snap of the drums and crisp definition of the cymbals. Without a doubt, Magnum's *IA170* marked the high point of our day.

## Conclusion

"Cooked in the oven, rather than the microwave" concluded the panel, "so the true tonal flavour of its music is allowed time to develop". Magnum's *IA170* could sound more fluid and colourful, but these criticisms pale

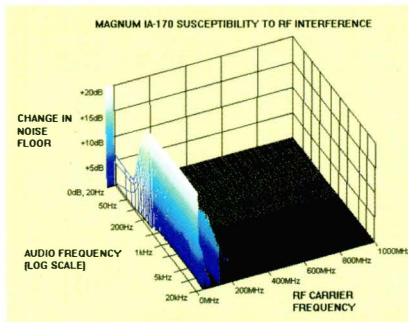
into insignificance against the obvious virtues of clarity, confidence and real-world charm. Quirky, in a safe, yet entertaining manner, the unassuming *IA170* earns Magnum its first Best Buy.

## LAB REPORT

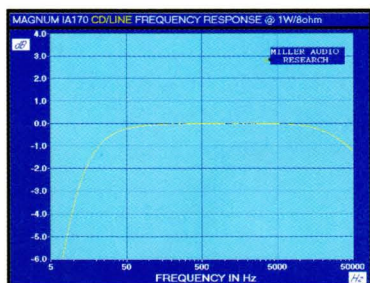
Don't be fooled by its appearance, for the *IA170* is a genuine little powerhouse capable of sustaining 155W into 4 Ohm and delivering bursts of 470W into impedances as low as 1 Ohm. Difficult or insensitive speakers should pose it no trouble.

Otherwise the *IA170* has complex intermodulation distortions outweighing harmonic distortions by 20-30dB (up to 30:1). This seems to be linked to a mild parasitic RF instability which, in turn, could be caused by Magnum's choice of output inductors. Changing these for air-cored derivatives might quell the RF 'fuzz', but it might just as easily dampen its attractive sound.

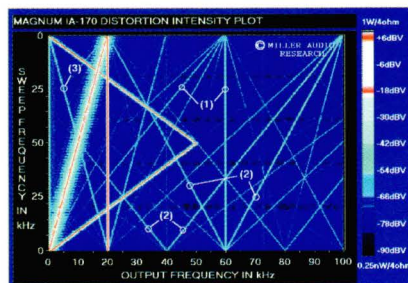
As there's no compromise to safety, my advice to Magnum is to leave things as they are and concentrate, instead, on improving the relatively poor 80dB (re 1W/80hm) S/N ratio. Then at least the *IA170* might sound a little cleaner.



Aside from 110MHz, this is susceptible to RFI through the 1-40MHz band where many CD players kick out spurious noise.



Although the line response of the *IA170* looks to be rolling off a little prematurely, it's only -3dB down at a respectable 10kHz.



(1) Third harmonic distortion increases with frequency. (2) Fifth-order patterns mix with second-order IM distortions (3).

## VERDICT

- ▲ An expressive and atmospheric amplifier, free from artificial colours and preservatives.
- ▼ Not quite as sweet or pure as possible with the most demanding material.

**SOUND** ★★★★★

**VALUE** ★★★★★

**PRICE** £270

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# ONKYO A-803

**H**aving done rather well for itself with the *DX-750* CD player in issue 141, Onkyo has less to get excited about with the *A-803* amplifier. Not that there's anything terribly offensive about this powerful and flexible little machine. Far from it. The combination of Onkyo's excellent build quality and the convenience of full remote control gets the *A-803* off to a rip-roaring start.

The main volume control is motorised, and its tape, VCR, tuner, CD and phono inputs (along with source direct, muting and tape monitor facilities) are all logic-switched. Even the A/B and A+B speaker selection is governed by electronic (relay) switching, along with power on/off — qualities that enable all these functions to be duplicated on its *RC-205S* remote handset.

Other widgets, including bass, treble and balance adjustment, and MM/MC phono cartridge selection can only be tackled via the smooth-looking black alloy fascia. Onkyo's final slab of icing is called 'Sel-Tone', an option that allows you to select either its bass tone control or a variable loudness contour (for low-level listening) at the flick of a switch.



## Sound Quality

This is a rather timid-sounding amplifier; not unpleasant but not especially invigorating either. Every track on our playlist was described in deprecating terms as "flattened in tone, dynamics and rhythm". Put simply, the *A-803* consistently failed to portray a full range of contrast.

Miles Davis's *So What?* should have kicked off at a fair old pace, but instead sounded uncharacteristically stilted and jerky,

with a blurred and sploody rather than sonorously resonant bass. "Instead of sounding like a CD" remarked one listener, "it sounds more like a tape from the car".

Haydn's *String Quartet* also lacked its customary interplay. All four instruments were neatly separated, but also isolated and forced towards the left and right of the soundstage, leaving a hole in the middle.

Things do look a little brighter via MM, where a more polished sound is revealed. Its bass is lighter, giving the impression of a livelier sound, but with the overriding sensation of a power amp lacking guts and gumption. Sadly, our listeners found little to commend, even though the *A-803* is not especially grating or unpleasant. It is simply too vague, bland and uninspiring. "When it comes to passion and soul", they remarked, "this amp is lacking in the Dover department".

## Conclusion

Oblivious to its bold appearance and hardy standard of engineering, our blind listeners admonished the *A-803* for its nebulous performance, which lacked in both conviction and ambition while fighting shy of the natural thrills and spills of realistic music.

To some, its generous power rating, broad

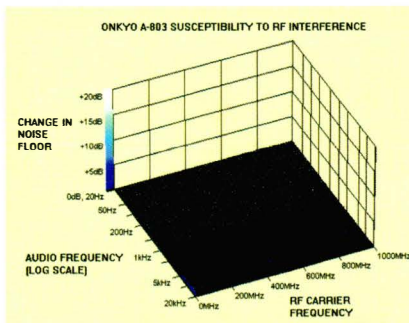
compatibility and full system IR remote control will prove very tempting indeed. Others, however, will be frustrated by its lack of spirit. The *A-803* is both easy-going and undemanding, but so is watching *Anne and Nick*.

## LAB REPORT

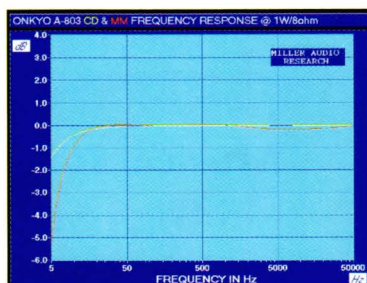
From the measurement viewpoint, this is possibly the least unusual (and least interesting) amplifier of the bunch. To Onkyo's credit, the 88W/8 Ohm capacity is not only comfortably in excess of its 60W rating, but also increases by +1.9dB to 137W into 4 Ohm. A pity then, that its 14A current reservoir is cut prematurely short by some invasive protection circuitry.

The S/N ratio of 83dB/1W is hardly state-of-the-art but, as Onkyo claims, at least crossover distortion is reduced at these low power levels. Figures in the region of 50.01 per cent are typical for the *A-803*. Foibles include the high parallel capacitance of its CD/line inputs (intended to reject RFI) and equally high 3.4kOhm output impedance of its tape buffer.

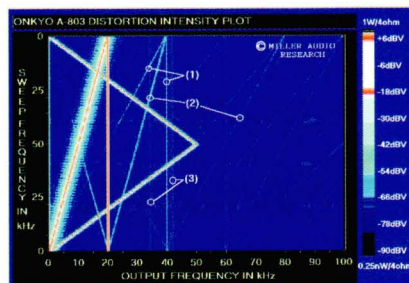
As a result, the *A-803* will not necessarily provide an ideal switching centre for tape recordings. Strange, as Onkyo has ensured the main speaker outputs enjoy a relatively low 0.07 Ohm output impedance.



Full rejection of RF interference is achieved using ceramic and inductive filters which exact their own penalty.



The mild -0.25dB treble sag in the MM (red) response is less troublesome than its excessively extended bass.



- (1) Simple second harmonic distortions.
- (2) Second and fourth-order IM patterns.
- (3) Spurious lines of interference.

## VERDICT

▲ A tempering influence for aggressive CD players and loudspeakers.

▼ A perfect amplifier for life's under-achievers.

SOUND ★★★★★

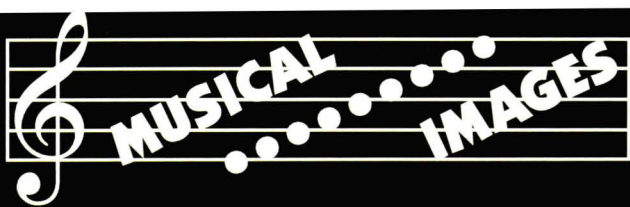
VALUE ★★★★★

PRICE £260

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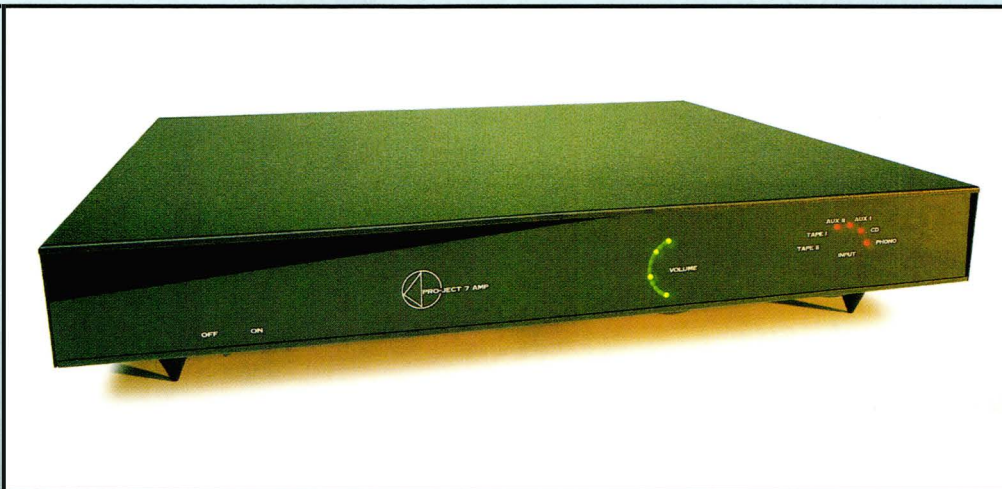


# PRO-JECT 7

**F**ew amplifiers would have the pedigree to call themselves 'Pan-European', but the *Pro-Ject 7* comes close. This eccentric design results from a collaboration between enthusiasts in Austria and the Czech Republic, where it is assembled. As a further twist, the *Pro-Ject 7* is then distributed in the UK via the Danish company Ortofon.

The amp itself is sealed inside a slim but very deep and broad case. It's supported on four nylon cones designed, 'if I read the literature correctly, 'to improve sound quality'. In common with most cheap pork pies, the filling of the *Pro-Ject 7* is about 60 per cent fresh air. The real reason for the amp's abundant casework, I was later informed, is to provide 'a flat and relatively stable surface for a turntable or CD player'.

Rotary controls are provided for volume and input selection. These are only accessible from beneath its smoked perspex faceplate and connected via rods to localised controls on the main PCB, which also houses much of the power supply, the robust power amp and *Pro-Ject's* joint MM/MC phono stage.



The gain and loading of this disc stage is determined by snipping through various hard-wired links on the board. Our sample was set to MC. Its line inputs are routed directly to the power amp via the volume control.

## Sound Quality

In keeping with its audiophile pretension and quirky design, the *Pro-Ject 7* sounds like one very weird cookie. "Possibly", suggested one panelist "a chocolate chip and spam". Miles Davis's muting technique was obviously

exaggerated, damping the bite and attack of the brass as a whole. Similarly, the folk cello from Magpie Lane sounded more like a hurdy-gurdy, while the pipes reminded us of a fairground barrel organ.

This manipulative quality carried through to Haydn's *String Quartet* which, though utterly coherent in its own right, was hardly faithful to the original. The ensemble sounded uncharacteristically lifeless, for although the music was clear enough, it lacked the sense of joy, colour and acoustic we had come to expect. "Surely", suggested one listener "these are not the same performers".

Tracey Thorne, meanwhile, proceeded to wade through a warm pool of bass. We felt that the track sounded measured "to the point of being Swiss".

The *Pro-Ject 7* also fails to appreciate loud or busy sections of music, where its sound veers towards a harder and less sympathetic quality. And the MC stage? Just as disappointing, eliciting descriptions like "murky, compressed and uneven".

## Conclusion

Rather than reflecting the true character of the music at hand, the *Pro-Ject 7* prefers to editorialise, presenting a somewhat skewed if not uninteresting appraisal. Moreover, the technical oddities suggest its performance

will vary quite markedly according to location and system.

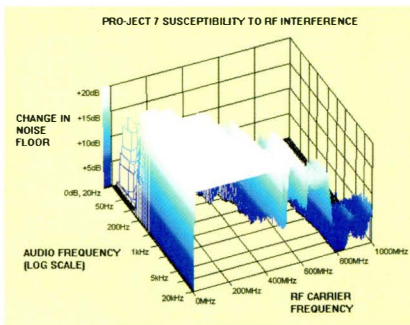
If you're tired of an orthodox presentation and prepared to cope with its uncertain compatibility, then give the *Pro-Ject 7* a whirl. Otherwise, try elsewhere.

## LAB REPORT

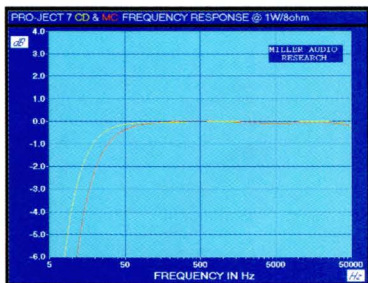
The *Pro-Ject 7* is an honest but decidedly quirky design, which invokes a series of conflicting measurements. For example, it only just achieves its 38W rated spec, although the gain of the amp seems to increase with frequency. Power supply regulation is obviously very tight, as its output increases by +2.3dB into 4 Ohm, ably supported by a full 11A of current. Low sensitivity and/or low impedance speakers should be avoided.

Then, there's the fabulously wide 101dB S/N ratio — a full 20dB wider than others in this test but a feature that only serves to expose its appalling sensitivity to RF noise. By comparison, the 63dB S/N of its MC phono stage seems very poor.

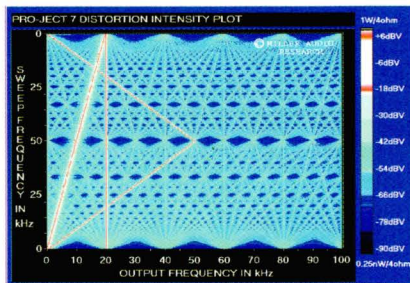
In practice, however, the 7's phono stage is about 15dB less sensitive than the 'average' MC input. It is therefore better suited to high-output MC cartridges (like our VdH MC TWO), which will tend to optimise its noise performance.



This amplifier is more like a tuner! Up to +50dB of noise modulation is produced by interference between 5-400MHz.



The 'flatness' of these responses show the MC stage (-3dB at 15Hz) and power amp (-3dB at 10Hz) to be well engineered.



In practice, high frequency sounds and low impedance speakers cause a cascade of distortions throughout the audio band.

### VERDICT

- ▲ Offering a highly personalised view of its music, it still remains artfully balanced.
- ▼ Otherwise, it would appear to be technically and subjectively very odd and capable of uncertain results.

**SOUND** ★★★★★

**VALUE** ★★★★★

**PRICE** £260

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# SONY TA-F444E

**H**aving just pored through Sony's outrageously thick brochure, it seems as if the UK version of its TA-F444E amplifier bears little resemblance to the '444Es foisted on the rest of the world. Our sample adopts the gene-sequence of the TA-F244E, while providing more power and the advantage of both MM and MC phono inputs.

Otherwise, its substantial black alloy fascia is mercifully uncluttered. Although Sony has provided independent input and rec-out selectors plus a relay-linked speaker switch, there are neither tone nor balance controls. This must be another first for Sony.

This is an extension of the amplifier's elegant and largely discrete internal design. Separately regulated power supplies feed different stages within the amp to minimise interference while stable LEDs are used to bias the current sources feeding the high-speed MOSFET power amp. Incidentally, you can see the two green LED's glowing beneath its perforated bonnet — they are not fitted to indicate when the amp is switched on!

## Sound Quality

Darker and richer-sounding than most, the TA-F444E has what was described as an



'architectural quality' — one that's big on musical structure but not so hot when it comes to carving out fine detail. Its bass is especially strong but not entirely natural, compelling our listeners to tap their feet by force rather than subtlety and guile.

Tracey Thorne's voice usually sounds as smooth as a Galaxy bar. On this occasion, it was likened to a Toffee Crisp — "somewhat chewier and filled with crunchy bits," — by a member of the panel whose blood sugar was

clearly on the wane. Furthermore, instead of creating a moody atmosphere, the amp elevated this simple ambience into one that was almost threatening at times.

Haydn's strings sounded a little too messy and artificial, a vagueness and dirtiness that also afflicted the pipes and whistles from Magpie Lane. No mistaking its gutsy small-scale instruments sounded much too big for their boots. Miles Davis's piano now sounded slightly boxy and wooden, "like an upright squeezed into the corner of a primary school's assembly hall". Rather than ameliorate the situation, Sony's MM phono stage tends to magnify these effects, encouraging a warm but brutal and messy sound. Joni Mitchell's *Cool Water* sounded overly resonant, her voice overblown and the percussion like a metal comb being rasped against corrugated steel.

## Conclusion

The TA-F444E was initially praised for its seemingly spacious soundstaging and rugged bass. However, track by track, the support of our listeners steadily fell away, taxed by its mechanical delivery.

Just because Sony comes up with two astonishingly good CD players (the CDP-715E

and CDP-915E), its good fortune does not necessarily hold true across all product ranges. Try not to be fooled by first impressions. Once purchased, you've got to live with your decision for more than five minutes.

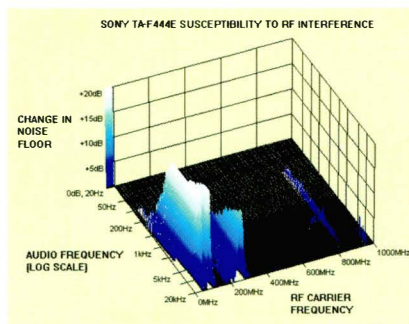
## LAB REPORT

In the broadest sense, the TA-F444E is a very compatible amplifier that offers sensible input sensitivities with decent overload margins, low distortion (typ.  $\pm 0.001$  per cent) yet still packs a wallop. So, although it achieves a modest 60W 8 Ohm rating, the generous 14A current reservoir ensures that difficult loudspeakers will be handled with comparative ease.

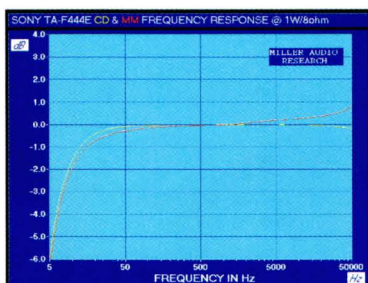
However, it does have its foibles. Judicious use of feedback may have squashed any distortion, but the 1W S/N ratio of 82-83dB is nothing to write home about, especially as this improves to a best-case figure of just 91dB (which is some 10-15dB short of what's possible).

The relatively uninspiring 45-69dB stereo separation also points to a less-than-optimum track layout.

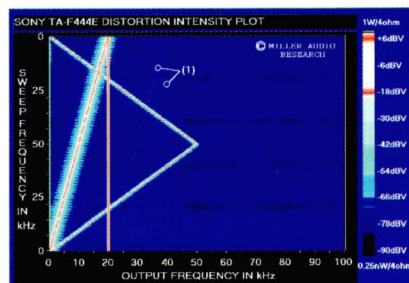
Moreover, and despite Sony's use of local speaker switching, the amplifier's final output impedance remains relatively high at 0.14 Ohm, thanks to a series resistor/inductor network.



In avoiding brutal input filtering, Sony has rendered the amp susceptible to RF noise up to 100MHz and at 200-230MHz.



The CD response (yellow trace) looks flat enough, but MM (red) equalisation seems to encourage a slightly tilted balance.



(1) Due to compensation, only minor second-order IM and harmonic distortions are visible at higher frequencies.

## VERDICT

▲ A decently powerful amplifier that will lend itself to a modern budget system.

▼ A very poor partner to Sony's fabulous range of CD players.

**SOUND** ★★★★★

**VALUE** ★★★★★

**PRICE** £250

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# AMPLIFIERS

## Conclusions, Best Buys and Recommendations

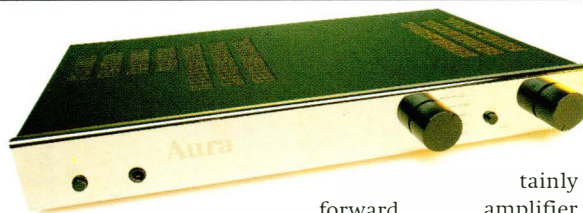
Previous amplifier surveys in *Hi-Fi Choice* have demonstrated that a smattering of user-convenience features, including remote control, need not have an unhealthy influence on the sound of an amplifier. In this instance, however, the generous pricing of the amplifiers has resulted in some sonic sacrifice on the widget-strewn altar of features and facilities.

This is certainly true of both the Onkyo A-803 and Kenwood KA-3060R, which successfully offer armchair-guided power at a very fair price. This has, perhaps inevitably, eaten into the meat of the amplifier's design



budget. This factor, along with their compliance to harsh EMC regulations, seems to have digested much of the expressiveness and vibrancy of their sound.

The likes of JVC and Sony have rather less of an excuse for their 'below average' showing, if only because both companies have actively abandoned full remote control in order to concentrate on straight-



forward sonic engineering. Sure enough, both amps are solidly and reliably constructed. Somehow, though, the AX-A472 sounds strident, cold and barren, just as music emerging from the TA-F44E appears too rigid and methodical for complete comfort.

In a similar vein, an amplifier like the Pro-Ject 7 is a very well-meaning attempt whose eggs are all placed in an unstable basket full of rocks. If nothing else, its gross susceptibility to RF interference will result in a very unpredictable performance from area to area. It will probably sound

best in a Faraday cage.

Having just given the old PMA-450 a new lick of internal paint, Denon's PMA-450SE represents the best balance between Far Eastern build quality and value with a genuinely up-beat but unaggressive sound. If your system needs super-charging, then this is the 200 horsepower option.

All of which leaves us with two feature-free amplifiers that make the grade solely on the aesthetics of their sound. Aura's VA-80 is certainly a pleasant surprise. This is an amplifier that enjoys a very natural, honest and quietly seductive sound, provided it's teamed-up with a pair of easy-going loudspeakers. It also demonstrates just how easily these qualities are upset in the quest for added power (see VA-100 review, issue 138).

Less fussy over your choice of speaker, and the lone Best Buy of this test, Magnum's IA170 proves to be one of the most powerful, load-tolerant and subjectively entertaining amplifiers on this side of £300. Its music embraces a brilliance and vibrancy which is sadly lacking in its competition, and a sense of detail is achieved without training a harsh spotlight on individual performers. The Magnum IA170 is a flavoursome whole-grain in a market dominated by anonymous, soft, white rolls.



## Measurement data at a glance

	Aura VA-80			Denon PMA-450SE			JVC AX-A472			Kenwood KA-3060R			Magnum IA170		
	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz
MAX CONTINUOUS POWER OUTPUT INTO 8ΩHMS	47W	52W	50W	85W	100W	94W	80W	80W	79W	63W	69W	65W	93W	96W	92W
INTO 4ΩHMS	18W*	20W*	12W*	120W	152W	131W	120W	125W	124W	90W	99W	78W	152W	155W	143W
DYNAMIC HEADROOM (IHF)	+1.4dB (73W)			+1.0dB (125W)			+1.3dB (108W)			+1.0dB (88W)			+1.2dB (126W)		
MAXIMUM CURRENT (5mSEC, 1% THD)	10.9A			19.6A			10.7A			12.3A			21.7A		
OUTPUT IMPEDANCE	0.105ΩHM			0.049ΩHM			0.048ΩHM			0.210ΩHM			0.116ΩHM		
DAMPING FACTOR	76.4			161.7			167.7			38.1			69.2		
CD/AUX															
STEREO SEPARATION (1kHz)	95dB			85dB	60dB		79dB	54dB		66dB	41dB		73dB		
(20kHz)	68dB			86dB	60dB		78dB	52dB		65dB	40dB		58dB		
CHANNEL BALANCE (1kHz, -20dBV)	0.1dB			0.0dB	1.5dB		0.3dB	0.2dB		0.5dB	1.1dB		0.2dB		
(-60dBV)	0.6dB			0.0dB	1.5dB		0.4dB	0.2dB		0.4dB	1.0dB		0.3dB		
TOTAL HARMONIC DIST. (0dBW)	-94dB			-94dB	-95dB		-98dB	-105dB		-69dB	-69dB		-77dB		
(2/3 POWER)	-89dB			-98dB	-100dB		-97dB	-97dB		-65dB	-65dB		-81dB		
CCIR INTERMODULATION DIST (0dBW)	-100dB			-99dB	-100dB		-100dB	-104dB		-70dB	-96dB		-68dB		
(2/3 POWER)	-98dB			-89dB	-89dB		-90dB	-94dB		-71dB	-93dB		-55dB		
NOISE (AWTD, 0dBW)	-87.3dB			-85.1dB	-97.8dB		-81.7dB	-97.2dB		-83.6dB	-98.3dB		-80.3dB		
(2/3 POWER)	-98.0dB			-79.5dB	-81.2dB		-78.4dB	-80.9dB		-79.5dB	-82.5dB		-92.6dB		
RESIDUAL NOISE (UNWTD)	-76.5dBV			-74.9dBV	-74.6dBV		-75.2dBV	-75.2dBV		-77.8dBV	-77.8dBV		-69.1dBV		
INPUT SENSITIVITY (FOR 0dBW)	26mV			18mV	182mV		23mV	204mV		31mV	258mV		25mV		
(FOR FULL OUTPUT)	188mV			287uV	2.9mV		288uV	2.6mV		397uV	3.25mV		245mV		
LINE/DISC OVERLOAD (1kHz)	>16V				157mV			143mV			106mV		>16V		
(20kHz)	>16V				1503mV			1275mV			877mV		15V		
(50kHz)	>16V				3410mV			2870mV			1750mV		13V		
TAPE OUTPUT/IMPEDANCE	AS SOURCE/AS SOURCE			9.9V (DISC) / 253ΩHM			11.2V (DISC) / 443ΩHM			10.6V (DISC) / 790ΩHM			12.3V / 30ΩHM		
INPUT LOADING	48kΩHM/30pF			42kΩHM/80pF 47kΩHM/120pF			47kΩHM/300pF 47kΩHM/100pF			38kΩHM/700pF 46kΩHM/400pF			14kΩHM/80pF		
DC OFFSET, LEFT/RIGHT	10mV/+11mV			-1mV/-1mV			+1mV/+4mV			-48mV/-12mV			+9mV/+8mV		
SERIAL NUMBER	A000443			4122400936			08800143			40199048			6722		
TYPICAL RETAIL PRICE	£280			£270			£250			£230			£280		

\*SEE LAB REPORT, P. 64

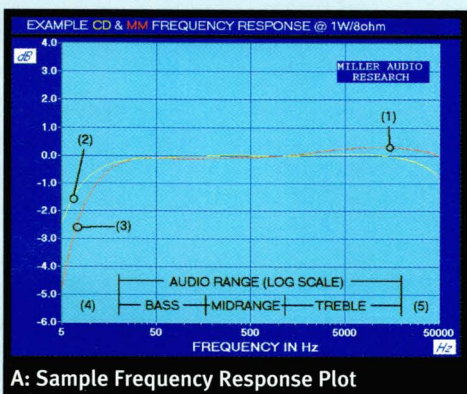


# Making the most of the test results

**M**ost 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 fixed limit of just one per cent distortion. However, more power does not necessarily mean better quality.

Instead, if you want an amp to drive difficult or multiple speaker combinations, then seek out a high-current operator that gets close to doubling its power output between 8 and 4 Ohm loads.

Unfortunately, any amplifier with an appropriately stiff power supply will, perversely, also suffer from limited dynamic headroom. This figure gives us some idea of the maximum short-term power that will be available under dynamic music conditions.



A: Sample Frequency Response Plot

## Understanding the Frequency Response plot A

These plots detail the frequency response of the amplifier, from the deepest sub-bass (4) to beyond the limits of our hearing (5) at 1W into a standard 8 Ohm speaker load. In this example, I have also marked out the 20Hz-20kHz audio range, showing the regions related to bass, mid-range and treble performance.

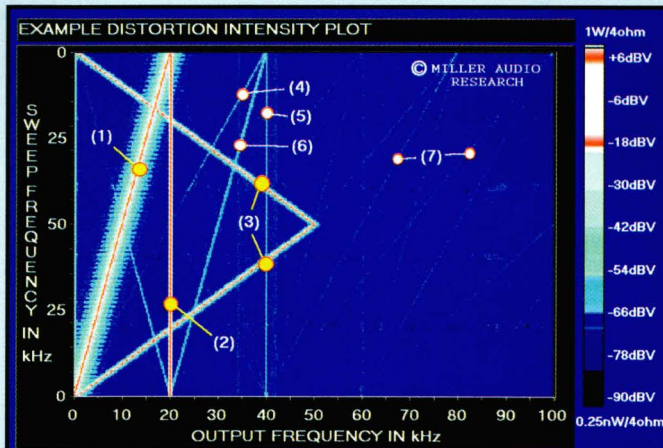
The example shows a slight boost to the extreme treble of its phono response (1 - red trace) while demonstrating the difference in bass roll-off between its phono (3) and CD (2 - yellow trace) inputs.

## Understanding the new Distortion plot B

It would be convenient for us to believe that very low distortion goes hand-in-hand with very high sound quality.

Unfortunately, this is not the case. In practice, the amount of THD (Total Harmonic Distortion) is less important than how its composition varies with the changing power output of the amplifier.

Broadly speaking, as long as the distortion rises and falls in sympathy with the music,



B: Sample Distortion Plot — just take a look at that spurious!

most listeners quickly become accustomed to its presence. Naturally, some types of distortion are more tolerable than others, but by using the new Distortion Intensity plot, we can examine all possible types of distortion in one shot.

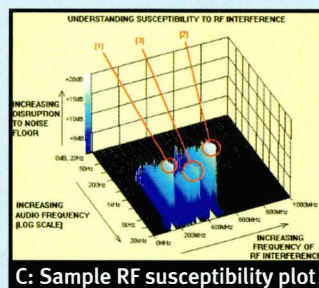
Rather than using a single test tone, this method taxes the amplifier in a more realistic fashion, by inputting a combination of signals. These signals are highlighted in red on all the Intensity plots (sample shown above) and include a sweep from 0 to 20kHz (1), a fixed 20kHz tone (2) and a further sweep (some -24dB lower in level) from 0 to 50kHz to 0Hz (3).

All the amplifiers are raised to a 1W output into a standard 4Ohm load where, as with real music, both harmonic and intermodulation (IM) distortions occur simultaneously. Any pattern which is not highlighted in red is a distortion. And the brightness of the blue colour indicates its intensity (very bright means very intense).

In our example, we can see simple 2nd harmonics of (1) and (2) being indicated by the markers (4) and (5) respectively. Intermodulation, or 'beating' between (1) and (2) is represented by one half of the 'V-pattern' labelled (6), though higher-order IM patterns (7) — which are subjectively more distracting — can also occur.

players and all manner of domestic or external appliances. This is called Radio Frequency (RF) noise and, once inside an amplifier, it 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, gritty or just plain muddled.

The magnitude of this effect shows up as raised areas on the new 3D RF susceptibility plot which, in this example, draws attention to the amplifier's sensitivity to RF noise at 160MHz (1) and 420MHz (2). By looking across to the audio frequency



C: Sample RF susceptibility plot

scale, we can see that the audibility of this effect will be most obvious beyond 5kHz or so — the treble region.

The plot also shows a slightly milder susceptibility at 270MHz and 320MHz (3). Importantly, if the amplifier is exposed to any electrical interference within these ranges, its sound quality could well suffer.

Sadly, no-one can ensure that his or her electrical environment is entirely free of such interference. Fortunately, by referring to these new RF plots, we can determine accurately which amps are most susceptible in the first place.

## Understanding the new 3D RF susceptibility plot C

Busy lattices of distortion are further complicated by electrical noise leaking in from central heating systems, dimmer switches, fluorescent lights, CD

Onkyo A-803			Pro-Ject 7			Sony TA-F444E		
20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz
86W	88W	84W	35W	38W	43W	60W	61W	58W
128W	137W	120W	56W	64W	67W	82W	95W	89W
+1.0dB (110W)			+0.6dB (43W)			+0.6dB (71W)		
14.1A*			11.0A			14.1A		
0.069OHM			0.037OHM			0.142OHM		
116.7			217.4			56.2		
CD/Aux	MM		CD/Aux	MM		CD/Aux	MM	
81dB	57dB		115dB	105dB		69dB	45dB	
76dB	53dB		75dB	85dB		69dB	44dB	
0.4dB	0.8dB		0.4dB	4.5dB		0.3dB	0.5dB	
0.2dB	0.6dB		0.5dB	4.6dB		0.4dB	0.6dB	
-91dB	-83dB		-87dB	-68dB		-101dB	-103dB	
-90dB	-83dB		-85dB	-67dB		-97dB	-98dB	
-88dB	-75dB		-79dB	-77dB		-100dB	-102dB	
-89dB	-76dB		-73dB	-72dB		-75dB	-77dB	
-82.9dB	-95.1dB		-101.3dB	-107.6dB		-82.5dB	-91.0dB	
-81.7dB	-89.7dB		-63.2dB	-63.3dB		-80.4dB	-88.3dB	
-72.1dBV	-72.0dBV		-88.8dBV	-88.7dBV		-71.8dBV	-71.8dBV	
16mV	156mV		54mV	342mV		20mV	156mV	
268uV	2.6mV		111uV	693uV		328uV	2.6mV	
	159mV			8.0mV			149mV	
	1350mV			76mV			1275mV	
	2100mV			182mV			1740mV	
9.6V (DISC) / 3.39KOHM			9.8V (DISC) / 103OHM			9.1V (DISC) / 1.25KOHM		
27KOHM/600PF 42KOHM/300PF			23KOHM/50PF 99OHM			99KOHM/100PF 43KOHM/180PF		
0mV / -6mV			-6mV / -18mV			+25mV / +24mV		
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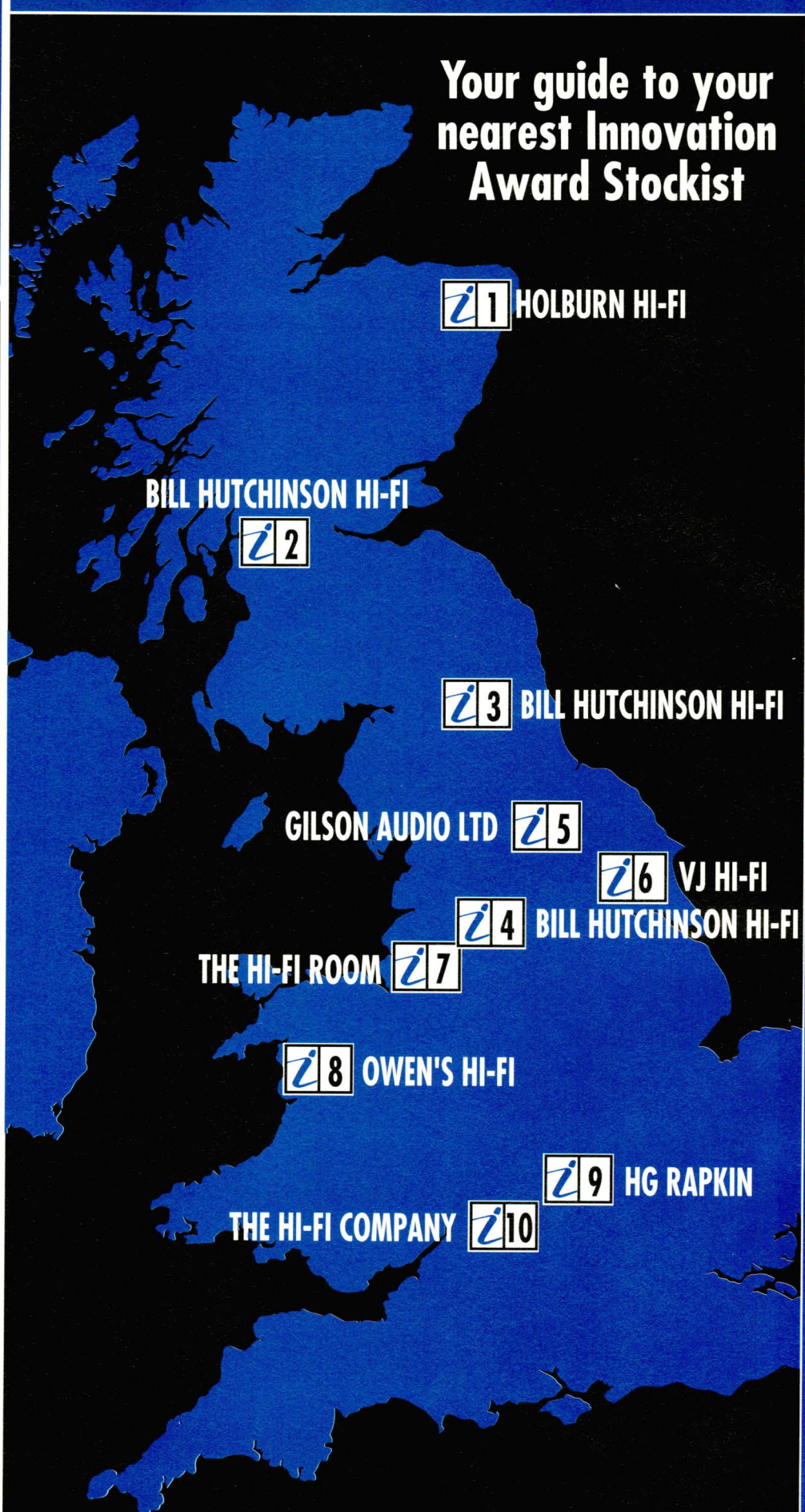
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Highlighted above are retailers who have been selected for their professionalism, customer care, in addition to offering the best possible equipment at a competitive price.



# Your guide to your nearest Innovation Award Stockist

**z11** THE MUSIC STATION

**z12** ROBERT RITCHIE HI-FI

**z13** BILL HUTCHINSON HI-FI

**z14** HUDDERSFIELD HI-FI CENTRE

**z15** A FANTHORPE LTD

**z16** BILL HUTCHINSON HI-FI

**z19** OWEN'S HI-FI

**z17** FORUM HI-FI

**z18** SHROPSHIRE HI-FI

**z20** MIKE MANNING AUDIO

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## Bill Hutchinson's INNOVATION A W A R D

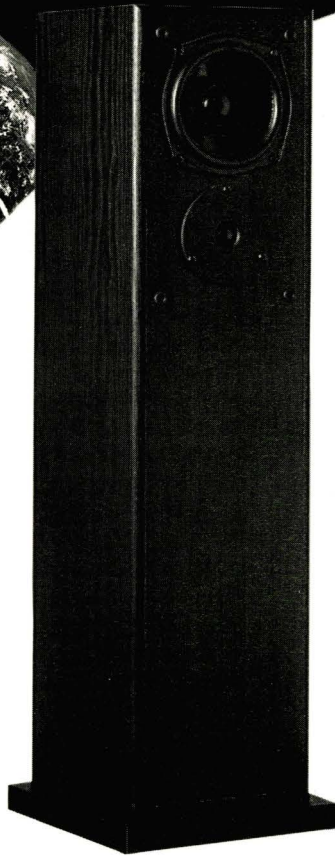
### KEY TO RETAILERS

- 11** THE MUSIC STATION, 49 CHURCH STREET, INVERNESS. TEL: 0146 322 5523  
B D K M M S P S
- 12** ROBERT RITCHIE HI-FI, 102-106 MURRAY ST, MONTROSE, TAYSIDE. TEL: 01674 673 765  
C J K M M S P R S T T Y Y
- 13** BILL HUTCHINSON HI-FI LTD, 43 SOUTH CLERK ST, EDINBURGH. TEL: 0131 667 2877  
A B C D J K K W M M S P R S T T Y Y
- 14** HUDDERSFIELD HI-FI CENTRE, 4 CROSS CHURCH ST, HUDDERSFIELD. TEL: 01484 544 668  
A B D K W M M S P R T Y
- 15** A FANTHORPE LTD, HEPWORTH ARCADE, SILVER STREET, HULL. TEL: 0148-222 3096  
B J M M S S T T Y
- 16** BILL HUTCHINSON HI-FI LTD, 50/52 DEANS GATE, MANCHESTER. TEL: 0161 832 1600  
A B C D J K K W M M S P R S T T Y Y
- 17** FORUM HI-FI, 600-602 MANSFIELD RD, SHERWOOD, NOTTINGHAM. TEL: 01159 622 150  
A B C M M S P T T Y Y
- 18** SHROPSHIRE HI-FI, ST MICHAEL'S STREET, SHREWSBURY. TEL: 01743 232 317  
A B C D J K K W M P R S T Y
- 19** OWEN'S HI-FI, UNIT B2, COLWYN SHOPPING CENTRE, COLWYN BAY, CLWYD. TEL: 01492 530 982  
A C D K W M P S T
- 20** MIKE MANNING AUDIO, 110 MIDDLE ST, YEovil, SOMERSET. TEL: 01935 793 61  
A B D M M S P T Y Y

A AIWA	K KEF	R REVOLVER
B B&W	KW KENWOOD	S SONY
C CANON	M MARANTZ	T TECHNICS
D DENON	MS MISSION	TY TANNOY
J JVC	P PIONEER	Y YAMAHA

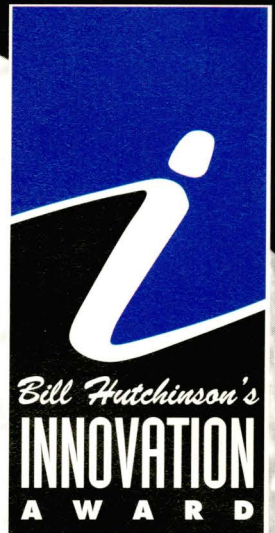


# The Forefront of Technology



Model: Purdey

- Compatible with amplifiers from 30 to 120 watts per channel.
- Mass loadable for enhanced bass reproduction.
- Floor-standing, bi-wirable, two-way, speaker with a cone isolated plinth provided.
- Available in either a black-wood or a rich rose-wood finish.
- "...delivers a remarkably powerful performance, one that's detailed and coherent with a strong sense of timing." - *Hi-Fi Choice*, December 1994.
- "...RAM has a real winner on it's hands with Revolver speakers and (Purdey) model in particular." - *CD Review*, November 1994.



**REVOLVER**  
by  
*Ram*

Considerable time and effort has gone into the creation of the Bill Hutchinson Innovation Award Scheme, drawing from more than two decades of experience and expertise. The Innovation Award is designed to assist you in identifying state of the art equipment that matches your expectations whilst being of build quality that ensures many years of enjoyment. A long-term association with a professional dealer has real benefits and will serve as your personal contact for information and advice on the Manufacturers latest Innovations.

If it is not possible to visit a Bill Hutchinson Hi-Fi AV Centre, simply contact the Manufacturer for details of your nearest authorised stockist.

## Bill Hutchinson

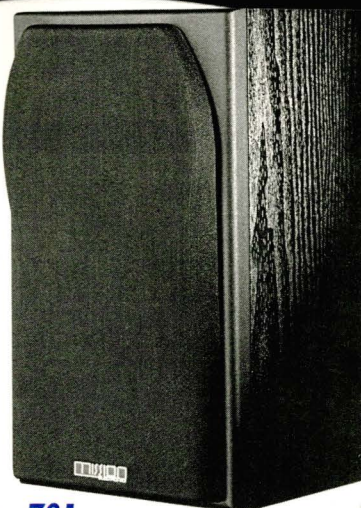
Hi-Fi • CD • Audio Visual Centre

- GLASGOW 43 Hope Street. Tel: **041-248 2857** • EDINBURGH 43 South Clerk Street. Tel: **031-667 2877**
- LEEDS 26-28 Woodhouse Lane. Tel: **0532 427777** • NEWCASTLE 87A Clayton Street. Tel: **091-230 3600**
- MANCHESTER 50/52 Deansgate. Tel: **061-832 1600**





# The Forefront of Technology



Model No: **731**



- Unique enclosure design couples the bass driver to the rear panel rather than the front baffle, thus isolating the energy source of the driver from the baffle. This results in a new order of clarity and freedom from coloration.
- Decoupled tweeter mounting reduces intermodulation of treble by low frequency induced energy.
- Precision moulded front baffle and rear panel in polymer composite provide considerable structural integrity and minimises unwanted colorations.
- Easy drive characteristics.
- Inverted drive unit geometry optimises vertical dispersion characteristics and ensures smooth phase and frequency response around the crossover transition.
- Anti-turbulence port design minimises low frequency "chuff" and aids production of ultra-clean bass output.

**MISSION**

Considerable time and effort has gone into the creation of the Bill Hutchinson Innovation Award Scheme, drawing from more than two decades of experience and expertise. The Innovation Award is designed to assist you in identifying state of the art equipment that matches your expectations whilst being of build quality that ensures many years of enjoyment. A long-term association with a professional dealer has real benefits and will serve as your personal contact for information and advice on the Manufacturers latest Innovations.

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- MANCHESTER 50/52 Deansgate. Tel: **061-832 1600**





PIONEER

BEST PRICES GUARANTEED

KENWOOD

TANNOY

MISSION

PANASONIC

TEAC

AKAI

PHILIPS

DENON

YAMAHA

MARANTZ

JVC

SONY

TECHNICS



ALL BILL HUTCHINSON HI-FI SHOPS ARE DEDICATED AUDIO VISUAL CENTRES

ALL BRANCHES ARE MAJOR LASER DISC STOCKISTS



# Bill Hutchinson

Hi-Fi · CD · Audio Visual Centre

THE PROFESSIONALS

When you purchase from Bill Hutchinson you're buying the best names in Hi-Fi from the best name for Hi-Fi.

Our Product Guarantee and Pricing Policy ensure you obtain an excellent deal.

My staff and I look forward to being of service to you. *Bill*



HEAR KENWOOD'S INNOVATION WINNING AV AMPLIFIER



## 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.

- YAMAHA DSP-2070 - AV AMPLIFIER - INNOVATION WINNER '94
- KENWOOD KRV 6060 - AV RECEIVER - INNOVATION WINNER '94
- PIONEER PDS-703 - CD PLAYER - INNOVATION WINNER '94
- MARANTZ 1020 - LYFE STYLE SYSTEM - INNOVATION WINNER '94
- AIWA AD-450 - CASSETTE DECK - INNOVATION WINNER '94
- KEF 100 - CENTRE SPEAKERS - INNOVATION WINNER '94
- JVC UX-C7 - AV AMPLIFIER - INNOVATION WINNER '94

LICENSED CREDIT BROKERS ASK FOR DETAILS

## THE LARGEST SELECTION OF QUALITY HI-FI AND AUDIO VISUAL SYSTEMS

**LEEDS**

26-28 WOODHOUSE LANE  
0532-427777

**MANCHESTER**

50-52 DEANSGATE  
061-832 1600

**NEWCASTLE**

87A CLAYTON STREET  
091-230 3600

**GLASGOW**

43 HOPE STREET  
041-248 2857

**EDINBURGH**

43 SOUTH CLERK STREET  
031-667 2877

**OPEN 7 DAYS**

OPEN MONDAY - SATURDAY 9.30AM - 6.00PM THURSDAY LATE OPENING

OPEN MONDAY - SATURDAY 9.30AM - 6.00PM THURSDAY LATE OPENING

OPEN MONDAY - SATURDAY 9.30AM - 5.30PM THURSDAY LATE OPENING

OPEN MONDAY - SATURDAY 9.30AM - 6.00PM THURSDAY LATE OPENING

MON - SAT 9.30AM - 6.00PM SUNDAY 11.00AM - 5.00PM THURSDAY LATE OPENING

ROTEL

ALL WITH 2 YEAR GUARANTEE

AIWA

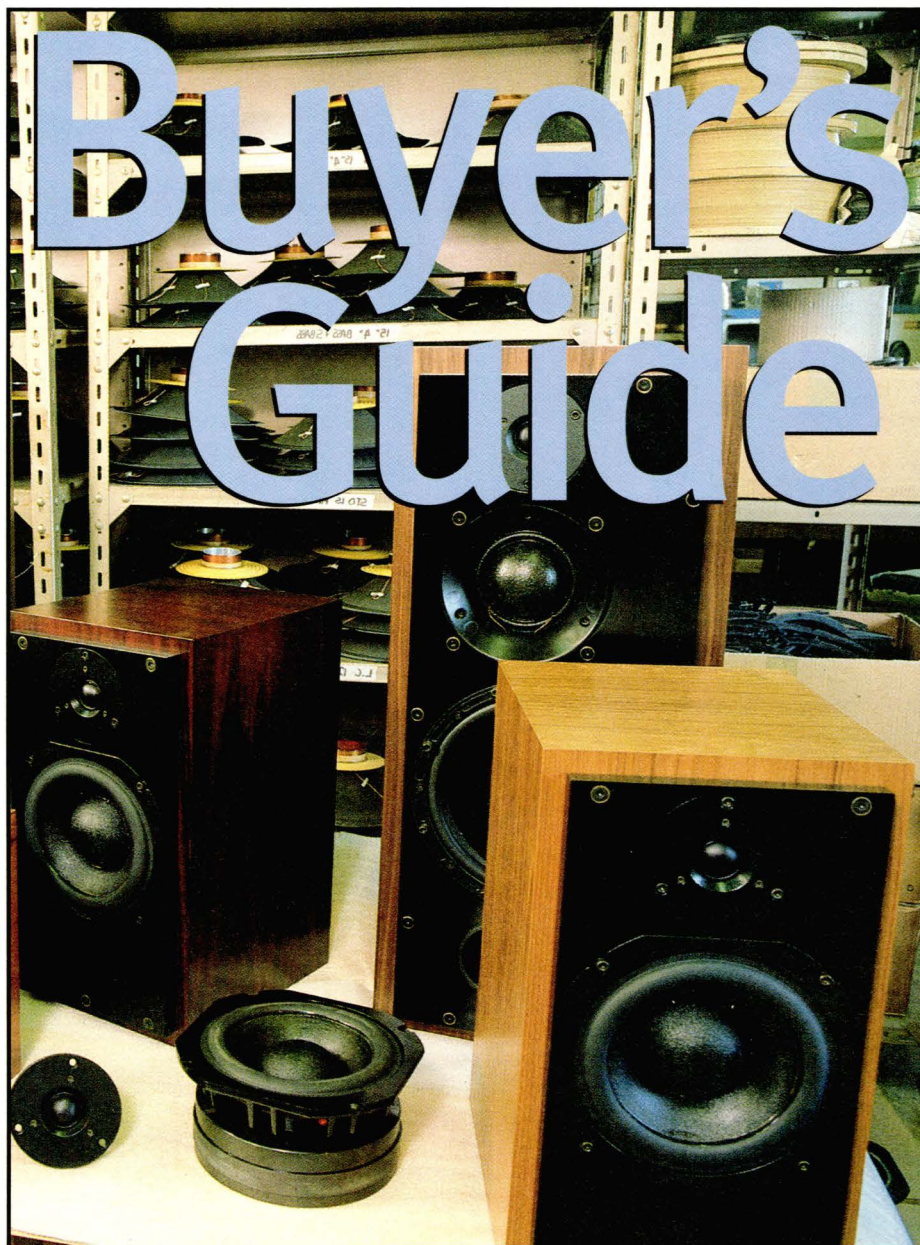


The most comprehensive hi-fi listing in the known universe

# HI-FI CHOICE

WE CHOOSE THE BEST HI-FI FOR YOU

Welcome to the *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. Part two comprises the unique review-based *Directory*, giving our views on over 700 components that have been tested and rated by the *Hi-Fi Choice* experts.



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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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TURNTABLES, ARMS AND CARTRIDGES PAGE 115

THE DIRECTORY PAGE 127

THE ORIGINAL, THE MOST AUTHORITATIVE, THE BEST. OUR UNIQUE REVIEW-BASED GUIDE TO OVER 700 PRODUCTS TESTED IN *HI-FI CHOICE*. BEWARE CHEAP IMITATIONS...



# THE Hi-Fi ROOM

MANCHESTER



**THE OASIS OF SOUND  
FOR HI-FI AND AV**

M A N C H E S T E R  
**50 BRIDGE STREET 061-832 0888**





Key to amplifiers  
Price - typical retail, to nearest pound.  
Power - output power in watts, per channel, RMS.  
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.  
A/V - includes Dolby Surround or Pro Logic decoder and amplification.

Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier.  
Headphone - Y - yes, N - no.  
Remote - Y - yes, N - no.  
Size - width x height x depth in cm.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



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Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Adyton PSU	569	-	N	-	-	-	-	-	PSU for Adyton preamps
Adyton CHORUS	1295	Pre	N	-	MC	N	N	44,3,25	RIAA phono stage
Adyton TEMPER	1795	Pre	N	-	MC,2L	N	N	44,3,25	Phono & line source preamp
Adyton MODUS	2095	Pre	N	-	4L,2T	N	N	44,5,25	Line control amp
Adyton OPERA	2395	Int	N	50	MM/MC,3L,2T	N	N	21,33,13	Optional phono
Adyton CORDIS 1.6	3399	Pwr	N	120	-	N	N	45,9,35	Stereo power amp
Adyton CORDIS 3B	11950	Pwr	N	290	-	-	-	49,39,43	Reference 2x dual mono
Aiwa XA-003	140	Int	N	40	MM,2L,1T	Y	N	-	2 speaker circuits
Aiwa XA-950	230	Int	N	100	MM/MC,2L,2T	Y	Y	-	2 speaker circuits
Alchemist Kraken/pre Anniv	0	Pre	N	-	MM,3L,2T	N	N	25,9,25	Stainless steel/gold finish
Alchemist Kraken/Pwr Anniv	0	Pwr	-	60	-	N	N	32,9,25	Stainless steel/gold finish
Alchemist Kraken/Pre	380	Pwr	-	60	-	-	-	32,9,25	Bridgable
Alchemist Kraken/mono	380	Pwr	N	60	-	N	N	32,9,25	-
Alchemist Kraken	395	Pre	N	-	5L,1T	N	N	25,9,25	Bridging circuit built-in
Alchemist Kraken/Pwr	399	Int	N	60	3L,2T	N	N	32,9,25	MM £45 option
Alchemist Kraken Anniv	499	Int	N	60	MM,3L,2T	N	N	25,9,25	Stainless steel/gold finish
Alchemist Forseti	899	Int	N	100	4L,2T	N	N	47,10,39	-
Alchemist Freya	1020	Pre	N	-	6L,1T	N	N	31,7,30	-
Alchemist Odin	1020	Pwr	-	80	-	-	-	31,14,30	Stereo
Alchemist Genesis	1525	Pwr	-	110	-	-	-	25,14,30	Pair monoblocks
AMC AV81 Control	289	Pre	Y	-	8L,2T	N	Y	-	-
AMC 2445	299	Pwr	-	45	-	-	-	-	4 channels
AMC 1030	379	Pre	N	-	MM	N	N	-	-
AMC 2030	449	Pwr	-	30	-	-	-	-	-
AMC S84	479	Pre	Y	-	8L	N	Y	-	Multiroom, bal/unbal inputs
AMC AV81 H.T. Control	499	Pre	Y	-	8L,2T	N	N	-	As AV81 plus Dolby Pro Logic
AMC CVT3030	529	Int	N	30	6L,1T	Y	N	-	Tube amp
Analogue Saturn	75	Pre	N	-	MM	N	N	-	-
Analogue Saturn MC	75	Pre	N	-	MC	N	N	-	-
Analogue Jupiter	330	Int	N	30	MM,4L,1T	N	N	-	-
Arcam Alpha 5	230	Int	N	40	MM,3L,2T	Y	N	43,8,30	Bypassable tone controls
Arcam Delta 110S	330	Int	N	50	MM,3L,2T	Y	Y	43,8,30	Remote volume facility
Arcam Delta 290P	400	Pwr	N	75	-	Y	N	43,9,30	-
Arcam Delta 290	480	Int	N	75	4L,2T	Y	Y	43,9,32	Opt MM/MC phono module
Arcam Delta 110S	520	Pre	N	-	MM/MC,3L,2T	Y	Y	43,7,30	As Delta 110, w/o DAC
Arcam Delta 120.2	550	Pwr	N	100	-	Y	Y	43,9,30	Bridgable
Arcam Delta 110	750	Pre	N	-	MM/MC,2L,2T	Y	Y	43,7,30	On-board DAC, 2 inputs
Arion EOS	899	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra	999	Int	N	18	4L,1T	N	N	-	Class A valve
Arion Eros Line	1050	Pre	N	-	4L,1T	N	N	-	Dual mono construction
Arion EOS Export	1099	Pre	N	18	-	-	-	-	With volume control
Arion Elektra Export	1199	Int	N	18	4L,1T	N	N	-	Class A valve amp
Arion Triton	1250	Pwr	-	10	-	-	-	-	Triode, volume control
Arion Eros Phono	1250	Pre	N	-	3L,1T	N	N	-	Dual mono construction
Arion Talos Line	1350	Int	N	10	4L,1T	N	N	-	Triode Class A valve amp
Arion Talos Phono	1550	Int	N	10	MM,3L,1T	N	N	-	Triode Class A phono amp
Arion Tycho Pwr	1650	Pwr	N	50	-	-	-	-	Pure Class A
Arion Tycho Int	1850	Int	N	50	4L,1T	N	N	-	Pure Class A integrated
Art Audio Conductor H'phone400	0	-	N	-	-	Y	N	-	Single ended triode Class A
Art Audio VPA	750	Pre	N	-	MM/MC	N	N	-	-
Art Audio VPL	816	Pre	N	-	6L,2T	N	N	-	-
Art Audio VP1	952	Pre	N	-	MM,5L,2T	N	N	-	-
Art Audio Conductor	1000	Pre	N	-	6L,2T	-	N	-	Twin valve PSU
Art Audio Quintet	1393	Pwr	-	15	-	-	-	-	Class A triode/pentode
Art Audio Conductor Phono	1500	Pre	N	-	MM/MC	N	N	-	Separate PSU, upgradable
Art Audio Conductor Export	1500	Pre	N	-	6L,2T	Y	Y	-	Separate PSU, upgradable
Art Audio Concerto	1669	Pwr	N	50	-	-	-	-	2x mono triode/pentode
Art Audio Tempo	2398	Pwr	-	30	-	-	-	-	2x mono Class A triode
Art Audio Maestro	3524	Pwr	N	100	-	-	-	-	2x mono triode/pentode
Art Audio Integra	11644	Int	N	30	5L,2T	N	N	-	Class A Pentode
Audio Innovation L1	299	Pre	N	-	3L,1T	N	N	25,10,30	-
Audio Innovation Alto	329	Int	N	35	4L,2T	N	N	43,8,30	-
Audio Innovation Ser 200	349	Pre	N	-	MM,3L,T	N	N	50,12,30	-
Audio Innovation T2	399	Pre	N	-	MC	N	N	12,16,8	Phono stepup
Audio Innovation Ser 200	499	Pwr	N	12	-	-	-	50,12,30	-
Audio Innovation Ser 300	499	Int	N	10	MM,3L,1T	N	N	50,12,30	-
Audio Innovation P2	679	Pre	N	-	MM	N	N	50,12,30	Phono stage
Audio Innovation L2	699	Pre	N	-	4L,1T	N	N	50,12,30	-
Audio Innovation Ser 800	849	Pwr	N	25	-	N	N	41,15,34	-
Audio I Classic 25	899	Int	N	25	4L,1T	N	N	46,15,34	Kit amplifier
Audio Innovation P2MC	899	Pre	N	-	MM/MC	N	N	50,12,30	Phono stage
Audio Innovation Ser 500	999	Int	N	25	MM,3L,2T	N	N	41,15,34	-
Audio Innovation Ser 700	999	Int	N	25	4L,1T	N	N	41,15,34	-
Audio Innovation 1000	1499	Pwr	N	50	-	N	N	41,15,34	Monoblocks
Audio I First Audio	1549	Pwr	N	7.5	-	N	N	41,15,34	-
Audio Innovation 1000SE	2249	Pwr	N	50	-	N	N	41,15,34	Silver circuit board
Audio I 2nd Audio	2999	Pwr	N	15	-	N	N	41,15,34	Monoblocks
Audio Note Ongaku	22411	Int	N	26	6L	N	N	-	Single-ended Class A tube
Audio Note Oto	1250	Int	N	24	MM/MC,4L,1T	N	N	-	-
Audio Research LS-3	1599	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research PH-1	1649	Pre	N	-	MM/MC	N	N	48,14,26	Phono preamp
Audio Research LS-3b	2250	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research V160	2430	Pwr	N	35	-	N	N	-	Single end tube mono
Audio Research LS-2	2796	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input/hybrid
Audio Research D-200	2800	Pwr	N	110	-	-	-	48,14,31	Single ended, balanced
Audio Research SP9 II	2850	Pre	N	-	MM/MC,4L,2T	N	N	48,14,26	Hybrid
Audio Research PH-2	2895	Pre	N	-	MM/MC	N	N	48,14,26	Balanced
Audio Research LS-2b	3355	Pre	N	-	5L,1T	N	N	48,14,26	1 balanced direct input/hybrid

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Audio Research V35	3355	Pwr	N	30	-	-	-	48,18,37	Balanced in, hybrid
Audio Research V70	4480	Pwr	N	60	-	-	-	48,18,40	Balanced in, hybrid
Audio Research D-300	4800	Pwr	N	160	-	-	-	48,18,33	Single ended, balanced
Audio Research LS-5	5290	Pre	N	-	5L,1T	N	N	48,14,30	Full balanced in/out
Audio Research VT130	5600	Pwr	N	65	-	N	N	-	Stereo tube, balanced
Audio Research D-400II	6200	Pwr	N	200	-	-	-	48,23,33	Single ended, balanced
Audio Research V140	8960	Pwr	N	120	-	-	-	48,22,30	Monoblocks, hybrid
Audio Research VT150	14900	Pwr	N	130	-	-	-	37,31,56	Monoblocks, tube
Audiolab 8000A	500	Int	N	60	MM,MC,1T,3T	Y	N	45,8,36	Preout/main in
Audiolab 8000C	520	Pre	N	-	MM/MC,1T,3T	Y	N	45,8,36	2 pairs of outputs
Audiolab 8000P	700	Pwr	-	100	-	-	-	45,8,36	Bi-wire speaker terminals
Audiolab 8000M	750	Pwr	-	125	-	-	-	45,8,36	Single monoblock
Audiolab 8000PPA	850	Pre	N	-	MM/MC	-	-	45,8,36	Phono preamplifier
Audiolab 8000Q	1000	Pre	N	-	3L,2T	Y	Y	45,8,36	'Pure Direct' signal path
Audiolink 8000M	350	Int	N	60	MM/MC	N	N	43,7,270	Available in chrome
Audiolink Sterling II	467	Pre	N	-	4L	N	N	43,7,270	Available in chrome
Audiolink P400	467	Pre	N	-	4L	N	N	43,7,270	Available in chrome
Audiolink PR401	583	Pwr	N	100	-	N	N	43,10,37	Available in chrome
Aura VA80	280	Int	N	45	5L,1T	Y	N	43,6,31	Chrome finish, £50 extra
Aura VA100 II	330	Int	N	70	MM,4L,1T	Y	N	43,6,31	Chrome finish add £50
AVI S2000MA	599	Pwr	-	90	-	-	-	-	-
AVI S2000MP	749	Pre	N	-	5L,1T	N	-	31,25,9	includes S2000RC handset
AVI S2000MI	799	Int	N	100	4L, 1T	-	Y	31,25,9	Includes S2000RC handset
AVI S2000MM	1099	Pwr	-	150	-	-	-	-	2x monoblocks
Bryston 4	641	Pre	Y	-	4L,1T	N	N	48,5,25	-
Bryston BP1	673	Pre	Y	-	MM or MC	N	N	48,5,25	Phono stepup, bal & unbal
Bryston 2B-LP	750	Pwr	Y	75	-	N	N	48,5,25	Bridgable
Bryston BP4	802	Pre	Y	-	4L,1T	N	N	48,5,25	Balanced out
Bryston BP5	889	Pre	Y	-	MM/MC,3L,1T	N	N	48,5,25	MM or MC, balanced out
Bryston BP20	1126	Pre	Y	-	8L,1T	N	N	48,5,25	Balanced in/out
Bryston 3B-NRB	1159	Pwr	Y	150	-	N	N	48,13,23	Bridgable, bal & unbalanced
Bryston THX3B	1262	Pwr	Y	150	-	N	N	48,13,23	2 channels, THX approved
Bryston 4B-NRB	1756	Pwr	Y	300	-	N	N	48,13,39	Bridgable, bal & unbalanced
Bryston 7B-NRB	1815	Pwr	Y	500	-	N	N	48,13,39	Single monoblock
Bryston THX4B	1858	Pwr	Y	300	-	N	N	48,13,39	2 channels, THX approved
Bryston THX7B	1917	Pwr	Y	500	-	N	N	48,13,39	1 channel, THX approved
Bryston 8B-NRB	2195	Pwr	Y	150	-	N	N	48,13,39	4 channels, bridgeable
Bryston THX8B	2400	Pwr	Y	150	-	N	N	48,13,39	4 channels, THX approved
C.R. De Kalypos	499	Int	N	15					





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Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Counterpoint SA4	3575	Pwr	-	140	-	-	-	-	Hybrid
Counterpoint SA-5000E	3595	Pre	N	-	MM/MC,4L,2T	N	N	49,12,27	Separate PSU
Counterpoint NPS-400E	3995	Pwr	-	400	-	N	N	-	Rated at 4 ohms, hybrid
Counterpoint SA-9	3995	Pre	N	-	MM/MC	N	N	49,12,37	Phono stepup
C'point Nat Progress	4125	Pwr	-	150	-	-	-	-	Mono, hybrid
Counterpoint NPM-E	7595	Pwr	-	150	-	-	-	49,18,49	Twin monoblocks
Credo PMP003	385	Pre	N	-	-	N	N	22,6,24	Phono amp MM/MC, & PSU
Credo HMP003	388	Pre	N	-	-	Y	N	-	Class A headphone amp
Credo MMP002	439	Pre	N	-	-	N	N	-	Mic amp, phantom power
Credo IMP702	499	Int	N	70	6L	-	N	44,6,31	-
Credo IMP703	538	Int	N	70	MM/MC, 6L	-	Y	44,6,31	As above, with remote
Credo CMP004	799	Pre	N	-	6L	N	N	44,6,31	3 outputs
Credo CMP005	1119	Pre	N	-	6L	N	Y	-	Remote controlled pre
Credo PMP154	1699	Pwr	N	150	-	-	-	44,16,31	-
Credo PMP303	1699	Pwr	N	30	-	-	N	-	Class A power amp
Credo PMP102	2181	Pwr	N	100	-	-	N	44,21,31	Class A power amp
Credo PMP252	2509	Pwr	N	250	-	-	N	44,21,31	-
Creek P42	250	Pre	-	-	4L,2T	Y	-	42,6,20	Plug-in modules available
Creek A42	250	Pwr	-	50	-	-	-	42,6,20	-
Creek 4240	250	Int	N	40	3L,1T	Y	N	42,6,20	Optional phono input
Crimson 620	395	Pwr	N	40	-	-	-	-	-
Crimson CS610	395	Pre	N	-	MM/MC,2L,1T	N	N	9,10,35	-
Crimson CS620	395	Pwr	N	40	-	-	-	9,10,35	-
Dawn Audio Cmd 2 by 20	890	Pwr	-	200	-	-	N	38,11,26	Single monoblock
Dawn Audio Prelude +50	951	Pre	N	-	MM/MC,2L,2T	N	N	38,9,26	Pre out line driver
Denon PMA-250 III	160	Int	N	30	MM,3L,1T	Y	N	44,10,28	UK design
Denon PMA-350 II	220	Int	N	50	MM,3L,2T	Y	N	44,12,28	UK design
Denon PMA-480R	220	Int	N	50	MM,3L,2T	Y	Y	44,12,29	-
Denon PMA-450SE	270	Int	N	60	MM,3L,2T	Y	Y	44,14,36	UK design
Denon PMA-880R	300	Int	N	75	MM,3L,2T	Y	Y	44,16,40	-
Denon AVC-1530	480	Int	Y	70	MM,2L,2T	Y	Y	44,14,34	-
Denon AVC-3530	1000	Int	Y	110	MM,4L,4T	Y	Y	44,16,43	Learning remote
DNM 3 Start	850	Pre	N	-	MM/MC,2L,1T	N	N	27,13,16	-
DNM 3A Start	1200	Pre	N	-	MM/MC,2L,1T	N	N	27,13,16	-
DNM PA1	1450	Pwr	N	45	-	-	-	27,13,18	Triwire output
DNM 3B Primus E	2050	Pre	N	-	MM/MC,4L,1T	N	N	27,13,16	-
DNM 3B Twin E	3050	Pre	N	-	MM/MC,4L,1T	N	N	27,13,16	-
DNM PA2BE	3650	Pwr	N	90	-	-	-	27,13,18	Triwire output
DNM 3B Six E	4050	Pre	N	-	MM/MC,4L,1T	N	N	27,13,16	-
DNM PA2BS	4450	Pwr	N	90	-	-	-	27,13,18	Triwire output
DNM PA2BS-1	4800	Pwr	N	90	-	-	-	27,13,18	Triwire output
DPA DSP200S	495	Pre	N	-	5L,1T	N	N	22,30,8	-
DPA Renaissance	595	Int	N	40	MM,4L,1T	Y	N	40,28,8	'Compound Class A' o/p
DPA DPA200S	750	Pwr	-	60	-	-	-	22,30,8	Bridgable
Dynavector P100	1495	PRE	N	-	MM,MC	-	-	44,6,22	Phono stepup
Dynavector L100	1995	PRE	N	-	3L,2T	N	N	44,6,24	-
Dynavector HX1.2	3995	PWR	N	130	-	-	-	44,13,37	High current capability
EAR 834P	399	PRE	N	-	MM/MC	N	N	40,40,15	Valve phono stepup
EAR 834L	449	PRE	N	-	5L,1T	N	N	-	Valve, line-only
EAR 859	1595	INT	N	13	6L	N	N	40,40,15	Single ended valve
EAR 834	1599	INT	N	50	6L	N	N	40,40,15	Valve
EAR 802MC	2599	Pre	N	-	MM/MC,2L,2T	N	N	-	Valve
EAR 509 Mk II	3499	PWR	N	100	-	N	N	36,20,25	Valve monoblock x1
EAR 519	4699	PWR	N	100	-	-	-	43,14,20	Valve monoblock x1
EAR 549	6999	PWR	N	200	-	-	-	43,27,22	Valve monoblock x1
EAR G88	6999	Pre	N	-	MM/MC,3L,2T	N	N	-	Valve
EAR P52	15999	PRE	N	-	MM/MC,4L,2T	N	N	-	Valve
EAR Yoshino P52	15999	Pre	N	-	MM/MC,4L,2T	N	N	-	Valve
ECA Vista	760	Pre	-	-	4L,1T	N	N	39,10,39	Phase coherent design
ECA Prisma	760	Pre	-	-	MM,MC	-	-	39,10,23	Phono stepup
ECA Lectern S	880	Pwr	-	50	-	-	-	39,10,30	Phase coherent design
Electrocompaniet ECP-1	535	Pre	N	-	MM/MC	N	N	24,7,16	Adjusts to match cartridge
Electro ECP-1 SF	699	Pre	N	-	MM/MC	N	N	24,7,16	auto-adjusts, blue stone facia
Electro EC-4 Line	1315	Pre	N	-	5L,2T	N	N	48,9,23	inc XLR balanced in/out
Electrocompaniet EC-3MM	1485	Pre	N	-	MM,4L,2T	N	N	48,9,23	Balanced XLR in/out
Electro EC-4 Line SF	1565	Pre	N	-	5L,2T	N	N	48,9,23	XLR in/out, blue stone facia
Electrocompaniet EC-3MC	1810	Pre	N	-	MC,4L,2T	N	N	48,9,23	XLR in/out, adj MC input
Electro EC-3MM SF	1995	Pre	N	-	MM,4L,2T	N	N	48,9,23	XLR in/out, blue stone facia
Electro AW1000MB	2030	Pwr	N	100	-	-	-	48,13,36	High current (80A)
Electro EC-3MC SF	2075	Pre	N	-	MC,4L,2T	N	N	48,9,23	XLR in/out, blue stone facia
Electrocompaniet EC1-1	2100	Int	N	100	5L,2T	N	N	45,13,36	High current (80A)
Electro AW1000MB-SF	2175	Pwr	N	100	-	-	-	48,13,36	High current, blue stone facia
Electro EC1-1 SF	2350	Int	N	100	5L,2T	N	N	45,13,36	High current, blue stone facia
Electro AW2500MB	3620	Pwr	N	250	-	-	-	48,22,45	High current (100A)
Electro AW2500MB-SF	3980	Pwr	N	250	-	-	-	48,45,22	High current, price per pair
Electrocompaniet AW180MB200	4200	Pwr	N	180	-	-	-	28,29,48	High current, price per pair
Electro AW180MB-SF	4430	Pwr	N	180	-	-	-	28,29,48	High current, price per pair
EMF Audio Sequel	349	Int	N	50	MM,4L,1T	Y	N	43,65,28	-
Exposure XX Super	699	Int	N	55	4L,2T	N	N	43,85,35	Upgraded model
Exposure XiX	799	Pre	N	-	5L	N	N	43,85,35	Line only version of XVII
Exposure XV Super	799	Int	N	55	MM,MC,3L,2T	N	N	43,85,35	-
Exposure XVII	849	Pre	N	-	MM,MC,3L,2T	N	N	43,85,35	MM/MC optional
Exposure XVII Super	849	Pwr	N	70	-	-	-	43,85,35	Upgraded model
Exposure XIV	1400	Pre	N	-	MM,MC,3L,2T	N	N	48,8,30	Needs 9 power supply
Exposure XVIII (pr)	1599	Pwr	N	65	-	-	-	43,85,35	Upgraded 2x monoblocks
Exposure IV	2199	Pwr	N	80	-	-	-	48,13,35	Fully regulated
Fullers Pre 1	599	Pre	N	-	MM/5L,2T	N	N	48,9,30	Optional MC stage
Fullers Pre 1+	649	Pre	N	-	6L,2T	N	N	48,9,30	No phono option - hard wired



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Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier.  
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Fullers A10	1200	Pwr	-	10	-	-	-	48,13,30	Single ended Class A
Gamma Phonestage	599	Pre	N	-	-	N	N	14,14,30	Add on for Gamma preamps
Gamma Acoustics ERA	1999	Pre	N	-	-	-	N	44,17,30	-
Gamma Space Reference	3499	Int	N	18	-	-	-	43,22,31	Line integrated
Gamma Acoustics Spage	3499	Pwr	N	18	-	-	-	43,22,31	-
Gamma Era Reference	3499	Pre	N	-	-	-	-	44,17,30	-
Gamma Acoustics Rhythm	4999	Pwr	N	25	-	-	-	38,30,53	Single ended Class A
Gamma Acoustics Aeon	6999	Pwr	N	30	-	-	-	29,21,53	Single ended Class A, mono
Gamma Aeon Signature	8999	Pwr	N	30	-	-	-	29,21,53	Single ended Class A, mono
Gamma Space Signature	19999	Pwr	N	18	-	-	-	44,21,53	Single ended Class A, mono
Gamma Era Signature	20000	Pre	N	-	-	-	-	44,24,39	-
Grant CD10	482	Pre	N	-	4L	N	N	-	-
Grant G100P	764	Pre	N	-	MM,2L,1T	N	N	-	-
Grant G50A	1128	Pwr	-	60	-	-	-	-	Monoblocks
Grant G100AMS	1528	Pwr	-	100	-	-	-	-	-
Grant G350A	3455	Pwr	-	350	-	-	-	-	-
Grant G200AMS	3760	Pwr	-	200	-	-	-	-	Monoblocks
Grundig V210	130	Int	N	50	MM,5L,1T	Y	Y	36,12,30	Pre-main split
Grundig V10	150	Int	N	50	MM,5L,1T	Y	Y	43,14,30	Tone defeat
Grundig V310	170	Int	N	70	MM,5L,1T	Y	Y	36,12,30	Pre-main split
Grundig V2	200	Int	N	80	MM,5L,1T	Y	Y	43,14,30	Tone defeat
Grundig V3	250	Int	N	120	MM,5L,1T	Y	Y	43,14,30	Pre-main split
GT Audio Pre	1500	Pre	N	-	MM,3L,1T	N	N	-	Regulated HT/LT PSU
GT Audio Pwr	2000	Pwr	N	30	-	-	-	-	Triode switchable (15w)
Harman-Kardon PA2100	349	Pwr	-	45	-	-	-	45,11,37	-
Harman-Kardon HK1400	399	Int	N	40	MM/MC,3L,2T	N	N	45,11,37	-
Harman-Kardon AP2500	499	Pre	N	-	MM/MC,6L,2T	N	N	45,11,35	-
Harman-Kardon PA2200	579	Pwr	-	70	-	-	-	45,14,38	-
Harman-Kardon PA2400	899	Pwr	-	120	-	-	-	45,16,41	-
Heybrook Integra	555	Int	N	75	MM/MC	Y	N	77,40,30	-
Heybrook SIG C/P	649	Pre	N	-	MM/MC5L,2T	N	N	-	-
Heybrook SIG MNEX	698	Pwr	-	140	-	-	-	-	Mono, ext SIG/DCPS PSU
Heybrook SIG CAP	829	Pre	N	-	6L,2T	N	N	-	Line only
Heybrook SIG /SP	922	Pwr	-	140	-	-	-	-	Stereo power amp
Inca Tech Oberon Pre	350	Pre	N	-	MM/MC,6L,2T	N	N	43,8,22	CD direct & Two outputs
Inca Tech Oberon Pwr	400	Pwr	-	70	-	Y	N	43,8,22	Two inputs
Inca Tech Oberon	450	Int	N	-					





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<b>AMPLIFIERS</b>									
LFD PA1 Powerstage	999	Pwr	N	60	-	N	N	48,7,33	MOSFETs, custom parts
LFD PPS	999	Pre	N	-	2L,1T	N	N	13,6,27	Switched attenuator, passive
LFD Integrated 1	1099	Int	N	65	MM/MC,4L,1T	N	N	48,7,37	More powerful Int Zero
LFD PhonoStage MC2	1499	Pre	N	-	MC	N	N	30,7,36	Hand tuned MC1
LFD Linestage LS2	1599	Pre	N	-	4L,1T	N	N	48,7,37	Hand tuned LS1
LFD Powerstage PA2	1599	Pwr	N	75	-	N	N	48,7,33	Hand tuned PA1
LFD Linestage LS2P	1750	Pre	N	-	MM/MC,4L,1T	N	N	48,7,37	As LS2 with phono stage
LFD Linestage LSB	1999	Pre	N	-	4L,1T	N	N	48,7,37	Balanced LS2
LFD Powerstage PA2M	1999	Pwr	N	90	-	N	N	30,7,37	Mono PA2
LFD Disc Preamp	4499	Pre	N	-	MC	N	N	30,5,36	Battery powered
Linn Majik-1 (Line)	524	Int	N	33	4L,2T	Y	N	32,8,33	Battery as pre/int multi room
Linn LK100	549	Pwr	N	50	-	-	-	32,8,33	Stereo
Linn Majik-1 (Phono)	593	Int	N	33	MM,MC,3L,2T	Y	N	32,8,33	As line Majik
Linn Kairn Pro	998	Pre	N	-	4L, 2T	N	N	32,8,33	Multi-room compatible
Linn Kairn Preamp	1398	Pre	N	-	MM, MC, 3L,2T	N	N	32,8,32	Multi-room compatible
Linn Klout	1895	Pwr	N	80	-	-	-	32,8,33	Stereo, tri-wire connectors
Lumley Reference PP70	325	Pre	N	-	6L,1T	-	N	36,46,6	Passive, bolts to ST70
Lumley Reference PP40	325	Pre	N	-	6L,1T	-	N	29,40,6	Bolts to ST40
Lumley Reference PP1	325	Pre	N	-	6L,1T	-	N	29,44,6	Passive, stand alone
Lumley Reference LV1	1000	Pre	N	-	6L,1T	-	N	29,44,6	Active valve circuit
Lumley Reference ST40	1250	Pwr	N	40	30,40,17	N	N	-	Pentode
Lumley Reference PV1	1500	Pre	N	-	MM,5L,1T	N	N	-	Phono version of LV1
Lumley Reference ST70	1950	Pwr	N	70	-	-	N	36,46,18	Switchable triode/pentode
Lumley Reference M120	3200	Pwr	N	120	-	-	N	29,44,18	2xmono, triode/pentode
Lumley Reference M500	12000	Pwr	N	-	-	-	N	35,80,30	2xmono, triode/pentode
Luxman A-312	200	INT	N	40	MM,4L,2T	Y	N	13,44,36	CD direct, A/B speakers
Luxman A-331	250	INT	N	60	MM,4L,2T	Y	N	13,44,36	Inc CD direct
Luxman A-353R	350	INT	N	60	MM/MC,4L,2T	Y	Y	13,44,37	Motorised vol control
Luxman A-373	450	INT	Y	80	MM/MC,4L,2T	Y	Y	13,44,37	Also has AV inputs
Lynwood Opal	685	Int	N	80	7L,1T	N	N	-	-
Lynwood Ruby	985	Pwr	N	120	-	-	-	-	-
Magnum IA120	249	int	N	50	MM,5L,2T	Y	N	-	-
Magnum Quartet	329	int	N	36	MM,3L,2T	Y	N	-	-
Magnum MF125	515	Pwr	N	140	-	-	-	-	Monoblocks
Magnum MF300	595	Pwr	N	180	-	-	-	-	Monoblocks
Magnum Class A	599	int	N	60	MM/MC,3L,1T	N	N	-	-
Magnum MA500	1295	Pwr	N	280	-	-	-	-	Monoblocks
Marantz PM-44SE	180	int	N	45	MM,3L,2T	Y	N	42,14,28	Audiophile components
Marantz PM44SEII	200	int	N	45	MM,3L,2T	Y	N	42,14,28	-
Marantz PM-43	200	int	N	55	MM,3L,2T	Y	N	42,14,30	-
Marantz MA-500	250	Pwr	N	125	-	-	-	9,15,45	D-bus, monoblocks, bridgable
Marantz PM-53	250	int	N	65	MM,3L,2T	Y	Y	42,14,30	-
Marantz PM-63	300	int	N	70	MM,3L,2T	Y	Y	42,14,30	-
Marantz PM-54SE	329	int	N	65	MM/MC,3L,2T	Y	N	42,16,34	Audiophile components
Marantz PM-700AV	450	int	Y	45	MM,5L,2T	Y	Y	42,16,34	Dolby Pro Logic
Marantz PM-80 II	480	int	N	100	MM/MC,4L,2T	Y	N	42,17,34	-
Marantz PM-80SE	650	int	N	110	MM/MC,3L,3T	Y	N	42,17,34	Audiophile components
Marantz AV-500	699	Pre	Y	-	MM,7L,2T	N	Y	42,10,34	Dolby Pro Logic
Mark Levinson 29	3450	Pwr	N	50	-	-	-	-	-
Mark Levinson No 38	3995	Pre	N	-	6L,2T	N	Y	-	Fully remote, balanced
Mark Levinson 27.5	5399	Pwr	N	100	-	-	-	-	-
Mark Levinson No 38S	6495	Pre	N	-	6L,2T	N	Y	-	Special Edition, balanced
Mark Levinson 23.5	7399	Pwr	N	200	-	-	-	-	-
Mark Levinson 20.6	15790	Pwr	N	100	-	-	-	-	Monoblocks, Class A
Matisse Fantasy	2300	Pre	Y	-	6L,2T	N	N	-	Line stage
Matisse Reference	3500	Pre	Y	-	MM/MC,5L,2T	N	N	-	-
McIntosh MC7100/2	1095	Pwr	N	100	-	-	-	-	-
McIntosh C712	1295	Pre	N	-	6L, 2T	Y	Y	-	-
McIntosh C38	2095	Pre	N	-	MM, 5L,3T	Y	Y	-	Multi-room, balanced out
McIntosh MC7150	2295	Pwr	N	150	-	-	-	-	-
McIntosh C39	2795	Pre	Y	-	MM, 10L (6 Vid)	Y	Y	-	Two zone, THX compatible
McIntosh C40	2795	Pre	N	-	MM, 6L, 3T	Y	N	-	Balanced in/out
McIntosh MC7106	2995	Pwr	Y	100	-	-	-	-	Six channel THX amp
McIntosh MC7300	3195	Pwr	N	300	-	-	-	-	-
McIntosh MC275	3595	Pwr	N	75	-	-	-	-	Classic valve amp
McIntosh MC2600	5395	Pwr	N	600	-	-	-	-	-
McIntosh MC1000	9595	Pwr	N	100	-	-	-	-	Monoblocks
Meridian 501	595	Pre	N	-	MM,4L,T	Y	N	33,9,34	MC option, system handset
Meridian 555	595	Pwr	N	60	-	-	-	33,9,32	Stereo
Meridian 562	625	Pre	N	-	MM,8L,T,6D	N	N	33,9,34	Digital main out. MC option
Meridian 551	695	int	N	55	MM,4L,T	-	-	33,9,34	MC option
Meridian 501V	745	Pre	Y	-	MM,4L,T	Y	N	33,9,34	As 501, plus video switching
Meridian 562V	825	Pre	Y	-	MM,8L,T,6D	N	N	33,9,34	As 562, plus video switching
Meridian 601	2750	Pre	N	-	MM,4L,T	Y	Y	-	DSP tone control, MC option
Metaxas Ikarus II	1350	int	N	40	MM/MC,3L,1T	N	N	40,7,40	-
Metaxas Charisma	1525	Pre	N	-	MM/MC,3L,2T	-	-	36,6,29	Separate PSU
Metaxas Iraklis	1525	Pwr	N	50	-	-	-	43,18,37	-
Metaxas Marquis	2250	Pre	N	-	MM/MC,3L,2T	-	N	29,7,45	Separate PSU
Metaxas Solitaire	2350	Pwr	N	130	-	-	-	52,19,42	-
Metaxas Opulence	5500	Pre	N	-	MM/MC,3L,2T	-	N	39,7,45	Separate mains isolated PSU
Metaxas Soliloquy	5990	Pwr	N	100	-	-	-	52,19,42	Pair monoblocks
Micelli Iso	412	Pre	N	-	MM or MC	N	N	small	Phono stage
Micelli Argo	715	Pre	N	-	3L,1T	N	N	33,7,19	2 pairs outputs
Micelli Iso HR	879	Pre	N	-	MM or MC	N	N	small	Phono stage
Micelli Alecto Stereo	1150	Pwr	N	50	-	-	-	32,20,36	-
Micelli Argo HR	1339	Pre	N	-	3L,1T	N	N	36,8,22	2 pairs outputs
Micelli Alecto Mono	1989	Pwr	N	100	-	-	-	32,20,36	-
Michi RHC-10	795	Pre	N	-	5L	-	-	47,8,34	Passive

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Michi RHB-05	995	Pwr	N	100	-	-	-	47,8,36	-
Michi RHO-10	995	Pre	N	-	MM,MC	-	-	47,8,34	Phono equaliser
Michi RHA-10	995	Pre	N	-	5L	-	Y	47,8,34	Active
Michi RHB-10	1650	Pwr	N	200	-	-	-	47,19,37	-
Minstrel Ultra Linear	899	INT	N	30	3L,1T	N	N	-	Low feedback hybrid
Mission PSX-R	300	-	N	-	-	-	-	-	Outboard PSU
Mission Cyrus III	500	Int	N	50	MM,5L,1T	Y	N	22,8,36	PSX-R outboard PSU option
Monrio ADN	595	Pre	N	-	MM/MC	N	N	-	Phono preamp
Monrio Primus	895	Pre	N	-	6L,1T	N	N	-	Line only preamp
Monrio MC-25	995	Pwr	N	80	-	-	-	-	Dual mono construction
Monrio Cento	1495	Pwr	N	135	-	-	-	-	Dual mono construction
Monrio MC-205	1595	Int	N	80	6L,1T	N	N	-	Inc pre-out sockets
Moth 30 Passive	149	Pre	N	-	4L,1T	N	N	5,10,35	-
Moth 30 RIAA	199	Pre	N	-	MM/MC	N	N	5,10,35	Stand alone phono stage
Moth 30 Series Power	239	Pwr	N	30	-	-	-	5,10,35	-
Moth 30 Active	249	Pre	N	-	4L,1T	N	N	5,10,35	-
Moth 30 RIAA 100VA	299	Pre	N	-	MM/MC	N	N	5,10,35	Stand alone phono stage
Moth 30 Integrated	320	Int	N	30	8L,T	N	N	8,18,35	-
Moth 30 Active 100VA	349	Pre	N	-	4L,1T	N	N	5,10,35	-
Moth 30 Mono/40	459	Pwr	N	40	-	-	-	5,10,35	2x monoblocks
Moth 30 Stereo/60	549	Pwr	N	60	-	-	-	5,15,35	1x stereo, 1xPSU
Moth 30 Mono/100	879	Pwr	N	100	-	-	-	5,15,35	2x mono, separate PSU
Mus-Fid A1 Final Edition	399	Int	N	40	MM/MC,3L,1T	N	N	41,6,25	Separate PSU, limited edition
Musical Fidelity E200	599	Pre	N	-	5L,2T	Y	Y	44,12,35	Optional phono/DAC module
Musical Fidelity E100	599	Int	N	70	MM,4L,1T	Y	Y	44,12,35	Pre/power removable link
Musical Fidelity E300	699	Pwr	N	100	-	-	-	44,12,35	Mono/stereo switch
Musical Fidelity F22	999	Pre	N	-	5L,1T	N	Y	49,12,33	Optional phono/digital boards
Musical Fidelity FX	1099	Pwr	N	90	-	-	-	49,12,38	Bal/unbalanced in
Musical Fidelity A1000	1399	Int	N	50	MM/MC,3L,1T	N	N	49,13,36	Separate PSU
Musical Fidelity F15	1899	Pwr	N	100	-	-	-	49,19,38	Bal/unbalanced in/hybrid
Musical Fidelity F18	3999	Pwr	N	220	-	-	-	49,19,67	Bal/unbalanced in/hybrid
NAD 302	169	Int	N	25	MM,3L,2T	Y	N	-	-
NAD Monitor 1000	199	Pre	N	-	MM/MC,3L,2T	Y	N	-	-
NAD 304	229	Int	N	35	MM,4L,2T	Y	N	-	-
NAD Monitor 2100	299	Pwr	N	60	-	-	-	-	-
NAD Monitor 1000S	319	Pre	N	-	MM/MC,3L,2T	Y	N	-	-
NAD 306	329	Int	N	50	MM,4L,2T	Y	N	-	-
NAD Monitor 2700	459	Pwr	N	150	-	-	-	-	THX approved
NAD Monitor 208	799	Pwr							





Key to amplifiers  
Price - typical retail, to nearest pound.  
Power - output power in watts, per channel, RMS.  
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.  
A/V - includes Dolby Surround or Pro Logic decoder and amplification.

Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier.  
Headphone - Y - yes, N - no.  
Remote - Y - yes, N - no.  
Size - width x height x depth in cm.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to cassette decks  
Price - typical retail, to nearest pound.  
Type - T - twin transports, allowing tape to tape dubbing, sequential play etc; S - Single transport, AR - auto-reverse.  
Dolby - B (10dB noise reduction), C (20dB), S (24dB). B is standard for prerecorded material.

Heads - 2 - combination record/play heads; 3 - independent record/play heads, allowing real time off tape monitoring.  
Size - width x height x depth in cm.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Papworth PPA6	0	Pre	N	-	6L	N	N	25,13,33	Bi-mono valve
Papworth PPA6/P	0	Pre	N	-	MM,MC,6L	N	N	25,13,33	Bi-mono valve
Papworth TVA50	1425	Pwr	N	50	-	N	N	43,19,33	Tube stereo
Papworth M100	2645	Pwr	N	100	-	N	N	25,17,38	Tube monoblock
Papworth M200	3825	Pwr	N	200	-	N	N	46,20,31	Tube monoblock
Philips FA930	200	Int	N	65	MM,2L,3T	Y	Y	44,14,30	
Pioneer A-103	130	Int	N	30	MM,3L,2T	Y	N	42,11,31	
Pioneer A-203	150	Int	N	45	MM,3L,2T	Y	N	42,11,31	
Pioneer A-303R	200	Int	N	45	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-300X	230	Int	N	40	MM,3L,2T	N	Y	42,13,36	
Pioneer A-400	280	Int	N	60	MM/MC,3L,2T	Y	N	42,13,36	
Pioneer A-400X	300	Int	N	50	MM/MC,4,2	Y	N	42,13,36	
Pioneer A-503R	300	Int	N	70	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-602	350	Int	N	80	MM/MC,3L,3T	Y	N	42,17,44	
Pioneer VSA-701S	500	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic
Pioneer VSA-D802S	600	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic, DSP
Pro-ject Model 7	259	Int	N	40	MM,3L,2T	N	N	-	
PS Audio 6.1	799	Pre	N	-	4L,1T	N	N	43,6,19	Outboard PSU
PS Audio Phono Link	799	Pre	N	-	MM/MC	N	N	43,6,19	Outboard PSU
PS Audio 5.6	1090	Pre	N	-	MM/MC,3L,2T	N	N	43,6,19	Outboard PSU
PS Audio 100 Delta	1499	Pwr	N	120	-	-	-	42,15,35	
PS Audio 200 Delta	2279	Pwr	N	200	-	-	-	42,15,45	
PS Audio 200b Delta	2490	Pwr	N	200	-	-	-	42,15,45	
PS Audio 250 Delta	2980	Pwr	N	250	-	-	-	42,15,45	Monoblocks
QED Vector One	199	Pre	N	-	4L,1T	N	N	-	
QED C-300CD	259	Pre	N	-	MM/MC,4L,1T	N	N	-	
QED Vector Reference	299	Pre	N	-	4L,1T	N	N	-	
QED C-300PA	329	Pre	N	-	MM/MC,4L,1T	N	N	-	
Quad 306	350	Pwr	N	70	-	N	N	33,7,21	Stereo power amp
Quad 34	398	Pre	N	-	MM,2L,T	N	N	33,7,21	Optional MC phono input
Quad 77	595	INT	N	70	2L,T	-	-	33,6,30	System remote £279
Quad 606	690	Pwr	N	140	-	-	-	33,14,24	Stereo power amp
Quad 66	863	Pre	N	35	MM,4L,2T	N	Y	33,8,26	Variable inputs, inc R/C
Rega Brio	229	Int	N	30	MM,3L,1T	N	N	43,7,15	
Rega Elic	398	Int	N	50	MM,3L,1T	N	N	43,7,25	
Rega Elicit	730	Int	N	70	MM,MC,3L,1T	N	N	43,7,25	Full dual mono
Roksan ROK-L2.5	995	Pre	N	-	4L,1T	N	N	43,8,33	Revised
Roksan ROK-S1.5	1495	Pwr	N	70	-	N	N	-	
Roksan ROK-L1.5	2250	Pre	N	-	4L,1T	N	N	43,8,33	
Roksan ROK-M1.5	4500	Pwr	N	160	48,11,34	N	N	-	Pair monoblocks
Rose RV-23	450	Pre	N	-	MM,2L,1T	N	N	33,9,26	Tube, zero feedback
Rose Scion	499	Int	N	50	MM/MC,3L,2T	N	N	42,7,30	2-box, purist design
Rose RV-23S	525	Pre	N	-	MM/MC,2L,2T	N	N	33,9,26	Tube, separate PSU
Rose RP-190 (Dual Mode)	550	Pwr	N	75	-	-	-	33,9,30	Low feedback monoblock (x2)
Rotel RC970BX MkII	175	Pre	N	-	3L,2T	Y	N	44,8,29	
Rotel RB970BX MkII	225	Pwr	N	60	-	-	-	44,8,29	New upgrade
Rotel RA935BX MkII	250	Int	N	50	3L,2T	Y	N	44,10,35	Separate listen/rec selectors
Rotel RA970BX	300	Int	N	60	4L,2T	Y	N	44,7,35	
Rotel RC980BX	350	Pre	N	-	MM/MC,3L,2T	Y	N	44,7,33	
Rotel RB980BX	450	Pwr	N	120	-	-	-	44,12,33	
Rotel RC990BX	500	Pre	N	-	MM/MC,2L,2T	Y	Y	44,7,33	
Rotel RB990BX	750	Pwr	N	200	-	-	-	44,12,38	
Sansui AU-X117	170	Int	N	30	MM,3L,1T	Y	N	-	
Sansui AU-X3172	275	Int	N	40	MM,3L,1T	Y	N	-	
Sansui AU-X417R	280	Int	N	45	MM,3L,2T	Y	N	-	
Sansui AU-X517R	450	Int	N	60	MM/MC,3L,2T	Y	Y	-	
Sansui AU-Alpha 607	1300	Int	N	90	MM/MC,2L,1T	Y	Y	-	
Sansui AU-Alpha707	1500	Int	N	90	MM/MC, 4L3T	Y	Y	-	Built in BS DAC
Sentec PP9 RIAA MM	500	Pre	N	-	MM	N	N	5,12,23	Phono step-up - MM
Sentec PP9 RIAA MC	600	Pre	N	-	MC	N	N	5,12,23	Phono step-up - MC
Sentec SC9	800	Pre	N	-	4L,2T	Y	N	34,7,15	
Sentec PA9	1000	Pwr	N	60	-	-	-	20,8,30	Monoblocks
Shearpe Phase II	549	Int	N	50	4L,2T	N	N	-	
Shearpe Phase 1 Pre	1099	Pre	N	-	MM/MC/4L,2T	N	N	-	
Shearpe Phase 1 Power	1199	Pwr	N	80	-	-	-	-	Dual mono
Sherwood AI 1110	100	Int	N	55	MM,4L,1T	Y	N	-	
Sherwood AI 5010	170	Int	N	70	MM,3L,2T	Y	N	-	
Sherwood AM/AVP8500	800	-	Y	230	-	Y	Y	-	A/V Pre/power amp
Sonic Link DM20	349	Int	N	25	MM,3L,1T	Y	N	23,8,43	
Sonic Link DM20 Gold	598	Int	N	30	MM/MC,3L,1T	Y	N	23,8,43	
Sonic Link DM30	725	Int	N	25	MM/MC,3L,1T	N	N	23,8,43	
Sony TAF211B	150	Int	N	30	MM,2L	Y	N	43,14,31	Source direct
Sony TAF244B	200	Int	N	40	MM/2L	Y	N	43,14,31	MOSFET power stage
Sony TAF444E	250	Int	N	50	MM,3L,2T	Y	N	43,15,38	
Sony TAF542E	300	Int	N	90	MM/MC,3L,2T	Y	N	43,15,38	UK optimised sound
Sony TA-AV570B	400	Int	Y	70	MM,4L,5T	Y	N	43,15,36	Dolby Pro Logic
Stemfoot Audio SF60	549	Int	N	60	4L,1T	N	N	43,8,35	Passive line amplifier
Stemfoot Audio SF100	849	Int	N	100	4L,1T	N	N	43,8,40	Passive line amplifier
Synergy 3080	0	N	15	MM	N	N	-	-	
Teac A-X1030	180	Int	N	40	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X5030	220	Int	N	60	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X5030	260	Int	N	75	MM/MC,3L,2T	Y	N	44,16,36	
Teac A-BX10	999	INT	N	100	MM/MC,3L,2T	N	N	-	Balanced input
Technics SU-V300	150	Int	N	25	MM,2L,1T	Y	N	43,13,32	A/B speaker select
Technics SU-A600 MkII	200	Int	N	37	MC/MM,3L,2T	Y	N	43,13,32	MOS, R-Core transformer
Technics SU-A700 MkII	250	Int	N	45	MC/MM,3L,2T	Y	Y	43,13,32	
Technics SU-A800 Mk2	350	Int	N	55	MC/MM,3L,2T	N	Y	43,14,37	
Technics SU-A900 Mk2	400	Int	N	60	MC/MM,3L,2T	N	Y	43,14,37	Virtual Battery operation

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
<b>AMPLIFIERS</b>									
Technics SU-C2000	700	Pre	N	-	-	N	Y	45,13,35	Rotary resistor attenuator
Technics SE-A2000	1050	Pwr	N	100	-	-	Y	45,19,44	Meters, R-Core, MOS AA
Tesseract TAADA	1500	Pre	N	-	MM/MC	N	N	-	
Tesseract TALA	1500	Pre	N	-	5L,1T	N	N	-	
Tesseract TAHA	1800	Pre	N	-	MC	Y	N	-	
Tesseract TAP-A	5300	Pre	N	-	MM,3L,2T	N	N	-	
Tesseract TAMP-60	7350	Pwr	N	60	-	-	-	-	2x Monoblocks
Thorens TTP2000	500	Pre	N	-	MM/MC,4L	N	N	-	Minimalist, shoebox form
Thorens 1TA2000	550	Pwr	N	35	-	-	-	-	Matches TTP2000
Thule IA50	599	Int	N	50	4L,1T	N	N	-	Fully balanced operation
Thule IA100	899	Int	N	100	4L,2T	N	N	-	Fully balanced operation
Triangle TE60SE	649	Int	N	70	MM/MC,4L,1T	Y	N	-	
Triangle Nemo Allion 02	1550	Int	N	80	5L,2T	N	N	-	
Tube Tech Seer Line	575	Pre	N	-	5L,1T	N	N	35,8,25	Entry level, 10 yr guarantee
Tube Tech Seer Phono	649	Pre	N	-	MM,4L,1T	N	N	35,8,25	Tube phono stage
TT Unisec Power Amp	1099	Pwr	N	30	-	N	N	35,17,27	Stereo power amp
Tube Tech Prophet	1199	Pre	N	-	4L,1T	N	N	35,8,25	Two box pre, separate PSU
TT Unisec Super Line	1399	Int	N	30	4L,1T	N	N	35,17,27	Line level version of Unisec
Tube Tech Unisec	1399	Int	N	30	MM,3L,1T	N	N	35,17,27	One tube phono stage
Tube Tech Genesis	2599	Pwr	N	100	-	N	N	35,15,27	2x monoblocks
Tube Tech Synergy 1	3999	Int	N	150	5L,1T	N	Y	47,18,47	Bias monitor, soft-start
Unison Research Nemo Simply495	Pre	N	-	MM/MC	N	N	-	-	For Simply series
Unison Research Simply Two995	Int	N	12	4L,1T	N	N	-	-	Single ended triode Class A
Unison Research Simply Four1495	Int	N	24	4L,1T	N	N	-	-	Single ended triode Class A
Unison Research Smart 852995	Pwr	N	24	-	-	-	-	-	SE triode monoblocks
Woodside SC27 Line	705	Pre	N	-	2L,1T	N	N	-	
Woodside SC27 MM	881	Pre	N	-	MM,2L,1T	N	N	-	
Woodside ISA230 Disc	899	Int	N	30	MM,2L,1T	N	N	-	
Woodside ISA230 Line	899	Int	N	30	4L,2T	N	N	-	
Woodside ISA 2.40	949	Pwr	N	40	-	-	-	-	
Woodside SC27 MC	999	Pre	N	-	MC,2L,1T	N	N	-	
Woodside MA35 Class A	1224	Pwr	N	50	-	-	-	-	1 channel monoblock
Woodside STA35	1323	Pwr	N	35	-	-	-	-	
Woodside SC25 Line	1420	Pre	N	-	2L,2T	N	N	-	
Woodside SC26 Phono	1931	Pre	N	-	MM/MC,3L,2T	N	N	-	
Yamaha AX-470	200	Int	N	95	MM,MC,3L,2T	Y	N	-	
YBA Integre Line	999	Int	N	45	4L,1T	N	N	43,9,33	
YBA 3 Power	1199	Pwr	N	45	-	-	-	43,9,33	
YBA Integre	1199								





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.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to compact disc players, transports and DACs  
Price - typical retail, to nearest pound.  
DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma, M - MASH Hybrid - combines multibit and single bit.  
Outputs Digital: Opt - optical (usually Toslink), E - electrical (usually coaxial S/PDIF).

Remote Control - Y - yes, N - No.

Size - width x height x depth in cm.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Dolby	HX Pro	Heads	Size	Special
<b>CASSETTE DECKS</b>							
JVC TD-V662BK	270	S	B,C	Y	3	44,13,33	Dual capstan
Kenwood KX-W4070	170	T	B,C	Y	2	-	Auto bias function
Kenwood KX-W4070	170	T	B,C	Y	2	-	Auto bias function
Kenwood KX-3060	170	S	B,C	Y	2	44,12,37	Tape path stabiliser
Kenwood KX-W4060	180	T	B,C	Y	2	44,13,30	Computer controlled recording
Kenwood KX-W6070	200	T	B,C	Y	2	-	Auto-bias function
Kenwood KX-W6060	200	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-5060S	235	S	B,C,S	Y	2	44,12,30	Auto bias
Kenwood KX-W8060	260	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-W8070S	280	T	B,C,S	Y	2	-	Auto bias function, power load
Kenwood KX-7060S	400	S	B,C	Y	3	44,13,30	Auto tape calibration
Luxman K-322	200	S	B,C	Y	2	13,44,18	Remote control, music search
Luxman K-373	500	S	B,C	Y	3	13,44,35	System bus, mic inputs
Marantz SD-53	200	S	B,C	Y	2	43,14,30	D-bus
Marantz SD-415	210	T	B,C	Y	2	43,14,30	D-bus, mic mixing
Marantz SD-63	269	S	B,C	Y	3	43,14,30	D-bus
NAD 602	200	S	B,C	Y	2	-	Play Trim
NAD Monitor 6100	299	S	B,C	Y	2	-	Play Trim, remote cntrl, Dyneq
Nakamichi DR3	400	S	B,C	N	2	43,10,32	
Nakamichi DR2	600	S	B,C	N	3	43,10,32	Diffused resonance transport
Nakamichi DR1	850	S	B,C	N	3	43,10,32	Manual azimuth calibration
Nakamichi Dragon	2350	AR	B,C	N	3	45,14,30	Auto azimuth correct
Onkyo TA201	200	S	B,C	Y	2	46,12,13	
Onkyo TA-RW313	250	T	B,C	Y	2	46,12,31	
Onkyo KR-609	350	AR	B,C	Y	2	28,12,31	Mini component
Onkyo TA250	350	S	B,C	Y	3	46,12,31	
Onkyo K-W606	370	T,AR	B,C	Y	2	28,12,32	Mini component
Onkyo K-611	430	AR	B,C	Y	3	28,12,32	Mini component
Pioneer CT-S330	170	S	B,C	Y	2	42,13,28	Audio tape setup, FLEX
Pioneer CT-W503R	200	T,AR	B,C	Y	2	42,13,25	Auto NR, FLEX
Pioneer CT-S430S	200	S	B,C,S	Y	2	42,13,28	Auto tape setup, FLEX, Dolby S
Pioneer CT-W603RS	230	T,AR	B,C,S	Y	2	42,13,25	Auto tape setup, FLEX, Dolby S
Pioneer CT-W803RS	300	T,AR	B,C,S	Y	2	42,13,25	Twin record, mic i/p
Pioneer CT-S630S	300	S	B,C,S	Y	3	42,13,38	Auto tape setup
Pioneer CT-M601R	380	AR	B,C	Y	2	42,14,38	Six tape record/play, r/cntrl
Pioneer CT-S830S	500	S	B,C,S	Y	3	42,14,38	Slant Z transport mech
Pioneer CT-95	1000	S	B,C,S	Y	3	44,15,38	Copper plated chassis
Sansui D-X117HX	220	S	B,C	Y	2	-	
Sherwood DS1150	80	S	B,C	N	2	-	
Sherwood DS1010C	100	S	B,C	Y	2	-	Mic input
Sherwood DD1030C	100	T	B	N	2	-	
Sherwood DS3010C	120	S	B,C	Y	2	-	
Sony TCFX211B	100	S	B,C	N	2	43,12,29	
Sony TCK 215B	130	S	B,C	Y	2	43,12,31	Tape calibration
Sony TCK311B	130	S	B,C	Y	2	43,12,31	Auto calibration
Sony TCW445B	150	T	B,C	Y	2	43,12,31	Full logic control
Sony TCK415B	180	S	B,C	Y	3	43,12,31	UK optimised sound
Sony TCWR545B	200	T	B,C	Y	2	43,12,29	Auto calibration
Sony TCWR645S	250	T	B,C,S	Y	2	43,12,31	UK optimised sound
Sony TCK511S	250	S	B,C,S	Y	3	43,12,31	UK optimised sound
Sony TCK611S	300	S	B,C,S	Y	3	43,12,30	UK optimised sound
Teac V-600	150	S	B,C	Y	2	-	Fine bias
Teac R-550	200	AR	B,C	Y	2	-	Blank scan
Teac W-700R	220	T,AR	B,C	Y	2	44,15,29	
Teac V-1010	250	S	B,C	Y	3	44,15,29	Fine bias adjust
Teac V-3010	350	S	B,C	Y	3	44,15,36	Remote control, pitch adjust
Teac V-2020S	380	S	B,C,S	Y	3	44,15,29	Tape calibration
Teac W-6000R	450	T,AR	B,C	Y	2	44,15,33	Pitch control, remote
Teac R-9000S	500	AR	B,C	Y	3	49,15,36	Remote control
Teac V-6030S	550	S	B,C,S	Y	3	-	Dual capstan
Teac V-8030S	650	S	B,C,S	Y	3	-	Quartz locked, dual capstan
Teac V-8000S	700	S	B,C,S	Y	3	48,15,36	Direct drive, tape cal, remote
Technics RS-TR373	180	T,AR	B,C	N	2	43,14,29	Play transport unidirectional
Technics RS-TR474	200	T,AR	B,C	Y	2	43,14,29	High speed FF/REW
Technics RS-BX601	230	AR	B,C	Y	3	43,13,29	Mic inputs, auto tape cal
Technics RS-TR575	250	T,AR	B,C	Y	2	43,14,29	Optical quick reverse
Technics RS-TR701	270	AR	B,C	Y	3	43,13,30	Anti-vibration base
Technics RS-BX747	300	S	B,C	Y	3	43,13,30	Fine bias adj, THC lo-red base
Technics RS-TR979	380	T,AR	B,C	Y	2	43,13,28	Both decks record, quick rev
Yamaha KX-650	260	S	B/C	Y	3	-	
Yamaha KX-W952	500	T	B,C	Y	2	-	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>CD PLAYERS</b>						
Audiomeca Kreatura SE	1350	-	E,O	-	25,14,39	
Audiomeca Kreature SE	1450	MB	E	Y	25,14,39	
Audiomeca Mephisto SE	2250	-	E,O	Y	43,15,33	
Aura CD50	400	BS	E	Y	43,7,34	
Aura CD50CHR	450	BS	E	Y	43,7,34	Chrome finish
AVI S2000 MCII	799	BS	-	-	31,25,9	Low noise clock system
AVI S2000MC	1149	MB	E	Y	31,25,9	20 bit Burr Brown DACs
Cambis CD200 Mk II	150	1bit	-	Y	42,9,29	
Cambridge Audio CD200	150	MB	N	Y	42,9,29	Can play in reverse order
Denon DCD-615	180	MB	E	Y	44,11,29	Digital attenuator
Denon DCD-825	220	MB	E	Y	44,11,28	UK design
Denon DCD-1015	300	MB	E,O	Y	44,11,28	Alpha processor
DPA Renaissance	895	MB	E,O	Y	40,28,8	DPA DP16 DAC
Dual CD1135RC	140	MB	E	Y	42,8,28	Var. headphone out
Dual CD1150RC	150	MB	E	Y	-	Var. headphone out
Dual CD1000RS	170	BS	E	N	-	Remote control via CR9000RS
Dual CD1180RC	180	BS	E	Y	44,9,29	Var. headphone out
Eclipse CD101	80	MB	-	Y	36,8,29	
Eclipse CD420	100	MB	-	Y	42,8,29	
Goodmans Delta 700	110	MB	N	Y	-	
Goodmans GCD360R	120	MB	N	Y	-	
Grundig CD210	120	BS	E	Y	36,8,30	30 mem, random repeat
Grundig CD1	140	BS	E	Y	44,9,30	30 track memory, auto-space
Grundig CD2	190	BS	E	Y	44,9,30	
Grundig CD3	240	BS	E	Y	44,9,30	FTS, display off, fade, DAC7
Harman-Kardon HD7225	230	BS	-	Y	45,10,33	
Harman-Kardon HD7325	299	BS	E,O	Y	45,10,33	
Harman-Kardon HD7425	349	MB	E	Y	45,10,33	
Harman-Kardon HD7525	449	MB	E	Y	45,10,33	
Harman-Kardon HD7625	549	MB	E	Y	45,10,33	
Harman-Kardon HD7725	799	MB	E,O	Y	45,10,33	
Jadis JS-1	8068	MB	-	-	-	
JVC XL-V174BX	140	1bit	-	Y	44,10,28	
JVC XL-V274BK	160	1bit	-	Y	44,10,28	
JVC XL-Z674	300	1bit	-	Y	44,11,28	
JVC XL-M408BK	300	1bit	-	Y	44,13,32	Six disc
JVC XL-Z1050TN	500	1bit	E	Y	45,11,34	
JVC XL-MC100	800	1bit	-	Y	36,37,38	100 disc player
Kenwood DP-2060	160	1bit	-	Y	44,10,26	Central mechanism
Kenwood DP-R4070	200	1bit	-	Y	-	5-disc tray loading
Kenwood DP-R4060	200	1bit	-	Y	44,12,38	Five disc carousel
Kenwood DP-3060	200	1bit	-	Y	44,10,26	High precision master clock
Kenwood DP-M5570	250	1bit	-	Y	-	6+1 disc changer
Kenwood DP-M6060	250	1bit	-	Y	44,12,36	Multiplay CD 6+1 disc
Kenwood DP-5060	250	1bit	O	Y	44,12,31	D.R.I.V.E.
Kenwood DP-7060	380	1bit	O	Y	44,12,31	D.R.I.V.E.
Krell KPS20i	3278	-	E	Y	-	Balanced out, Bit String conv
Krell CD-DSP Mk II	5000	-	-	Y	42,13,28	Digital inputs facility
Krell CD DSP1 5000	5000	MB	2E	Y	42,13,28	Has digital in, balanced out
Krell KSP20i	9950	-	E	Y	-	Balanced out, top loader
Linn Mimik	798	DS	E	Y	32,8,33	BNC digital
Linn Karik	1497	DS	E,O	Y	32,8,33	BNC digital
Luxman D-322	200	MB	-	Y	44,10,28	18bit, 8x oversampling
Luxman D-373	600	MB	O	Y	44,11,35	System bus remote
Luxman D500X's	3750	MB	O	Y	44,12,39	Top loading
Marantz CD-53	200	BS	E	Y	43,9,30	New transport, DAC, circuit
Marantz CD-63	250	BS	E,O	Y	42,9,30	As CD-53
Marantz CD-52 II SE	300	BS	E	Y	42,12,28	Selected passive components
Marantz CD-72SE	600	BS	E,O	Y	42,12,28	As CD-52, 4V output
Marantz CD-10	1200	BS	E,O	Y	46,14,36	Twin DAC-7, heavy build
McIntosh MCD7008	1995	MB	E	Y	-	Seven disc multiplexer
Meridian 506	795	DS	E,O	N	33,9,34	Recently improved sound
Meridian 606	1350	1bit	3E,O	N	-	
Meridian 508	1350	DS	E,O	N	33,9,34	
Metaxas PHOS	1750	BS	E,O	Y	42,16,42	
Micro-Seiki CD-M2DC	3695	MB	E	Y	-	
Micro-Seiki CDM2000X	4689	MB	E	Y	-	
Micromega Stage 1	450	BS	E	Y	43,28,88	Upgradable
Micromega Stage 2	600	BS	E	Y	43,28,88	Upgradable
Micromega Stage 3	800	BS	E	Y	43,28,88	Upgradable
Micromega Trio	6000	BS	E	Y	34,48,31	AES/Toslink digital output
Mission DAD7	900	MB	E	Y	22,8,36	
Mission Discmaster	1900	MB	E	Y	22,8,36	Two box, inc Dacmaster DAC
Musical Fidelity E600	599	BS	E	Y	44,12,35	Balanced XLR output
Musical Fidelity FCD	1499	BS	2E,O	Y	49,12,33	XLR balanced out, tube o/p sta
NAD 501	180	BS	-	N	-	
NAD 502	220	M	E	Y	-	
NAD Monitor 5000	309	M	E	Y	-	
NAD 517	400	BS	E	Y	44,108,40	5-disc carousel player
Naim CD3	898	MB	-	Y	32,6,30	1 box
Naim CD1	1862	MB	-	Y	43,16,30	One box
Naim CD5	3398	MB	-	Y	43,16,30	Two box
Nakamichi MB4s	300	MB	-	Y	43,9,27	6+1 Music Bank, 16 x 4 o/s
Nakamichi MB3s	500	MB	-	Y	43,9,38	6+1 Music Bank, 18 x 8 o/s
Nakamichi MB2s	700					





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.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>CD PLAYERS</b>						
NVA T.T.S	3200	BS	E	Y	-	
NVA T.L.S	3300	BS	E	Y	-	
Onix CD33	999	BS	-	-	43,8,33	DAC7
Onkyo DX710	200	1bit	0	Y	46,11,31	
Onkyo DX703	240	1bit	0	Y	46,11,31	
Onkyo C-711	290	1bit	0	Y	28,8,30	Mini component
Onkyo DX-C110	350	1bit	0	Y	46,12,43	
Onkyo DX750	350	1bit	0	Y	46,11,31	
Orelle CD-100	500	MB	E	Y	44,10,28	DC coupled
Philips CD710	120	MB	-	Y	-	16 bit continuous technology
Philips CD740	130	MB	E	Y	-	Hybrid 5-bit DAC
Philips CD720	130	MB	-	Y	-	16 bit Continuous Calibration
Philips CDC745	199	BS	E	Y	-	Multi-disc tray
Philips CD750	199	BS	E	Y	-	Selected BS DAC, differential
Pioneer PD-77	100	1-bit	E,O	Y	44,13,33	Satin gold finish
Pioneer PD-103	140	1-bit	-	N	42,11,28	Display off
Pioneer PD-203	160	1-bit	-	Y	42,11,28	As 103, variable output & remo
Pioneer PD-S503	200	1-bit	-	Y	42,11,29	Legato Link
Pioneer PD-M603	250	1-bit	-	Y	42,11,30	Six disc
Pioneer PD-S703	300	1-bit	0	Y	42,13,27	SPM, Legato Link, twin PSU
Pioneer PD-M703	300	1-bit	-	Y	42,13,30	Six disc, DSP soundfield cntrl
Pioneer PD-DM802	450	1-bit	-	Y	42,14,31	Dual magazine 12-disc
Pioneer PD-S901	499	1-bit	E,O	Y	42,13,33	SPM, Legato Link, Twin DAC
Pioneer PD-TM3	500	1-bit	-	Y	42,18,35	Triple magazine, 18-disc
Pioneer PD-F100	600	1bit	-	Y	42,19,40	100 disc, Legato Link
Pioneer PD-95	2500	1-bit	E,O	Y	44,16,34	Balanced out, Legato, SPM
Quad CD67	825	DS	E	Y	33,8,26	For use with 66 system
Roksan ATT-DP2P MkII	1495	DS	E	Y	46,12,35	Player, four level isolation
Rotel RCD-930AX	200	1bit	-	Y	44,9,29	
Rotel RCD-940BX	250	MB	-	Y	44,10,32	
Rotel RCD-965BX	300	BS	E	Y	44,10,32	Audiophile components
Rotel RCD-970BX	375	BS	E	Y	44,8,30	
Rotel RCD-965BX D	375	BS	E	Y	44,10,32	Discrete output
Rotel RCD-965BX LED	425	BS	E	Y	44,10,32	Discrete & slit foil caps
Sansui CD-270	180	BS	N	N	-	
Sansui CD-117K II	200	MB	N	N	-	
Sansui CD-X217i	200	MB	E	N	-	
Sansui CD-X317	250	BS	E,O	Y	-	
Sansui CD-X617	350	BS	E,O	Y	-	
Sentec Diana	1100	MB	E,O	N	12,5,23	20 bit
Sherwood CD3020R	130	BS	Y	N	-	
Sherwood CDC5030	200	1bit	N	Y	44,10,38	Five disc carousel
Sony CDP-M302	130	1bit	N	Y	36,10,33	Mid-size, full remote control
Sony CDP-312	150	1bit	-	Y	43,10,29	Digital servo
Sony CDP-C325M	230	1bit	N	Y	36,10,39	Mid size, 5-disc player
Sony CDP-C345	230	1bit	-	Y	43,13,39	Five disc player
Sony CDP-715E	250	1bit	0	Y	43,11,30	UK optimised sound
Sony CDP-915E	300	1bit	0	Y	43,11,36	UK optimised sound
Sony CDP-CX100	800	1bit	0	-	43,13,38	100 disc autochanger
Teac CD-P3500	200	BS	E	Y	44,12,28	
Teac PD-D880	250	MB	-	Y	44,11,38	5-disc carousel
Teac CD-3	250	BS	E	Y	45,13,28	Central mechanism
Teac CD-P4500	280	BS	E	Y	44,12,29	Digital attenuator
Teac VRDS-7	599	BS	E,O	Y	45,15,34	Twin BS
Teac VRDS-10	770	BS	E,O	Y	45,15,34	Twin DAC7, balanced output
Teac VRDS-20	1299	BS	E,O	-	50,15,34	Twin DAC7, balanced output
Teac X-1	2500	MB	Y	Y	46,14,40	Balanced out, 4x20bit
Teac X-1S	3500	MB	0	Y	46,14,40	Balanced out, 4x 20bit
Technics SL-PG360A	140	M	N	Y	43,10,29	Remote control capable
Technics SL-PG460A	160	M	N	Y	43,10,29	4-DAC
Technics SL-PG560A	180	M	0	Y	43,11,30	Selected audio parts
Technics SL-P670A	200	M	0	Y	45,12,29	Virtual Battery operation
Technics SL-P170A	250	M	0	Y	43,13,29	S-Advanced MASH
Technics SL-PS840	450	M	0	Y	43,13,34	Advanced MASH converter
Technics SL-P2000	1000	M	0	Y	45,13,33	THCB base, R-Core transformer
Wadia 16	7395	MB	-	-	-	Glass, plastic, BNC & AES/EBU
Yamaha CDX-670	290	BS	E,O	Y	-	
Yamaha CDC-635	300	BS	-	Y	-	
Yamaha CDX870	330	BS	0	Y	-	
Yamaha CDX-1000	599	BS	E,O	Y	-	
YBA 2	2999	MB	E,O	Y	43,10,33	Outboard power supply

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>CD TRANSPORTS</b>						
Arcam Delta 250	750	-	2E, 0	Y	43,9,28	BNC out, Has sync lock input
ATD Drive 1	3499	-	E,O	Y	44,9,34	Top load, 2-box acrylic
Audiolab 8000CCM	1300	-	E,O	Y	45,8,36	Precision master clock
Audiomeca Damnation	950	-	E,O	Y	29,10,32	
Audiomeca Kreatura	1199	-	E,O	Y	25,14,39	Heavily modified CDM
Audiomeca Mephisto	2100	-	E,O	Y	43,15,33	Integral platter, layer suspen
Counterpoint DA-11E	1495	-	E,O	Y	-	
DPA Enlightenment	635	-	-	Y	40,28,8	Clock locks to DPA DACs
Jadis JCDT	8000	-	-	Y	-	Top load
Krell MD-20	4999	-	E,2O	Y	42,13,28	Top load, AT&T optical out



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.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>CD TRANSPORTS</b>						
Krell KPS 20T	8550	-	E,0	Y	-	AT&T, AES/EBU balanced in
Krell DT-10	9090	-	2E,0	Y	42,13,28	Front loader
Meridian 200	895	-	E,0	Y	32,32,10	
Meridian 500	975	-	E,0	Y	32,33,9	
Meridian 602	1750	-	E,0	Y	32,33,10	
Micromega Drive 1	600	-	E,0	Y	43,28,88	Upgradable, AES/EBU out
Micromega Drive 2	900	-	E,0	Y	43,28,88	Upgradable, AES/EBU out
Micromega T-Drive	1200	-	E	Y	22,28,88	Tray loading, AES/EBU out
Micromega Duo CD3-1	1350	-	E,0	Y	34,9,31	Top loading, AES/EBU out
Micromega Duo CD2-1	2500	-	E,0	Y	34,9,31	Top loading, AES/EBU out
Orelle CD10-T	799	-	E	Y	44,10,32	Isolated PSU, silver wiring
Pink Triangle Cardinal	750	-	-	-	46,8,36	Upgradable transport & player
PS Audio Lambda tr	1990	-	E	Y	38,8,34	AT&T, AES/EBU optional
Roksan ATT-DP2 MkII	1295	-	E	Y	46,12,35	AT&T optical, AES/EBU optional
Roksan ATT-DP2A	1490	-	-	Y	46,12,35	AT&T optical
Teac VRDS-T1	499	-	E,O	Y	44,15,33	VRDS mechanism
Teac P-700	899	-	E,O	Y	23,14,40	Half width, anti-resonance cha
Teac P-2	3499	-	E,O	Y	23,14,49	
Teac P-2S	4299	-	0,E	Y	23,14,49	Gold plate circuit boards
Theta Data Basic	1997	-	E	Y	42,8,34	AT&T, AES/EBU option
Theta Data II NTSC	3290	-	E	Y	42,12,40	AT&T, AES/EBU option
Theta Data II PAL	3490	-	E,O	Y	42,12,40	AT&T, AES/EBU balanced in
Wadia 20	4370	-	-	-	-	Glass, plastic, BNC, AES/EBU
Wadia 7	9995	-	-	Y	35,16,46	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>D/A CONVERTERS</b>						
Arcam Black Box 50	450	Hybrid	E,O	N	43,7,28	Two inputs, sync lock
Arcam Black Box 500	750	BS	E,O	Y	43,9,28	7 inputs, sync-lock
Audio Alchemy DAC-in-the-box200	MB	E	-	-	-	
Audio Alchemy DDev1.1	399	BS	E,O	-	-	Upgradable external PSU
Audio Note DAC1	600	MB	E,O	Y	-	
Audio Note DAC3	1650	MB	E,O	Y	-	
Audio Research DAC2	3940	MB	-	-	48,14,26	20bit, 8x o/s
Audiolab 8000DAC	800	BS	-	-	45,8,36	Balanced AES/EBU input
Audiomeca Elvir	745	BS	E,O	Y	25,39,9	
AWI S2000MD	549	MB	-	-	31,25,9	16 bit, optical & elec i/p
Beard DAP-2 DAC	999	BS	E,O	Y	-	Hybrid tube
Beard DAP-1	1250	MB	-	-	-	
Counterpoint AD20	255	MB	-	-	-	DACCARD for DA-10E
Counterpoint CS18	355	MB	-	-	-	DACCARD for DA-10E
Counterpoint BB69	595	MB	-	-	-	DACCARD for DA-10E
Counterpoint UA20	995	MB	-	-	-	DACCARD for DA-10E
Counterpoint DA-11E	1495	-	E,O	Y	49,6,27	Optional AT&T & AES/EBU balanc
Counterpoint DA-10E	1675	-	E,O	Y	-	Interchangeable DACs, optional
DPA Renaissance	550	MB	-	-	20,28,8	Unique DPA DX16 DAC
DPA Enlightenment	795	MB	-	-	20,28,8	
DPA PDM256	2995	MB	-	-	20,28,8	Unique DPA DX64 DAC
DPA PDM10924	5995	MB	-	-	40,30,8	Unique DPA DX128 DAC
EMF Audio Crystal	500	BS	-	-	-	
Krell Studio 2	3198	MB	-	-	42,13,27	AT&T in
Krell Studio	4450	MB	-	-	42,6,32	AT&T in
Krell Reference 64	14900	MB	-	-	42,13,39	AT&T in
LFJ DAC3	2699	MB	-	N	48,7,37	Optional balanced output
Linn Numerik	1075	MB	-	-	32,8,33	CD sync link with Karik
Meridian 563	695	DS	3E,0	N	33,9,34	
Metaxas Mas DAC	2800	MB	E,O	Y	26,15,45	External PSU, 20 bit
Micromega Microdac	349	BS	E,O	-	22,5,15	Coax/optical
Micromega DAC	600	BS	-	-	43,28,88	AES/EBU input
Micromega Duo BS2	600	BS	-	-	8,28,9	AES input
Micromega T-DAC	800	BS	-	-	22,28,88	Four inputs
Micromega Duo Pro 2	1350	BS	-	-	34,48,31	AES input
Mission DAC5	300	BS	-	-	7,11,29	Outboard DAC, matches DAD5
NVA Dacon	320	BS	E	N	-	
Orelle DA-188	399	MB	-	N	22,7,23	DC coupled, optical & coax in
Orelle DA-180	599	MB	E	N	44,7,28	2 outputs, twin transformers
Perception DAC	695	MB	-	-	-	
Pink Triangle Ordinal	790	BS	E,O	-	23,8,35	Interchangeable DAC & filter
Pink Triangle DaCapo	1450	BS	E,O	-	46,8,35	Unique discrete DAC
Pink Triangle DC	1500	-	-	-	46,8,35	Massive battery PSU for DaCapo
PS Audio DigiLink II	688	MB	-	-	38,8,16	
PS Audio SuperLink 2	1230	MB	-	-	38,8,16	
PS Audio UltraLink 2	2650	MB	-	-	38,6,20	AT&T input option
PS Audio Ref Link	5490	MB	-	-	38,8,36	AT&T input
QED Positron	89	-	-	-	-	Upgrade PSU for Digi
QED Digi Plus	139	BS	E	N	-	
QED Digi Reference	299	BS	-	-	-	Combined 2x Positron/Digi
Roksan ATT-DA2	549	DS	-	N	22,10,33	DAC 4 inputs, optional AT&T
Sentec Diana	993	MB	E,O	-	-	
Teac D-700	599	MB	E,O	-	23,14,40	Matches P-700, 4x20bit
Teac D-2	2499	MB	-	-	23,14,49	18 bit, balanced output





Key to digital recorders  
Price - typical retail, to nearest pound.  
Type - MD - MiniDisc - DCC - Digital Compact Cassette, DAT - Digital Audio Cassettes.  
Digital In & Out - E - Electrical (usually coaxial S/PDIF), O - optical, (usually Toslink).

DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma.  
Size - width x height x depth in cm.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to the Directory for full test results.

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
<b>D/A CONVERTERS</b>						
Theta Probasic II	2299	MB	-	-	42,5,29	
Theta Pro Gen III	5690	MB	-	-	42,8,34	AT&T input option
Theta Pro Gen V	8500	MB	E	N	42,8,34	
Wadia 12	1530	MB	E,O	N	-	Balanced and AT&T input
Wadia 15	3790	MB	E,O	Y	35,9,41	Software upgradable
Wadia 64.4	4750	MB	E,O	N	35,8,28	Balanced output
Wadia 9	12790	MB	E,O	Y	44,9,36	Digital volume, separate PSU
Woodside DAC2	509	MB	E,O	-	-	
Woodside DAC1	909	MB	E,O	-	-	

Model	Price	Type	Dig. In	Dig. Out	DAC Type	Size	Special
<b>DIGITAL RECORDERS</b>							
JVC XM-D1BK	900	MD	E,O	E,O	BS	18,5,13	
Marantz DD-82	199	DCC	E,O	E,O	MB/BS	42,15,34	DAC7 output
Meridian CDR	4500	CD-R	E,O	E	BS in/	-	
Nakamichi 10007	0	DAT	E,O	E,O	MB in/	-	
Philips DCC300	179	DCC	E	Y	BS in/	36,11,30	
Philips DCC600	199	DCC	E	Y	BS in/	44,12,30	
Philips DCC951	300	DCC	E,O	E	MB	-	Turbodrivre mech, 18 bit
Pioneer D-05	800	DAT	-	-	-	-	96kHz sampling
Pioneer D-07	1150	DAT	E,O	E,O	-	44,14,38	96kHz record, Legato Link
Sharp MD-M11E	450	MD	-	Y	-	8,3,11	Recorder, title generator
Sony MBS501	800	MD	E,O	E,O	BS	43,9,35	Sample rate converter
Sony DTC80ES	800	DAT	E,O	E,O	BS	43,11,55	SBM
Technics RS-DC8	400	DCC	E,O	E,O	BS	43,12,35	Title input capable

Model	Price	Type	Weight	Impedance	Special
<b>HEADPHONES</b>					
Aiwa HP-V141	7	Ear	5	16	Bass resonator ducts
Aiwa HP-A160	7	Opn	45	32	Banded, 3.5/6.3mm
Aiwa HP-JB33	8	Opn	18	16	Vertical ear fit, ultra light
Aiwa HP-V143	9	Ear	5	16	Bass resonator ducts
Aiwa HP-A260	9	Opn	54	32	Banded, bass resonator ducts
Aiwa HP-V145	10	Ear	5	16	Carrying case included
Aiwa HP-V147	10	Ear	5	16	Bass resonator ducts
Aiwa HP-X201	13	Slid	230	-	Dual plug
Aiwa HP-A360	13	Opn	65	40	Banded, bass resonator ducts
Aiwa HP-X301	20	Slid	230	-	3m lead, dual plug
Aiwa HP-VX303	25	Slid	230	-	In-line controls, dual plugs
Aiwa HP-X705	40	Slid	130	-	Dual plug, 2m ext cable
AKG K2	23	Opn	70	200	Mini
AKG K33	25	Opn	90	50	
AKG K44	42	Opn	90	50	
AKG K135	46	Opn	160	150	
AKG K141	74	Opn	225	600	
AKG K240 Monitor	82	Opn	240	600	
AKG K270	112	Slid	250	75	
AKG K280 Parabolic	117	Opn	250	75	
AKG K400	118	Opn	250	120	
AKG K270 Studio	121	Slid	250	75	
AKG K500	138	Opn	250	120	
AKG K340	191	Opn	380	400	
AKG K1000	646	Opn	270	120	
Audio Technica ATH-309	36	Opn	140	30	
Audio Technica ATH-MAX	39	Opn	140	30	
Audio Technica ATH-909	60	Opn	200	600	
Audio Technica ATH-01	80	Opn	200	600	
Audio Technica ATH-910	90	Slid	200	600	
Audio Technica ATH-900C	245	Opn	240	32	
Beyer DT211	33	Opn	120	40	
Beyer DT311	49	Opn	124	40	
Beyer DT331	59	Opn	210	40	
Beyer DT411	69	Opn	120	250	
Beyer DT431	89	Opn	210	40	
Beyer DT511	99	Opn	200	250	
Beyer DT990	119	Opn	200	600	
Beyer DT531	129	Opn	245	250	
Beyer DT100	135	Slid	350	600	
Beyer DT801	159	Slid	250	250	
Beyer IRS790	179	Opn	270	-	Cordless infra-red
Beyer DT811	179	Opn	245	250	
Beyer DT770 Pro	185	Slid	250	600	
Beyer IRS890	199	Opn	270	600	
Beyer DT990 Pro	199	Opn	230	600	
Beyer DT901	199	Slid	280	250	
Beyer DT911	219	Opn	275	250	
Grado Prestige SR60	90	Opn	-	40	
Grado Prestige SR80	125	Opn	-	40	
Grado Prestige SR100	175	Opn	-	40	
Grado Prestige SR200	230	Opn	-	40	
Grado Prestige SR300	320	Opn	-	40	
Grado Signature HP3	410	Opn	-	40	



Key to headphones  
Price - typical retail, to nearest pound.  
Type - Opn - open back, vented or velocity type; gives less environmental isolation, but is usually more natural feeling in extended use. Slid - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - Infra red cordless. Ear - in-ear model.

Impedance - in ohms.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to the Directory for full test results.

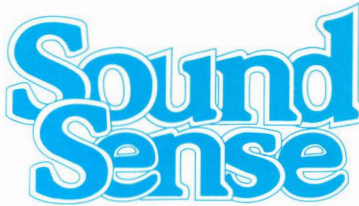
Weight - without cable.

Model	Price	Type	Weight	Impedance	Special
<b>HEADPHONES</b>					
Grado Signature HP2	510	Opn	-	40	
Grado Signature HP1	615	Opn	-	40	
Jecklin Float Model 1	75	Opn	400	200	
Jecklin Float Model 2	99	Opn	400	200	
Jecklin Float ELS	399	Opn	600	8	Electrostatic
JVC HA-M3	6	Slid	33	32	1.2m dual plug lead
JVC HA-F15	9	Opn	6	16	Mini 1.2m, 3.5/6.3mm plug
JVC HA-X55	12	Slid	45	32	2m dual plug lead
JVC HA-D410	15	Slid	90	32	2m, 3.5/6.3mm plug
JVC HA-X77	16	Slid	40	32	2m dual plug lead
JVC HA-F35	16	Opn	6	32	Mini 1.2m, 3.5/6.3mm plug
JVC HA-X99	17	Slid	50	32	2m dual plug lead
JVC HA-D510	20	Slid	110	32	3m, 6.3/3.5m jacks
JVC HA-D610	25	Slid	120	32	3m, 6.3/3.5m jacks
JVC HA-D690	40	Slid	220	32	3m, 6.3/3.5m jacks
JVC HA-D710	55	Slid	210	32	3m, 6.3/3.5m jacks
JVC HA-D910	65	Slid	220	32	3m, 6.3/3.5m jacks
JVC HA-D1000	250	Slid	340	32	5m, 6.3/3.5m jacks
Kenwood KH-535	15	Ear	-	32	3.5mm plug
Kenwood KH-757	20	Ear	-	32	3.5mm plug
Kenwood KH-1000	20	Opn	30	32	2m OFC lead
Kenwood KH-959	25	Ear	-	32	3.5mm plug
Kenwood KH-2020	40	Slid	210	32	2.5m OFC lead
Kenwood KH-5000	70	Slid	280	32	2.5m OFC lead
Koss HP/1	6	Opn	35	27	
Koss HP/3	7	Ear	5	27	
Koss HP/5	11	Ear	12	28	
Koss HP/6	15	Opn	75	92	
Koss HP/7	20	Opn	55	90	
Koss TD60	29	Slid	150	27	
Koss TD65	45	Slid	150	100	
Koss MAC5	45	Opn	100	60	
Koss TD75	59	Slid	330	150	
Koss Porta Pro Jnr	59	Opn	65	60	
Koss Porta Pro 1	65	Opn	65	60	
Koss MAC7	65	Slid	160	60	
Koss Porta Pro 2000	95	-	-	-	
Koss Pro 480	115	Clid	250	100	
Koss Pro 4AA	129	Slid	425	230	
Koss JCK200	195	Slid	240	100	Cordless infra-red
Koss JCK300	350	Slid	240	100	Cordless infra red
Koss ESP950	1995	Opn	350	-	Electrostatic
Maxell EB-125	4	Ear	15	32	Stereo ear buds
Maxell HP-100	4	Ear	3	32	Replaceable pads, 1m lead
Maxell HP-200	5	Opn	30	32	Replaceable pads, 1m lead
Maxell EB-225	8	Ear	44	21	Stereo ear buds, winder case
Maxell HBS-150	8	Ear	25	32	Water resistant head buds
Maxell HP-400	8	Ear	4	32	With pouch, 6/3/3.5mm fit
Maxell EBS-325	9	Ear	13	32	Water resistant earbuds
Maxell EB-425	10	Ear	13	32	Stereo ear buds, winder case
Maxell HP-700	10	Opn	56	22	Adjustable locking headband
Maxell HP-500	13	Opn	45	32	2.7m lead, 6.3/3.5mm fit
Maxell HP-1000	15	Opn	95	32	2.7m lead, digital ready
Maxell HP-2000	20	Opn	140	32	Volume control digital ready
Maxell HP-3000	30	Sed	120	32	Volume control digital ready
Nakamichi SP7	70	Opn	150	45	
Pioneer SE-5	16	Opn	60	30	2m OFC cable
Pioneer SE-15	20	Opn	65	30	2m OFC cable
Pioneer SE-32	23	Opn	94	40	2.5 OFC cable
Pioneer SE-52	25	Opn	104	40	2.5 OFC cable
Pioneer SE-15V	30	Opn	65	30	5m OFC cable
Pioneer SE-330D	35	Slid	165	35	3m cable, bass boost duct
Pioneer SE-400D	37	Slid	185	35	3m cable, dual bass horn
Pioneer SE-500D	48	Slid	175	35	3m cable, dual bass horn
Pioneer SE-700D	60	Slid	180	35	3m cable, dual bass horn
Ross RE-233	5	Opn	25	8	Micro
Ross RIH-150	6	Ear	5	16	Inner ear headphone
Ross RE-235	6	Opn	5	16	Personal stereo
Ross RE-234	6	Opn	5	16	Personal stereo
Ross RE-229	6	Opn	35	8	Folding
Ross RE-2030	6	Opn	5	8	Personal stereo
Ross RMH-300	7	Opn	51	8	Lightweight
Ross RE-280	7	Ear	10	16	Vertical inner ear
Ross RE-246	7	Opn	5	16	Micro stereo phones
Ross RE-223	7	Slid	155	8	Stereo/mono
Ross RMH-500CD	9	Opn	48	16	Lightweight
Ross RIH-360CD	9	Ear	16	16	Vertical inner ear
Ross RE-2060CD	9	Opn	5	16	Inner ear headphone
Ross RMH-310TV	10	Opn	51	8	For video and TV
Ross RIH-550	10	Ear	5	16	Inner ear, with volume control
Ross RIH-460CD	12	Ear	16	16	Vertical inner ear, volume pot
Ross RDH-200CD	13	Slid	150	8	Closed back
Ross RDH-100CD	15	Slid	144	8	CD headphone
Ross RDH-300CD	17	Slid	155	8	CD headphone
Ross RDH-400CD	22	Slid	186	8	Digital headphone

Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory.

Sennheiser HD320	45	Opn	120	60	3m lead, 3.5/6.3mm
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HK1200	£279.90	£199.90
HK1400	£399.90	£299.90
HD7450	£299.90	£199.90

	normal price	CLEARANCE PRICE
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ADF850	£229.90	£199.90
XKS7000*	£549.95	£399.90
XKS9000*	£699.90	£479.90
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RA935BX	£199.90	£149.90

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Key to headphones  
Price - typical retail, to nearest pound.  
Type - Opn - open back, vented or velocity type; gives less environmental isolation, but is usually more natural feeling in extended use. Sid - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - Infra red cordless. Ear - in-ear model.

Impedance - in ohms.

Highlighted products have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

Weight - without cable.

Model	Price	Type	Weight	Impedance	Special
<b>HEADPHONES</b>					
Sennheiser HD16	8	Opn	45	32	Mini, 1.2m lead, dual plug
Sennheiser HD36	11	Opn	62	32	Mini, 1.2m lead, dual plug
Sennheiser HD56	13	Opn	72	32	Mini, 1.2m lead, dual plug
Sennheiser Vegas	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser Manhattan	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser HD440 II	35	Opn	125	60	3m lead, 3.5/6.3mm
Sennheiser HD60TV	36	Opn	118	32	6.8m lead (inc vol control)
Sennheiser HD320	45	Opn	120	60	3m lead, 3.5/6.3mm
Sennheiser HD330	60	Opn	120	100	3m lead, 3.5/6.3mm
Sennheiser HD340	70	Opn	120	100	Single sided cable
Sennheiser HD25 SP	80	Sid	115	85	Monitoring headphone
Sennheiser HD535	90	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD545 Reference	110	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD565 Ovation	130	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD265 Linear	130	Sid	260	150	Closed back
Sennheiser HD25	145	Sid	140	70	Professional, closed back
Sennheiser IS450	150	-	160	-	Infra-red cordless - hi-fi
Sennheiser IS550	180	-	170	-	Infra-red cordless
Sennheiser HD 580 Precision	190	Opn	260	300	Flagship model
Sennheiser Charleston	225	Opn	210	140	3m lead, dual plug, leather tr
Sennheiser IS850	830	-	330	-	Digital audiophile infra-red
Sennheiser HE60/HEV70	998	Opn	260	-	Electrostatic with energiser
Sennheiser Orpheus	9652	Opn	365	-	Electrostatic, valve energiser
Sony MDR-007 Mk II	8	Opn	36	-	2m, 3.5/6.3mm plug
Sony MDR-009	10	Opn	40	-	2m, 3.5/6.3mm plug
Sony MDR-W07L	11	Ear	13	-	1m mini plug
Sony MDR-A009	12	Opn	-	-	-
Sony MDR-E515V	12	Ear	5	-	1m lead, mini plug
Sony MDR-V50	13	Sid	-	-	-
Sony MDR-E525	15	Ear	5	-	1m lead, mini plug
Sony MDR-24	15	Opn	-	-	7m, 3.5/6.3mm plug
Sony MDR-25	16	Opn	-	-	-
Sony MDR-W12L	16	Ear	-	-	1.2m mini plug
Sony MDR-008TV	17	Opn	-	-	5m, 3.5/6.3mm plug
Sony MDR-E535	18	Ear	5	-	1.2m lead, mini plug
Sony MDR-44	18	Opn	-	-	7m, 3.5/6.3mm plug
Sony MDR-009TV	19	Opn	-	-	5m, 3.5/6.3mm plug
Sony MDR-35	20	Opn	-	-	-
Sony MDR-CD30	20	Sid	-	-	2m, 3.5/6.3mm plug
Sony MDR-E747MP	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-CD50	20	Sid	180	24	2m, 3.5/6.3mm plug
Sony MDR-5747	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-P1TV	22	Sid	-	-	5m, 3.5/6.3mm plug
Sony MDR-A22L	22	Ear	-	-	1.2m mini plug
Sony MDR-CD250EX	28	Sid	-	-	3m, 3.5/6.3mm lead
Sony MDR-CD450	45	Sid	260	24	3m, 3.5/6.3mm plug
Sony MDR-IF210	50	IR	170	-	Extra h/phone w/o transmitter
Sony MDR-CD550	60	Sid	270	45	3m, 3.5/6.3mm plug
Sony MDR-D33	70	Sid	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-IF210K	80	IR	170	-	Seven meter range infra red
Sony MDR-D55	90	Sid	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-CD750	90	Sid	290	45	3m, 3.5/6.3mm plug
Sony MDR-D77	120	Sid	140	45	1.5m, 3.5/6.3mm plug
Sony MDR-610k	190	IR	470	-	Seven meter range infra-red
Sony MDR-CD1000	200	Sid	330	45	1.5m, 3.5/6.3mm plug
Stax SR34	169	Opn	170	-	Electrostatic
Stax SR Gamma	239	Opn	300	-	Electrostatic
Stax SR84	259	Opn	160	-	Electrostatic
Stax SR Lambda	349	Opn	325	-	Electrostatic
Stax Gamma Pro	399	Opn	300	-	Electrostatic
Stax Lambda Pro	449	Opn	325	-	Electrostatic
Stax Lambda Sig	549	Opn	325	-	Electrostatic
Stax Omega	1695	Opn	400	-	Electrostatic
Technics RP-HT77	30	Sid	160	32	3m lead, OFC wire
Technics RP-HT86	40	Sid	165	35	3m lead, XBS acoustic lead
Technics RP-HT116	60	Sid	190	35	3m lead, XBS function
Technics RP-F10	100	Sid	300	32	3m lead, XBS pipe phone
Technics RP-F30	180	Sid	340	32	3m lead, XBS double drive
Vivanco SR60	3	Opn	-	-	Mini, fits outer ear
Vivanco SR12	3	Opn	-	-	In ear, with spare plug
Vivanco SR52	5	Opn	-	-	Mini headphones 3.5mm plug
Vivanco SR54	7	Opn	-	-	Mini, volume control, 3.5mm
Vivanco SR14	7	Opn	-	-	In ear, micro
Vivanco SR16	8	Opn	-	-	Micro, volume control 3.5mm
Vivanco SR250	19	Sid	-	-	Xtra bass feature
Vivanco SR606	40	Opn	225	32	3.5/6.3mm plug
Vivanco IR5000	50	-	-	-	Mono, infra red cordless
Vivanco SR850	50	Opn	-	-	Double bow design for comfort
Vivanco IR6000	70	-	-	-	Stereo infra-red cordless
Vivanco SR909	70	Opn	285	600	Remote control lead, all plugs
Vivanco IR6500	90	-	-	-	Stereo infra-red with charger
Vivanco SR1000IFL	110	Opn	265	100	In-front localisation
Vivanco IR7100	120	-	-	-	Stereo infra-red cordless
Vivanco IR7600	140	-	-	-	Stereo infra-red cordless
Vivanco SR200IFL	140	Opn	-	-	In-front localisation

Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory.

Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
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Sens - output at given power input level.  
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Model	Price	Type	Sens	Impedance	Power	Size	Special
<b>LOUDSPEAKERS</b>							
Acoustic Energy Aegis 1	452	2x Pt	86	8	150	21,39,26	Stand mount, metal cone
Acoustic Energy Aegis 2	799	2x Pt	86	8	200	33,106,26	Floor, reflex, metal cone
Acoustic Energy AE1	870	2x Pt	88	8	200	26,30,18	Metal dome/cone, solid enc
Acoustic Energy AE2	1175	2x Pt	91	6	200	24,40,32	Twin bass, metal cone
Acoustic Energy AE3	1650	3x Pt	87	4	250	37,27,63	Simplified metal dome/cone
Advent Mini	99	-	88	8	120	16,28,14	Bookshelf/stand mount
Advent Baby 2	149	2x	89	8	75	26,39,15	Bookshelf/stand mount
Advent Graduate	219	2x	89	8	210	28,44,17	Bookshelf/stand mount
Advent Prodigy	299	-	89	8	300	24,68,20	Floor standing, free space
Advent Legacy 2	349	-	90	8	500	38,67,22	Floor standing, free space
Advent Laureate	499	-	90	8	500	21,80,29	Floor standing, free space
Advent Heritage	579	-	90	8	600	25,89,31	Floor standing, free space
Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
Allison AL105	170	2x	90	4	150	24,37,21	Boundary, stand mount
Allison MS200	220	-	90	4	75	13,25,14	Boundary, stand mount
Allison AL110	220	-	90	4	150	24,40,23	Floor standing, free space
Allison AL115	280	-	90	4	150	28,51,26	Boundary, stand mount
Allison CD6	300	-	90	4	150	29,29,29	Cuboid, wall mount
Allison CD7	380	-	90	4	150	24,70,24	Floor standing, free space
Allison AL120	420	-	90	4	200	28,61,29	Floor standing, free space
Allison CD8	550	-	90	4	200	27,73,27	Floor standing, free space
Allison AL125	650	-	90	4	200	28,78,29	Open space, free standing
Allison AL130	800	-	90	4	200	32,95,34	Open space, free standing
Allison L.C. 10	2500	-	87	6	200	48,102,27	Floor standing, free space
Allison L.C. 20	5500	-	87	6	400	53,122,31	Floor standing, free space
AMC WM50	120	-	86	8	60	19,28,7	Ceiling mount
AMC WM75	160	-	86	8	80	22,30,9	Ceiling mount
AMC WM100	210	-	86	8	100	26,36,10	Ceiling mount
Apogee Grand	0	Ribbon	86	-	-	71,194,86	Three way ribbon, active sub
Apogee Centaur Minor	1345	Hybrid	88	4	100	30,88,20	Ribbon/dynamic
Apogee Ribbon Wall	1750	Hybrid	89	-	-	27,120,7	Ribbon/dynamic
Apogee Centaur	2300	Hybrid	88	4	150	33,102,25	Ribbon/dynamic
Apogee Slant 6	2400	Hybrid	88	-	-	-	Ribbon tweeter, dynamic bass
Apogee CDD Subwoofer	3490	Hybrid	87	-	-	63,38,55	Active moving coil sub
Apogee Stage Sub	3645	MC	86	-	-	58,25,42	Active moving coil sub
Apogee Slant 8	3700	Hybrid	88	-	-	-	Ribbon treble, dynamic mass
Apogee Caliper Sig	3998	Ribbon	87	-	-	58,127	Two way
Apogee Stage	4100	Ribbon	86	-	-	55,82,5	Two way
Apogee Centaur Major	4980	Hybrid	88	4	200	40,141,27	Ribbon/dynamic
Apogee Studio Grand	14900	Hybrid	87	-	-	63,160,55	Three way ribbon, active sub
AR M.5	139	2x	88	6	-	18,21,15	Boundary, bookshelf mount
AR Pi One	149	-	90	8	60	19,32,17	Stand mount, boundary siting
AR Fun Partner	170	-	90	6	75	27,15,20	Utility model
AR Pi Two	199	-	90	8	100	27,44,2	Stand mount, boundary siting
AR M1	199	-	88	8	100	28,27,20	Boundary, bookshelf mount
AR Pi Three	219	-	89	8	100	21,51,22	Stand mount, boundary siting
AR Active Partner	230	Active	-	-	-	19,27,15	Utility model
AR Rock Partner	240	-	90	8	100	24,37,22	Utility powered (active)
AR M2	299	-	90	8	125	24,42,36	Boundary, bookshelf mount
AR Subwoofer 1MS	300	-	90	4	180	30,21,48	Compact subwoofer
AR M3	349	-	90	8	125	24,55,40	Boundary, bookshelf mount
AR Powered Partner	350	Active	-	-	15	19,27,15	Stand mount, free space
AR Pi Four	399	-	88	8	125	25,57,27	Stand mount, free space
AR M4	429	-	88	8	150	20,72,40	Floor standing, free space
AR M5	799	-	90	8	175	22,92,27	Floor standing, free space
AR M6	899	-	90	8	200	22,106,27	Floor standing, free space
Arcam Delta 2	300	2x Pt	88	8	75	22,38,28	Stand mount, walnut or black
ATC SCM10	995	2x IB	80	8	300	18,38,26	Minimum 100wpc, wall/free use
ATC SCM20	1505	2x IB	83	8	300	31,72,34	Minimum 100wpc, wall/free use
ATC SCM20 Tower	1999	2x IB	83	8	300	24,103,34	Floor standing SCM20
ATC SCM50	3480	3x Pt	85	8	150	31,72,43	Passive/to special order only
ATC SCM100	4033	3x Pt	88	8	-	40,84,53	Passive/to special order only
ATC SCM50A	4864	Active	-	8	350	31,72,48	With crossover and amplifiers
ATC SCM100A	5660	Active	-	8	350	40,84,59	With crossover and amplifiers
ATC SCM200A	11207	Active	91	-	850	-	Wall/free placement
ATC SCM300A	11995	Active	94	-	850	-	Wall/free placement
Audio Note AN-KB	499	-	90	8	100	28,46,23	Free space, stand mount
Audio Note AN-K/SP	699	-	90	6	100	28,46,23	Free space, stand mount
Audio Note AN-JB	799	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-J/SP	999	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-E/B	1299	-	94	8	150	36,84,28	Free space, stand mount
Audio Note AN-E/SP	1599	-					



# 106 HI-FI CHOICE BUYER'S GUIDE



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<b>LOUDSPEAKERS</b>							
B&O Beovox 4500	450	2x Pt	87	8	90	45,38,8	
B&O Beovox RL7000	665	3x	88	8	200	50,70,24	Twin bass
B&O Beolab 4500	1125	Active	-	-	45	45,38,8	Attaches to wall, display
B&O Beolab 6000	1350	Active	-	-	80	20,110,21	Column, two amps, shielded
B&O Beolab 8000	1900	Active	-	-	100	15,132,15	Shielded column, int amps
B&O Beolab Penta 3	2375	Active	-	-	150	22,165,34	Line array column, display
B&W Solid Team	140	Pt	87	4	75	14,20,14	White & black finish
B&W Centrale	150	Pt	89	8	150	17,24,17	
B&W CWM5	150	2x	89	8	70	16,22,7	In wall
B&W Solid Teambass	160	Sub	91	4	100	20,45,34	White & black finish
B&W 2002	160	Pt	87	4	80	18,35,20	Budget hi-fi range, black ash
B&W DM600i	190	2x IB	87	4	100	21,36,25	Stand/shelf mount
B&W 2003	190	Pt	89	4	100	20,43,24	Budget hi-fi range, black ash
B&W Solid Monitor	200	Pt	90	8	150	17,24,15	Various colours
B&W CWM6i	220	2x	89	8	70	23,32,8	In wall
B&W Solid Twinbass	230	Sub	91	4	150	45,20,60	White & black finish
B&W DM610i	250	2x IB	89	4	150	24,49,31	Stand/shelf mount
B&W CWM8i	250	2x	90	4	100	28,38,9	In wall
B&W 2004	250	Pt	91	4	120	20,65,24	Budget hi-fi range, black ash
B&W Solid Verticale	400	Sat/sut	88	4	100	-	Lifestyle, 3 boxes
B&W DM620i	430	2x ABR	90	4	150	24,75,31	Floor standing
B&W P4	600	2xPt	88	8	120	20,81,24	3 real wood veneers
B&W DM630i	700	3x Pt	91	4	200	24,85,41	Floor standing
B&W P5	800	3xPt	90	8	200	20,90,28	3 real wood veneers
B&W Matrix 805 VH	895	Pt	87	8	120	33,33,21	Outdoor tweeter (vert/horiz)
B&W DM640i	900	3x Pt	91	4	200	24,97,41	Floor standing
B&W P6	1000	3xPt	90	8	200	20,100,30	Time aligned tweeter
B&W Matrix 804	1495	Pt	89	8	200	26,92,26	Matrix enclosure
B&W Matrix 803s2	1945	4xPt	90	8	250	26,101,34	Matrix enclosure
B&W Matrix 802s3	2445	3xPt	90	8	500	30,104,37	Matrix enclosure
B&W Matrix 801s3	3500	Pt	87	8	600	44,100,56	Floor, studio monitor
B&W Silver Signature	4500	Pt	88	8	120	25,45,24	External crossover
Bose XL1000	115	Pt	-	8	50	29,19,17	
Bose XL2000	160	Pt	-	8	70	36,23,18	
Bose XL3000	180	Pt	-	8	90	47,29,23	
Bose 101 M'ble Monitor	190	-	-	4	60	13,23,15	Black finish
Bose XL4000	220	Pt	-	8	100	57,32,30	
Bose VS100	250	-	-	8	-	23,15,15	
Bose 151 Environmental	270	-	-	6	60	24,14,16	Waterproof/suitable for extrem
Bose 161 Freestyle	275	-	-	6	60	25,14,16	
Bose 201 Ser III	290	-	-	8	60	38,20,25	Direct/reflecting technology
Bose C'puter RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Video RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Roomate II	300	Active	-	-	60	24,14,16	Self powered AC/12V DC
Bose 301 VM	380	-	-	8	75	24,43,27	Direct/reflecting technology
Bose 305	430	2x	-	8	100	23,45,28	Tall stand mount, boundary
Bose A'mass AM3 II	500	-	-	4-8	50	36,20,20	Acoustimass technology
Bose 401	500	-	-	4	100	30,30,76	Direct/reflecting technology
Bose SE-5 Ser II System	760	-	-	4-8	100	90,100,18	
Bose A'mass AM511	760	-	-	4-8	200	49,35,19	Acoustimass direct/reflecting
Bose A'mass AM7	830	-	-	4-8	100	35,49,19	Acoustimass direct/reflecting
Bose 601 MKIII	880	-	-	8	200	32,31,76	Direct/reflecting technology
Bose 901 V1	1650	1x	-	8	-	33,53,32	Direct/reflecting technology
Boston Acoustics HD5	139	2x	89	8	50	25,16,18	Bookshelf, black
Boston Acoustics 325	139	-	90	4	50	17,17,5	Wall/ceiling white flush mount
Boston Runabout	169	-	89	8	50	22,15,16	White indoor/outdoor system
Boston Acoustics HD7	169	2x	90	8	75	36,23,18	Bookshelf, black
Boston Satellites	170	2x	89	8	-	-	Satellite speakers
Boston Acoustics 350	179	-	90	4	50	24,17,6	Wall/ceiling white flush mount
Boston Acoustics 335	179	-	90	8	50	18,9	Wall mount, round
Boston Acoustics HD8	199	-	90	8	75	46,29,20	Stand/shelf, black
Boston 360 Ser II	209	-	89	8	60	22,15,7	Wall/ceiling, white, flush mou
Boston Acoustics HD9	249	2x ABR	90	8	100	62,32,25	Stand/shelf mount
Boston Acoustics 380	249	-	90	8	75	31,24,8	Wall/ceiling white flush mount
Boston Acoustics Voyager	299	-	89	8	60	26,16,17	White indoor/outdoor, metal
Boston Acoustics SW10	449	Sub	-	-	100	34,17,42	Powered subwoofer
Boston SubSat Six	450	Sat/sut	89	8	100	-	Passive subs and two satellite
Boston SubSat 7	549	-	89	8	125	-	Passive sub & 2 satellites
Boston Lynfield 300L	1499	-	83	8	250	23,34,28	Stand mount, black
Boston Lynfield 500L	4449	-	85	5	350	122,23,47	Free stand, separate bass/top
Canon S-C10	130	2x	87	8	95	34,15,15	Shielded, wide-imaging stereo
Canon SV-15	130	2x	86	8	50	24,17,17	Utility - wide dispersion
Canon S-30	180	1x Pt	90	6	75	23,27,24	Wide imaging stereo
Canon S-B20	200	Sub	87	8	100	48,39,37	Free standing, passive
Canon V-100	210	2xPt	90	4	75	25,33,17	Corner mount, wide dispersion
Canon S-35	250	2x	90	6	75	23,27,24	Wide Imaging Stereo
Canon V-SB100	250	Sub	85	6	100	37,34,21	Subwoofer for V100
Canon S-50	350	1x Pt	87	8	75	25,31,25	Wide imaging stereo
Canon S-70	700	2x Pt	87	6	100	25,78,25	Wide imaging stereo
Castle Trent II	199	Pt	89	8	60	20,34,18	Shelf/stand, nine finishes
Castle Durham 900	299	Pt	90	8	85	22,40,23	Shelf/stand, nine finishes
Castle York	419	Pt	89	8	100	26,43,22	Stand mount, stands inc
Castle Severn	499	Pt	87	8	110	23,77,20	Free standing, 9 finishes
Castle Chester	699	Horn	90	8	100	23,91,25	Quarter wave, nine finishes
Castle Howard	1099	3xHorn	90	8	125	26,104,41	Quarter wave, nine finishes
Castle Winchester	1649	3x	90	8	150	42,108,23	9 finishes, quarter wave



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<b>LOUDSPEAKERS</b>							
Celestion CSC	129	-	89	6	75	33,13,15	Centre channel
Celestion CS135	139	-	86	8	90	52,19,34	
Celestion 3 MKII	139	-	88	8	75	21,31,18	Integrated LF/baffle moulding
Celestion MP1	149	-	90	8	150	22,30,15	
Celestion CS2	149	-	86	8	60	16,29,22	
Celestion CS4	169	-	87	8	75	18,33,23	
Celestion Centre 2	179	-	90	8	100	17,16,42	Centre channel
Celestion 5 MkII	189	-	89	8	90	25,35,21	Larger version of Celestion 3
Celestion 7 MkII	239	-	89	8	120	31,45,24	
Celestion 9	269	-	89	8	100	21,50,25	
Celestion 11	299	-	89	8	120	31,57,24	
Celestion 15	389	-	89	8	100	21,100,25	
Celestion SL6Si	429	2x	84	8	120	20,38,27	Compact stand mount, free spac
Celestion CS6i	449	-	90	8	100	19,85,31	
Celestion CS8i	499	-	90	8	120	19,100,31	
Celestion 100	539	-	84	8	120	21,42,26	
Celestion SL600Si	820	-	82	8	120	20,37,24	Aeroliam lightweight enclosure
Celestion 300	1099	-	84	8	120	21,97,33	
Celestion 700SE	1435	-	82	8	120	20,37,24	Aeroliam lightweight enclosure
Cerwin Vega VS8	250	2x	94	6	100	28,51,29	Bookshelf
Cerwin Vega SAT-6	300	Sat/sut	95	-	125	22,25,32	3 box satellite/subwoofer
Cerwin Vega VS10	350	3x	95	6	125	33,70,29	Floor standing
Cerwin Vega VS12	550	3x Pt	97	4	250	42,81,38	Floor standing
Cerwin Vega DC10	550	3x Pt	96	-	200	29,94,35	Floor standing
Cerwin Vega DC12	650	3x Pt	98	-	300	36,98,35	Floor standing
Cerwin Vega VS15	700	3x Pt	102	4	400	46,90,47	Floor standing
Cerwin Vega DC15	850	3x Pt	100	-	500	44,103,46	Floor standing
Cerwin Vega 1515	1300	6x Pt	103	4	600	44,135,46	Floor standing, hi sensitivity
Chord Sys Audio 905	249	2x	89	8	70	27,15,19	Black Ash
Clements 300Si	395	-	89	4-8	90	24,36,36	Compression line
Clements 600Si	595	-	88	4-8	100	24,81,36	Compression line
Clements Reference 1	995	-	86	8	100	20,43,29	Ribbon tweeter
Clements Reference 7	1995	-	88	4.5	200	25,114,4	Ribbon tweeter
Dali 102B	260	-	88	6	100	21,32,26	
Dali 104B	370	-	93	4	120	86,22,27	
Dawn Audio Chorus BS	482	2x IB	89	8	-	26,38,21	Bookshelf
Dawn Audio Forum FS	698	2x IB	89	8	-	26,88,21	Floor standing
Dawn Audio Symphony	1995	3x IB	91	8	-	34,113,32	Floor standing
Denon SCM2	80	IB	87	6	70	19,28,20	UK designed & built
Denon SC-E313	160	Pt	88	8	100	22,75,23	UK designed & built
ECA SERVO A.2	1850	2x Pt	80	8	150	22,102,30	True ribbon tweeter
Epos ES11	395	Pt	87	8	75	20,38,25	Free space, stand mount
Epos ES14	595	Pt	87	8	100	23,49,29	Free space, stand mount
Epos ES25	1505	3xPt	88	6	200	90,24,35	Floor standing
Faraday SG	345	2x	89	4	75	27,26,25	Matt black or granite effect
Faraday Siren	445	2x	90	4	80	27,25,46	Matt black or granite effect
Faraday FS10	795	3x	91	4	100	27,25,93	Matt black or granite effect
Fullers Sultan	399	2xPt	91	8	50	24,51,30	3 finishes
Fullers Sultan H.E.	439	2xPt	98	8	90	24,51,30	High sensitivity, 3 finishes
Fullers Pharaoh 1	649	2xPt	88	8	60	20,30,20	Curved sides, various finishes
Fullers Sphinx	839	3x	89	8	70	25,91,30	Floor standing, var finishes
Fullers Pharaoh 2	1200	3xPt	88	8	80	39,100,31	Pharaoh 1 with added bass encl
Fullers Pharaoh 3	2499	4xPt	88	8	150	46,118,45	Pharaoh + bass & subbass encls
Gate Reference Monitors	100	2x	88	8	70	-	Bookshelf, black finish
Gate Model 2	150	2x	88	8	70	-	Bookshelf, black finish
Gate Model 4	200	2	88	8	75	-	Bookshelf, black finish
Gamma Acoustics Epoch	1499	-	-	-	-	27,95,36	
Genelec 1019A	1572	Active	-	-	28	23,31,25	
Genelec Blamp 1031A	2068	Active	-	-	104	25,39,29	
Genelec Triamp S30	3055	Active	-	-	108	32,50,32	
Genelec Triamp 1037A	4982	Active	-	-	191	40,68,30	
Genexa GX330	80	-	-	6	50	35,21,24	
Genexa GX650	140	-	90	8	60	23,76,26	
GLL Arena	89	-	87	6	70	26,23,14	
GLL Maxim	119	-	86	6	100	10,26,17	
GLL Mezzo	159	-	88	6	100	21,36,25	
GLL Magnum	199	-	86	6	100	25,42,29	
Goodmans Active 75	65	Active	-	-	80	-	
Goodmans M100	80	2x	86	8	75	17,26,20	Bookshelf, close to wall
Goodmans HT100	100	-	86	8	60	25,53,20	
Goodmans HT170	150	-	92	8	100	25,70,22	
Grundig MBX310	80	3xPt	-	4	70	18,42,29	3 drivers, 2 way
Grundig BX1	160	2x Pt	-	4	60	23,40,30	16 litre
Grundig BX2	230	3x Pt	-	4	80	24,49,33	22 litre
Grundig BX3	3						





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Model	Price	Type	Sens	Impedance	Power	Size	Special
<b>LOUDSPEAKERS</b>							
Heybrook Prima	139	2xPt	87	6	60	20,29,18	Bookshelf or stands, shielded
Heybrook Solo	199	2x	89	6	75	23,36,23	Boundary, shielded
Heybrook HB1	269	2x	90	8	75	29,47,23	Boundary, shielded option
Heybrook Trio	373	2x	89	8	75	24,47,25	Shielded option
Heybrook Heystak	499	3xABR	89	8	100	98,22,28	Inc stands
Heybrook Quartet	575	2xPt	90	8	80	24,41,22	Matching stands available
Heybrook Sextet	1129	3xPt	88	8	200	27,90,20	With stands
Impulse Kora	1095	Horn	88	8	70	1,86,31	Floor standing
Impulse Lali	1595	Horn	91	8	100	25,99,36	Floor standing
Impulse Ta'us	2695	Horn	94	8	100	31,121,49	Floor standing
Infinity SM65	150	Pt	94	8	100	34,20,19	Auto reset protection circuit
Infinity Reference 11	150	IB	89	6	50	34,20,20	Pedestal
Infinity Reference 11i	200	IB	-	6	75	39,22,34	Pedestal
Infinity SM85	250	Pt	98	8	125	46,29,27	Auto reset protection circuit
Infinity Reference 21i	300	-	-	-	-	-	Floor standing
Infinity Inf IV Sat	300	IB	90	6	80	16,24,18	Wall mount, shielded
Infinity SM105	350	Pt	100	8	150	53,30,30	Auto reset protection circuit
Infinity Inf Micro II	400	Pt/sub	90	6	100	21 x 127d	Two satellites and passive sub
Infinity SM115	450	3xPt	100	8	175	76,34,32	Auto reset protection c
Infinity SSW-10 Sub	500	Active	-	-	-	34,34,33	
Infinity SM125	550	3xPt	100	8	200	89,37,32	Auto reset protection circuit
Infinity SM155	650	4xPt	102	8	300	102,45,32	Auto reset protection circuit
Infinity Kappa 6.1i	995	Pt	89	6	150	31,95,25	Floor standing
Infinity Kappa 7.1i	1195	Pt	89	6	225	36,108,26	Floor standing
Infinity ARS Epsilon	9995	IB	87	4	500	152,47,41	Includes own servo control amp
Interaudio XL1000	100	-	-	8	50	19,29,17	
Interaudio XL2000	140	-	-	8	70	23,36,18	
Interaudio XL3000	160	-	-	8	70	29,46,23	
Interaudio XL4000	200	-	-	8	75	32,56,29	
Jamo Studio 80	60	2xPt	91	4	45	22,35,17	
Jamo Studio 110	100	3xPt	91	4	50	24,42,22	
Jamo Sat 160	100	2x IB	90	8	50	14,20,88	Shelf/wall mount, with wall br
Jamo D115	100	-	91	4-8	75	24,42,22	
Jamo Cornet 30.4	100	2x Pt	88	8	55	20,32,23	Black ash - Mahogany £20 extra
Jamo Sat 200	110	2x	90	8	50	15,22,88	Stereo passive sub
Jamo Sat 300	120	2x	90	8	50	15,21,8	Use with SW500
Jamo Cornet 40.4	140	2x Pt	89	8	60	20,32,23	Black ash - Mahogany £20 extra
Jamo Studio 180	150	3xPt	92	4	80	22,50,26	
Jamo Artina	150	2xPt	90	8	50	29,25,8	Small, flat wall speaker
Jamo Sat 500	150	2x Pt	90	8	50	16,21,14	Satellites for SW500
Jamo D135	150	-	94	4-8	90	28,52,25	
Jamo Converta	150	2x Pt	90	8	50	9,25,24	Lamp-like appearance
Jamo Cornet 60.4	180	2x Pt	90	8	80	23,42,27	Black ash - Mahogany £20 extra
Jamo D165	190	-	94	4-8	100	28,52,25	
Jamo SW160 System	200	-	90	8	-	20,34,48	Subwoofer, adjustable
Jamo Art	200	2x Pt	88	8	60	35,40,9	Shape and size of shallow 20 l
Jamo Classic 4	230	2xPt	90	4	100	20,47,25	
Jamo D265	300	3xPt	95	4	150	44,68,32	
Jamo Classic 6	300	2xPt	90	4	100	20,84,29	Inc spiked feet
Jamo BX100A	300	3xPt	91	8	100	32,55,28	Floor or stand mount
Jamo 307	300	2x Pt	87	6	70	18,31,27	Stand mount
Jamo Cornet 90-4	330	3xIB	91	4	140	26,87,27	
Jamo 407	350	2x Pt	88	4	80	22,41,29	Stand mount
Jamo Graphic	350	2x Pt	88	8	60	39,44,8	Wall mount
Jamo Atmosphere	380	2x Pt	88	8	60	27,37,16	Wall mount, doubles as lamp
Jamo Cornet 100-4	400	3xIB	91	4	200	32,95,27	
Jamo Classic 8	400	3xPt	90	4	150	23,90,29	Inc spiked feet
Jamo Silhouette	400	-	90	5	80	25,122,17	
Jamo D365	400	-	96	4-8	200	46,78,35	
Jamo BX150A	400	3x Pt	92	8	150	38,63,31	Floor mount
Jamo SW500 System	430	2x	90	8	140	41,38,53	Passive stereo subwoofer
Jamo BX200A	450	3x Pt	93	8	250	29,17,13	Floor mount
Jamo 477	500	2x Pt	88	4	100	19,77,29	Floor standing
Jamo 507	700	3x Pt	88	4	150	22,91,37	
Jamo 707	900	3x Pt	90	4	200	24,104,39	
Jamo Oriel	6000	3x	87	6	300	40,178,30	Floor standing, coupled cavity
JBL Control One	115	2xPt	87	4	150	24,156,14	Shielded, wall mountable
JBL 4208	449	-	89	8	300	29,45,23	
JBL L1	479	2x Pt	87	8	200	25,40,20	Asymmetric, time aligned
JBL HTS-1	629	-	-	150	-	-	
JBL L3	699	2x Pt	89	8	200	30,86,24	Asymmetric, time aligned
JBL HTS-2 system	800	-	-	4	150	-	
JBL HTS-3	999	-	-	180	-	-	
JBL L5	1299	3x Pt	90	6	300	26,45,33	Asymmetric, time aligned
JBL Ti 1000	1500	2x IB	89	4	150	20,30,13	Asymmetric, double wall
JBL L7	1699	4x Pt	89	4	200	117,25,45	Asymmetric, time aligned
JBL Ti 2000	2000	3x IB	89	4	200	33,82,30	Asymmetric, double wall
JBL Ti 3000	2499	3x IB	90	6	200	46,105,35	Asymmetric, double wall
JBL i 5000	3499	3x IB	91	6	300	48,114,38	Asymmetric, double wall
Jordan Watts JHFLG	420	-	-	-	-	-	Flagon pottery colour
Jordan Watts JH200	510	1x IB	86	8	80	19,33,17	Bookshelf or stand mount
Jordan Watts JH400	820	1x IB	86	8	80	28,32,17	Marble finish available £970
Jordan Watts JH400M	970	1x	86	8	80	82,28,21	
J Watts JH1+1 Aspect	1730	2x	85	8	100	92,40,22	
J Watts JH1+1 Aspect K	2310	2x	85	8	100	92,40,22	

Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory.

Audiolab 8000A	450	Int	N	60	MM,MC,1T,3T	Y	N	45,8,36	Preout/main in
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<b>LOUDSPEAKERS</b>							
J Watts JH1+1 Aspect M	2745	2x	85	8	100	92,40,22	
J Watts Aspect JH1+1	2745	2xIB	85	8	100	40,93,23	Matt - alt finishes extra
Jordan Watts JH2K	3230	-	-	-	-	-	
J Watts Classic JH2KM	4250	2x	87	8	150	47,82,34	Line tweeter array
J Watts Classic JH5K	4875	2x IB	89	8	250	47,126,40	Floor stand, line array
J Watts Classic JH5KM	5860	2x	89	8	250	47,125,40	Line driver array
J Watts Classic JH10K	9340	2x IB	92	8	500	47,156,40	Floor stand, line array
Jordan Watts JH10KM	10495	2xIB	92	8	500	47,156,40	Line driver array
JPW Minim SGL SHD	50	2x	87	6	70	19,28,20	Shielded, single speaker
JPW Satellite SGL SHD	50	2x	85	8	70	13,24,11	Shielded, single speaker
JPW Satellite	80	2x	85	8	70	13,24,11	Shielded, single speaker
JPW Minim	80	2x	87	6	70	19,28,20	135mm bass, 14mm treble
JPW Minim Pair Solid	89	2x	87	6	70	19,28,20	Shielded
JPW Sonata Vinyl	100	2x	87	8	70	23,32,22	
JPW Sonata	120	2x	87	8	70	23,32,22	165mm bass, 14mm treble
JPW Subwoofer	130	1x	95	8	80	26,51,27	
JPW P1 Vinyl	150	2x	89	8	70	26,44,25	
JPW P1	170	2x	89	8	70	26,44,25	200mm bass, 19mm treble
JPW AP2	200	2x	89	8	80	26,44,25	200mm bass, 19mm treble
JPW AP3	230	2x	88	8	100	26,52,29	200mm bass, 19mm treble
JPW Ruby 1	500	2x	87	6	120	32,19,21	Alloy cones
JPW Ruby 2	700	2x	88	6	150	43,22,25	Alloy cones
JPW Ruby 3	1000	3x	87	6	150	75,19,22	Alloy cones
JPW Ruby 4	1300	3x	89	6	200	90,22,26	Alloy cones
JVC SPX220TBK	100	3x Pt	90	8	60	24,66,24	
JVC SPX550BK	130	3x Pt	90	8	60	24,66,24	
JVC SPX770BX	150	3x Pt	90	8	80	28,75,25	
JVC SPX990BK	230	3x Pt	91	8	100	31,86,27	
JVC SX-SW9	300	2xPt	90	6	100	-	Satellite subwoofer system
JVC SX911WD	660	3x Pt	91	6	150	38,63,35	
JVC SX500	700	2x Pt	90	6	180	27,45,28	
KAL Mini-Ref MkII	395	-	86	8	120	23,27,17	
KAL Mini-Tower	619	-	89	6	150	17,90,22	
KAL Compact Ref	650	-	89	8	140	23,36,27	
KAL Tunejal	795	-	89	8	150	23,100,27	
KAL Trans-double	1500	-	89	8	250	23,112,36	
KAL Warlock	1600	-	90	6	250	25,113,36	
KEF Q10	199	2x Pt	88	6	100	19,32,26	Uni Q, shielded
KEF 70S	299	2xIB	87	6	100	17,25,12	Uni-Q, shielded, AV surround
KEF Q30	349	2x Pt	88	6	125	19,73,30	Uni Q, shielded, floor standin
KEF 101/3 Black	549	2x Pt	87	6	150	22,33,26	Uni-Q, Kube option
KEF LS3/5a	599	2xIB	82	11	30	19,30,16	Raymond Cooke Special Edition
KEF Q70	699	4xPt	90	6	175	19,105,30	Uni-Q, shielded, floor stand
KEF Model One	999	3xCC	89	4	150	23,86,30	Uni-Q, floor stand, shielded
KEF Model Two	1499	4xCC	90	4	200	23,101,30	Uni-Q, floor stand, shielded
KEF 104/2 REC	1799	5xCC	92	4	200	28,90,41	Raymond Cooke Special Edition
KEF Model Three	1999	5xCC	91	4	300	27,114,34	Uni-Q, floor stand, shielded
KEF 107/2 REC	3999	4xCC	90	4	300	33,116,45	Raymond Cooke Special Edition
Kenwood LS-200G	200	Pt	89	4	60	21,35,30	European design
Kenwood LS-770G	260	Pt	88	4	110	27,48,26	European design
Kenwood LS-300G	300	Pt	82	8	60	21,35,30	European design
Kenwood LS-880G	360	Pt	86	4	160	28,51,26	Titanium tweeter
Kenwood LS-500G	500	Pt	87	4	100	22,44,28	European design
Kenwood LS-700G	1200	Pt	87				





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<b>LOUDSPEAKERS</b>							
Magnepan MG-0.6 SE	1370	PANEL	87	4	250	48,127,-	2x quasi-ribbon
Magnepan MG-1.0 SE	1650	PANEL	85	4	250	26,173,-	2x quasi-ribbon
Magnepan MG-1.5 SE	1780	PANEL	85	4	250	48,163,-	2x quasi-ribbon
Magnepan MG-2.7 SE	2650	PANEL	87	4	250	56,180,-	3x quasi-ribbon
Magnepan MG-3.5 SE	3800	PANEL	85	4	250	61,180,-	3x planar, ribbon tweeter
Magnepan MG-20 SE Passive	1030	PANEL	87	4	250	74,201,-	3x planar, ribbon tweeter
Magnepan MG-20SE Active	11000	PANEL	-	-	-	74,201,-	Active MG-20SE Passive
Manticore Minaret	450	IB	94	8	100	23,15,11	Nearfield monitor
Manticore Minaret F1	750	IB	94	8	100	23,15,11	Nearfield monitor
Manticore Matisse	1300	IB	90	8	200	100,28,22	Fibre/ram honeycomb cabinets
Martin-Logan Statement	0	Hybrid	87	-	-	23,140,10	ESL/dynamic, biwire,
Martin-Logan Aeriuss	2288	Hybrid	89	-	-	23,122,30	Two-way
Martin-Logan Stylos	2495	Hybrid	2x	88	-	23,35,28	In wall
Martin-Logan Sequel II	3277	Hybrid	89	-	-	31,160,29	Dynamic bass/electrostatic, tw
Martin-Logan CLS Iuz	4333	ESL	86	-	-	62,127,32	Full range panel
Martin-Logan Quest Z	4998	Hybrid	90	-	-	42,160,29	Dynamic bass/electrostatic, tw
M-L Monolith III P	8730	Hybrid	89	-	-	59,163,28	ESL/dynamic, two-way
M-L Monolith III X	9354	Hybrid	89	-	-	59,163,26	ESL/dynamic, active crossover
Metaxas Empress	3850	ESL	88	8	100	50,150,8	Full range single panel ESL
Metaxas Czar	8250	ESL	94	8	100	70,230,8	Full range 3-panel ESL
Metaxas Emperor	19500	ESL	99	8	250	100,230,8	Full range, multi-panel ESL
Mission 73S	100	2x Pt	89	8	50	15,26,15	Stand mount, shelf, w/brackets
Mission 731	130	2x Pt	89	8	75	31,17,20	Stand mount, bookshelf
Mission 760i	130	2x Pt	89	6	75	18,30,20	Stand mount, boundary siting
Mission 73C	150	2x	90	8	75	16,20,43	TV top, shielded
Mission 760i SE	150	2x Pt	89	6	75	18,30,20	Stand mount, boundary siting
Mission 732	200	2x	89	8	100	41,21,31	Stand mount, boundary
Mission 780SE	270	2x pt	89	6	75	18,30,26	Stand mount, boundary siting
Mission 733	300	2x	89	8	100	84,21,31	Floor standing, boundary
Mission 751	300	2x Pt	89	6	75	19,32,27	Stand mount, boundary
Mission 734	430	3x	90	8	125	84,21,33	Floor standing, boundary
Mission 752	500	2x Pt	90	8	125	20,84,26	Floor stand, boundary
Mission 735	600	3x	90	8	150	106,21,33	
Mission 753	700	2x Pt	90	6	150	21,88,32	Floor stand, transverse folded
MA Monitor 1 Gold	200	2x IB	88	8	70	16,24,16	Miniature stand/shelf mount
MA Monitor 7 Gold II	245	2x Pt	89	8	70	17,35,17	Stand/shelf mount
Monitor Audio MA100G	280	2x IB	89	8	120	16,24,16	As MA Monitor 1, shielded
Monitor Audio MA201	300	2x Pt	90	8	100	22,41,27	Gold dome tweeter, pulp bass
MA Monitor 9 Gold II	350	2x Pt	88	8	100	21,37,21	Stand/shelf mount
Monitor Audio MA202	450	2xPt	90	8	100	22,89,29	Gold dome tweeter, pulp bass
MA Monitor 14 Gold II	500	3x	88	8	120	21,76,24	Floor/shelf standing
Monitor Audio Studio 2	600	2x	89	8	120	27,17,20	
Monitor Audio Studio 6	900	2x Pt	88	8	200	22,35,25	Stand/shelf mount, metal bass
Monitor Audio Studio 12	1000	2	90	8	200	92,17,20	Black - rosewood extra
MA Studio 20SE	2200	2x Pt	88	8	200	20,92,26	Floor stand, metal cone bass
Monitor Audio Studio 50	4000	2x	90	8	300	20,104,30	Floor stand, metal bass & mid
M-S CS-1 Dialogue	60	2xPt	87	8	100	16,23,13	Shielded, Positec protected
Mordaunt-Short M505	110	Pt	87	8	60	26,17,18	Bookshelf, wall positioning
M-S CS1 Stereo	115	Pt	87	8	100	16,23,13	Shielded, Positec protected
Mordaunt-Short MS10	140	Pt	88	8	60	19,31,22	Alloy tweeter, MCS woofer
Mordaunt-Short HT30	150	Pt	90	8	120	25,43,29	Shielded, Positec protected
Mordaunt-Short SW1	150	Sub	90	8	100	24,58,26	Coupled cavity, matches CS1
Mordaunt-Short MS20	190	Pt	89	8	75	22,37,22	Alloy tweeter, MCS woofer
M-S CS-1 Triple	200	2xPt	87	8	100	16,23,13	Shielded, Positec protected
Mordaunt-Short MS30	270	Pt	90	8	100	25,43,28	Alloy tweeter, MCS woofer
Mordaunt-Short HT50	275	Pt	90	8	120	25,87,33	Positec, integrated subwoofer
Mordaunt-Short MS40	400	Pt	90	8	150	23,82,28	Alloy tweeter, MCS woofer
Mordaunt-Short MS50	530	Pt	90	8	200	25,87,33	Alloy tweeter, MCS woofer
NAD 800	149	Pt	90	6	60	20,32,24	10 litre enclosure
NAD 802	219	Pt	90	6	80	20,40,26	11.5 litre enclosure
Naim IBL Active	776	-	-	-	65	25,80,28	Boundary, floor standing
Naim IBL Passive	895	-	86	6	65	25,80,28	Boundary, floor standing
Naim SBL Active	1586	-	-	-	75	27,89,27	Boundary, floor standing
Naim SBL Passive	1708	-	88	6	75	27,89,27	Boundary, floor standing
Naim DBL Active	6991	-	-	-	200	65,120,40	Boundary, floor standing
Naim DBL Passive	7672	-	92	4	200	65,120,40	Boundary, floor standing
Neat Petite	595	2x	87	6	100	20,30,18	
Orelle Orator II	699	2xPt	91	8	100	27,40,30	Time aligned, biwire
Origin Live OL1B	289	-	89	8	100	20,30,19	
Origin Live OL2B	349	-	90	8	150	19,80,19	Floor standing
Origin Live OL-1AS	399	-	89	8	199	20,30,190	Floor standing
Origin Live OL-1A	399	-	86	8	150	20,30,19	
Origin Live OL-2AS	469	-	90	8	100	19,80,19	Floor standing
Origin Live OL-2A	469	-	86	8	150	19,80,19	Floor standing
Origin Live OL-1	499	-	86	8	150	20,30,19	
Origin Live OL-2	649	-	86	8	150	19,80,19	Floor standing
Origin Live OL3	975	3x	88	8	150	19,83,23	Floor standing
Origin Live Conqueror	1600	3x	89	8	150	23,87,23	Floor standing
Pentachord A	449	IB	87	8	80	21,28,20	Direct coupled
Pentachord B	499	IB	87	8	80	52,35,52	Active crossover, including el
Pentachord Pentacore	695	IB	87	4	80	20,74,20	Active crossover, including el
Pentachord P'column	1579	2xIB	87	4	80	21,108,20	Including active crossover, fo
Philips Legend FB720	200	Pt	80	7	75	21,37,31	
Philips DSS930	1300	Active	-	-	75	-	Active digital loudspeaker
Pink Triangle Vertical	865	Hybrid	86	11	100	15,80,32	Ribbon hybrid
Pioneer CS-3030	120	3x Pt	90	8	120	27,54,24	Bookshelf
Pioneer CS-5030	170	3x Pt	90	8	140	31,53,25	Bookshelf



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<b>LOUDSPEAKERS</b>							
Pioneer S-4UK	250	2x Pt	88	6	80	21,37,28	No crossover, UK optimised
Pioneer S-60	270	2x	87	4	80	22,47,28	Bookshelf
Pioneer CS-9030	280	3x Pt	92	8	220	39,75,29	Bookshelf
Pioneer S-80	370	2x	88	4	80	23,56,28	Bookshelf
Pioneer S-200	600	2x	89	4	120	26,90,34	Biwire, floor standing
Pioneer S-400	950	2x	89	4	160	27,96,38	Biwire, floor stand, shielded
Poik S4	200	2x Pt	91	8	100	24,39,18	Stand mount, free standing
Poik M3	200	2x Pt	89	8	100	17,29,21	Multi-app, including wall brac
Poik S6	300	2x ABR	91	8	125	26,54,20	Stand mount
Poik S8	450	2x ABR	90	8	150	29,64,22	Stand mount
Poik S10	600	2x ABR	91	8	200	32,74,26	Floorstanding
Poik LS50	800	2x Pt	89	8	250	27,83,29	Floorstanding
Poik LS70	1200	2x Pt	90	8	250	31,94,37	Floorstanding, biampable
Poik LS90	1700	3x Pt	90	8	250	31,94,37	Floorstanding, biampable
Posselt Alpha I	950	Pt	89	8	60	24,44,28	
Posselt Alpha II	1200	Pt	89	8	90	23,100,27	
Posselt Alpha III	1350	Pt	89	8	100	26,102,30	
Posselt Alpha IV	1500	Pt	89	8	135	27,104,31	
Posselt Albatros	2200	Hrn	93	6	200	31,186,32	Ultra sensitive
Proac Tablet 3	479	-	87	8	100	17,28,23	Stand mount
Proac Studio 100	699	-	87	8	150	20,40,25	Stand mount
Proac Tablette 3 Sig	779	-	87	8	100	16,28,23	Stand mount
Proac Response One S	999	-	87	8	100	18,30,23	
Proac Response Two	1634	-	88	8	150	23,45,28	
Proac Studio 200	1850	-	89	8	250	23,115,28	Floor standing
Prof Monitor Co TB1	481	2x Pt	90	8	150	20,40,25	Shielded version available
Prof Monitor Co LB1	998	2x	89	4	300	18,53,25	Transmission line
Prof Monitor Co AB1	1598	2x	89	6	400	26,79,43	Transmission line
Prof Monitor Co MB1P	4681	2x	91	8	500	38,87,53	Transmission line
Prof Monitor Co BB5P	6754	2x	91	4	600	43,104,79	Transmission line
Quad ESL-63	2860	ELS	86	8	100	66,93,27	Panel, simulates point source
Realistic Minimus 3.5	30	-	-	-	8	15	9,15,5
Realistic Minimus 21	30	-	-	-	8	10	15,24,13
Realistic M' mus 26	56	-	87	8	40	18,28,11	
Realistic Minimus Pro-7	60	2xPt	87	8	50	11,18,11	Revised design
Realistic Minimus Pro-77	100	2xPt	86	8	55	14,22,11	Revised design
Rega Kyte	198	2x	87	8	-	19,31,19	Stand/wall/shelf mount
Rega EL8	298	2x	-	-	-	17,72,20	Floor stand
Rega ELA Mk II	498	2x	-	-	-	30,80,20	Floor stand
Rega XEL	1040	2x	-	-	-	20,82,30	Floor stand
Rehdeko RK115	1200	Pt	104	8	-	34,42,28	
Rehdeko RK125	2300	Pt	102	8	-	34,61,28	
Rehdeko RK145	3400	Pt	102	8	-	39,66,29	
Rehdeko RK175	6500	Pt	106	8	-	50,96,37	
REL Strata	499	Sub	-	-	1kw	42,52,31	Active, internal amp
REL Stadium	795	Sub	-	-	1kw	58,52,36	Active, internal amps
REL Stentor	1495	Sub	-	-	1kw	60,56,37	Active, internal amp
REL Studio	2995	Sub	-	-	1kw	69,62,53	Active, internal amp
Revolver by Ram Beretta	100	2xPt	87	6	80	30,19,22	Bookshelf/stand mount
Revolver by Ram Colt	149	2xPt	88	6	100	30,19,22	Bookshelf/stand mount
Revolver by Ram Purdey	249	2xPt	88	6	120	75,19,22	Floor stand, with plinth
Rogers LS1	199	2x</					





Key to loudspeakers  
Price - typical retail, to nearest pound.  
Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, U - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic bass/ESL or ribbon top.

Sens - output at given power input level.  
Impedance - in ohms. Power - maximum recommended amplifier output.  
Size - width x height x depth in cm.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to receivers  
Price - typical retail, to nearest pound.  
A/V - minimum requirements - Dolby Surround/Pro-Logic circuitry.  
Power - watts/channel, both channels driven RMS 8ohms, 2ohl - 2okHz.  
Wavebands - FM, L - long wave, M - medium wave.  
Presets - number thereof.  
In/outputs - MM/MC - moving coil/moving magnet, L - line, T - tape, V - audio input or tape circuit with video signal routing.

Remote - control.  
Size - width x height x depth in cm.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Sens	Impedance	Power	Size	Special
<b>LOUDSPEAKERS</b>							
Shahinian Obelisk	2490	3x	89	6	200	37,74,32	Omni-directional
Shahinian Hawk	4950	3x	90	6	250	43,95,32	Modular omni-directional
Shahinian Diapason	8350	5x	91	6	300	58,100,38	Omni-directional, floor stand
Sonus-Faber Minuetto	898	2x	88	-	-	23,35,28	Compact, stand mount
Sonus-Faber Minima Amator	1498	2x	88	-	-	20,34,31	Compact, stand mount
Sonus-Faber Electa	1790	2x	88	-	-	38,27,24	Compact, stand mount
Sonus-Faber Amator	2992	2x	88	-	-	37,22,35	Compact, stand mount
Sonus-Faber Guarneri	5500	2x	88	-	-	19,38,38	Compact, limited edition
Sonus-Faber Extrema	5991	2x	88	-	-	55,27,46	'Reference Standard'
Sony SS-E300	50	IB	88	8	160	73,41,20	Magnetically shielded
Sony SS-V77	50	-	90	16	-	19,9,14	Full range surround speakers
Sony SS-E500	80	IB	88	8	120	35,47,20	Magnetically shielded
Sony SS-J90AV	100	-	-	167	-	19,12,15	Shielded centre speaker
Sony SS85E	100	IB	85	4	70	9,32,24	UK optimised sound
Sony SS125E	120	IB	86	4	90	22,38,38	UK optimised sound
Sony SA-W90	350	-	-	70	-	22,49,51	Active subwoofer
Sony SSA1L	450	IB	85	4	120	19,30,32	Bio-cellulose tweeters
Sound-Lab Dynastat	3790	Hybrid	88	8	350	44,183,41	Oak or walnut finish £3990
Sound-Lab Pristine II	6990	ESL	88	8	300	72,153,69	Steel frame, curved panel
Sound-Lab A3	11990	ESL	88	8	300	78,187,23	Any finish, curved panel
Sound-Lab A1	13990	ESL	88	8	400	91,208,27	Curved panel, any finish
Spendor SP2/3/5A	630	2x	83	8	40	19,30,16	BBC inspired location monitor
Spendor S20	760	-	84	8	70	22,38,26	On stands, free space
Spendor SP3/1	890	2x	85	8	70	40,22,25	Stand mount, free space
Spendor SP2/3	1100	2x	88	8	80	28,55,33	On stands, free space
Spendor SP1/2	1430	3x	89	8	90	30,63,30	Stand mount, free space
Spendor SP7/1	2000	2x	89	8	100	85,30,35	Floor standing
Spendor SP100	2230	3x	90	8	100	37,70,43	Classic monitor, free space
Spendor SP9/1	3300	3x	90	8	125	106,37,44	Floor standing monitor
Spica TC50	649	IB	86	4	50	33,39,29	Free space, on stands
Spica TC50SE	849	IB	86	4	50	33,39,29	Free space, on stands
Spica TC50SEX	949	IB	86	4	50	33,39,29	Free space, on stands
Spica Angelus	1295	IB	87	8	200	53,117,26	Free space, floor standing
Tannoy 631	149	2xPt	87	6	70	19,34,15	Advanced 'silent' enc
Tannoy 632	189	2xPt	88	8	90	51,43,27	
Tannoy 633	319	3xIB	89	8	100	29,75,28	
Tannoy Subsat3	399	3xPt	88	8	120	11,16,9	Subsat system with ICT tech
Tannoy 636	419	3xIB	90	6	120	29,75,28	
Tannoy 637	499	3xIB	91	6	150	33,86,32	
Tannoy 625	595	Active	-	-	90	58,49,45	Servo, current drive subwoofer
Tannoy 638	599	3xPt	91	6	175	33,96,32	
Tannoy D100	649	2xPt	89	8	120	25,36,22	6.5 inch Dual Concentric
Tannoy D500	1470	3xPt	91	6	175	31,93,34	8 inch Dual Concentric
Tannoy Sterling TW	1750	2x	93	8	150	48,70,31	
Tannoy D700	2100	3xPt	93	6	200	37,99,36	10 inch Dual Concentric
Tannoy Edinburgh TW	2700	2x	95	8	180	66,102,42	
Tannoy GRFM TW	3500	2x	95	8	200	80,100,48	
Tannoy Cantebury 12^	5500	2x	94	8	200	58,90,43	
Tannoy Westminster TW	6000	2x	99	8	200	-	
Tannoy Canterbury 15^	7000	2x	96	8	250	68,110,48	
Tannoy Westminster Royal	13500	2x	99	8	200	98,139,56	
TDL NFM2-S	100	2x	90	8	100	18,45,17	Priced for single speaker
TDL Near Field Monitor	120	2x	88	8	70	18,30,17	
TDL NFM2	180	3x	88	8	100	18,45,17	
TDL RTL2	300	2x	87	8	80	20,73,22	Reflex transmission line
TDL RTL3	400	3x	90	8	120	20,90,37	Reflex transmission line
TDL Studio 0.5	499	2x	85	8	75	20,62,30	Transmission line
TDL Studio 1	699	2x	86	8	120	23,77,33	Transmission line bass
TDL Studio 0.75m	749	2x	85	8	100	29,67,31	Metal drive units, TLS
TDL Studio 1m	899	2x	86	8	120	23,77,34	Metal drivers, TLS
TDL Studio Monitor M	2449	3x	87	8	350	30,119,47	TLS, metal drivers, int stands
TDL Ref Standard-M	4999	7x	89	8	500	56,121,50	Dual TLS, metal drivers
Teac LS-X8	80	2x	-	8	30	11,18,11	In black or white
Teac S-W1	120	Sub	-	6	100	17,44,30	Coaxial, shielded
Teac S-300	150	2xPt	-	6	100	17,24,17	
Technics SB-CS55	80	2xPt	-	8	60	25,43,25	Shelf/stand, shielded
Technics SB-CS75	100	3xPt	-	8	60	27,49,25	Composite mica cone mid
Technics SB-CS95	150	3xPt	-	8	100	29,54,25	Composite mica cone mid
Technics SB-EX2	200	2xPt	84	4	100	24,48,29	Composite mica cone mid
Technics SB-EX3	250	3xPt	84	4	125	24,60,29	Mica diaphragms, separate LF b
Technics SB-EX7	450	3xPt	84	4	180	29,85,32	Mica diaphragms, separate LF b
Technics SB-MX100D	2000	2xPt	86	6	100	23,47,34	Floor standing, separate LF ba
Technics SB-MX200D	4000	3xPt	88	4	125	35,91,43	Mica bass/tweeter
Totem Model One	995	Pt	87	4	120	17,31,23	
Triangle Titus TZe	325	-	90	8	75	20,25,32	
Triangle Comete TZe	475	-	91	8	100	22,28,40	Suits low powered valve amps
Triangle Antal	899	-	92	8	150	22,102,30	
Triangle Alcante	999	-	92	4	200	22,100,22	Suits low power valve amp
Triangle Zays	1299	-	92	8	250	99,22,28	
Triangle Altins	1850	-	90	8	300	104,22,22	
Triangle Altair	2450	-	92	4	300	35,120,30	Proprietary tweeter
Triangle Octant Txe	3750	-	94	4	300	42,150,19	Ultra high sensitivity
UKD Opera Prima	450	Pt	88	8	75	20,33,25	Solid walnut, stand mount
UKD Opera Seconda	550	Pt	88	8	100	23,35,34	Solid walnut, stand mount
UKD Operetta	660	Pt	87	8	70	22,30,26	Solid walnut, stand mount
UKD Callas Mahogany	750	Pt	88	8	120	34,22,32	Solid mahogany, stand mount
UKD Super Pavarotti	875	Pt	88	8	150	23,55,23	Solid mahogany, stand mount
UKD Callas Walnut	895	Pt	87	6	150	34,22,32	Solid walnut, floor stand

Model	Price	Type	Sens	Impedance	Power	Size	Special
<b>LOUDSPEAKERS</b>							
UKD Divina	1390	Pt	87	8	150	24,39,40	Solid walnut, stand mount
UKD Caruso	2250	Pt	88	8	200	22,97,28	Solid walnut, floor standing
Vandersteen 2Ce	1395	4x	88	7	160	41,101,27	Free standing, phase aligned
Visonic David 5001	132	-	-	4-8	50	10,17,10	
Visonic Sub 4	154	-	-	4-8	100	36,49,31	
Visonic David 6001	163	-	-	4-8	60	13,20,12	
Visonic David 8001	228	-	-	4-8	80	16,25,17	
Wharfedale Centre Cube	49	Pt	87	8	75	14,13,12	Shielded centre speaker
Wharfedale Modus Cube	59	Pt	87	8	75	14,17,12	Shielded
Wharfedale CRS3	89	2xPt	89	8	100	22,38,17	Stand/bookshelf mount
Wharfedale Diamond 6R	109	Pt	89	8	100	16,27,22	Stand/bookshelf mount
Wharfedale Modus Micro	109	2xPt	86	8	75	14,23,12	Shielded
Wharfedale Modus Centre	119	Pt	87	8	75	46,14,12	Shielded centre speaker
Wharfedale Diamond V	129	Pt	87	8	100	18,26,20	Stand mount, near wall
Wharfedale CRS5	129	2xPt	89	8	140	26,48,20	
Wharfedale Modus Mini	139	ABR	86	8	75	14,39,12	Shielded two-way
Wharfedale Modus One	159	2xPt	89	8	100	22,41,29	Stand/bookshelf mount
Wharfedale Modus Sub-bass	179	Pt	88	8	200	57,23,38	Two channel double tuned sub-w
Wharfedale Modus Three	199	2xPt	90	8	100	22,57,29	Stand/bookshelf mount
Wharfedale CRS7	199	Pt	91	8	150	26,60,21	
Wharfedale Modus Five	259	3xPt	90	8	125	22,65,29	Stand/bookshelf mount
Wharfedale CRS9	299	Pt	93	8	160	31,80,28	Floor standing, three way
Wharfedale Modus Seven	339	3xPt	90	8	125	22,81,20	Floor standing
Wharfedale Modus One-Two	439	3xPt	90	8	150	22,109,29	Floor standing
Wilson X1 Grand Slam	0	3x	94	-	-	-	Three-way reference
Wilson WAP Puppy 5	5500	Sub	91	-	-	-	Passive sub for WATTS
Wilson WAP Puppy II	5600	Sub	91	-	-	-	Passive subwoofer for WATT
Wilson WATT III	7700	2x	91	-	-	27,31,36	
Wilson WHOW II	12500	Sub	98	-	-	88/65,36	Active subwoofer for WATT
Yamaha NS-C80	99	-	90	6	80	14,45,17	
Yamaha NS-E80	120	-	90	6	50	27,20,7	
Yamaha NS-C110	149	-	90	6	120	15,47,18	
Yamaha NS10M	250	-	90	8	100	21,38,20	
ZYP AI	199	IB	88	8	50	14,22,12	Wall mount
ZYP AI1T	219	IB	88	8	50	14,22,12	Magnetically shielded
ZYP A2S	299	2xIB	88	8	50	22,14,12	Studio nearfield monitor

Model	Price	A/V	Power	Wavebands	Presets	In/outputs	Remote	Size	Special
<b>RECEIVERS</b>									
B&O Beomaster 7000	920	N	75	FM,M,L	20	MM,2L,2T	Y	-	
Denon DRA-265R	200	N	35	FM,M	40	MM,2L,1T	Y	44,12,31	
Denon DRA-365RD	250	N	45	FM,M	40	MM,3L,1T	Y	44,12,32	System remote
Denon DRA-565RD	320	N	55	FM,M	40	MM,3L,2T	Y	44,12,32	RDS
Denon AVR-1000	520	Y	70	FM,M	16	MM,2L,2T	Y	44,15,33	Auto input balance
Dual CR900RS	200	N	55	FM,M,L	30	MM,4L,2T	Y	44,14,30	System component
Grundig R210	150	N	50	FM,M,L	59	MM,5L	Y	36,12,30	Gain switch, remote
Grundig R2	250	N	50	FM,M,L	59	MM,5L	Y	44,14,30	RDS, Radio text, remote
Harman-Kardon HK3300	379	N	20	FM,M	-	MM,3L,2T	Y	45,13,35	
Harman-Kardon HK3400	499	N	35	FM,M	-	MM,3L,2T	Y	45,13,35	
Harman-Kardon HK3500	699	N	50	FM,M	-	MM,4L,2T	Y	45,13,35	
Harman-Kardon HK3600	799	N	75						



# SEVENOAKS HI FI -



## DISPLAY & DEMONSTRATIONS

The moment you step through the door of a Sevenoaks Hi Fi branch you're going to be better looked after. With over 21 years experience in Hi Fi, Video and TV retail, we're here to make sure you get the equipment that best suits your needs and your budget. You'll find a wide range of products with the emphasis on quality rather than country of origin. Not only is everything we sell on display, but it's also available for demonstration. Each of our branches has dedicated demonstration facilities to help you enjoy choosing your equipment.

hi fi products



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#### MORDAUNT SHORT MS10 SPEAKERS

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# THE SPECIALIST

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Arcam Alpha 6	£ 329.95
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Arcam Delta 290 Inc remote	£ 479.95
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Aura VA100 II Black	£ 349.95
Audiolab 8000C - 94	£ 459.95
Audiolab 8000A - 94	£ 479.95
Audiolab 8000P - 94	£ 649.95
Audiolab 8000M - 94 (each)	£ 699.95
Audiolab 8000 PPA	£ 799.95
Audiolab 8000 Q	£ 999.95
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Cyrus Power	£ 449.95
Cyrus III	£ 499.95
Cyrus Pre	£ 649.95
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Denon PMA350II	£ 219.95
Denon PMA480R	£ 219.95
Exposure	P.O.A.
Harman HK610 (Phono extra)	£ 189.95
Kenwood KA1060	£ 139.95
Kenwood KA2060R	£ 169.95

**Kenwood KA3020SE** £ 199.95 FG

**Marantz PM44 Mkl SE** £ 199 £ 149.00

Marantz PM44 Mkl SE	£ 199.95
Meridian 501 Pre	£ 624.95
Meridian 555 Pwr	£ 624.95
Meridian 551	£ 694.95
Michell	P.O.A.
Musical Fid A1000	£ 1399.95
Musical Fid E100	£ 599.95
Musical Fid E200 Pre	£ 249.95
Musical Fid E300 Pwr	£ 699.95
Musical Fid F22	£ 999.95
Musical Fid F15	£ 1899.95
Nad 310	£ 129.95
Nad 302	£ 179.95
Nad 304	£ 239.95
Nakamichi IA4s	£ 149.95
Pioneer A103	£ 129.95
Pioneer A203	£ 149.95

**Pioneer A300X** £ 229 £ 179.00 NDR

Pioneer A400	£ 279.95
Pioneer A400X	£ 299.95
Project 7	£ 259.95
Quad 306	£ 349.95
Quad 34	£ 398.95
Quad 77	£ 594.95
Quad 606	£ 689.95
Quad 66 inc RI	£ 862.95
Rotel RA930AX II	£ 149.95
Rotel RA930BX	£ 199.95

**Rotel RA960BX II** £ 299 £ 199.00

Rotel RA970BX	£ 299.95
Rotel RC970BX II	£ 174.95
Rotel RB970BX II	£ 224.95
Technics SUA500 Mkl	£ 199.95
Technics SUA700 Mkl	£ 149.95
Technics SUA800 Mkl	£ 349.95
Technics SUA900 Mkl	£ 399.95

### MINI/MICROS

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Denon D90 Ex Speakers	£ 669.95
Denon D110 Ex Speakers	£ 799.95
Denon D250 Ex Speakers	£ 999.95
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**Sony STRD311** £ 229 £ 149.00 NDR

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<b>Aiwa ADF450</b>	£ 119 £ 72.00
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<b>Aiwa ADS950</b>	£ 289 £ 248.00

Aiwa ADWX727	£ 169.95
Denon DRM540	£ 159.95
Denon DRM740	£ 259.95
Denon DR5640	£ 199.95
Denon DRW760	£ 249.95
Kenwood KXW4060	£ 179.95
Kenwood KX3060	£ 169.95

**Marantz DD82** £ 399 £ 199.00 NDR

**Marantz DD92** £ 699 £ 299.00

Nad 602	£ 199.95
Nakamichi DR1	£ 849.95
Nakamichi DR2	£ 599.95

**Nakamichi DR3** £ 399 £ 329.00 NDR

Philips DCC 951	£ 279.95
Pioneer CT5430S	£ 199.95
Pioneer CT5630S	£ 299.95
Pioneer CT5830S	£ 499.95
Pioneer CTW503R	£ 179.95
Pioneer CTW603RS	£ 229.95
Pioneer CTW803RS	£ 299.95

**Sony TCK415 3-Head** £ 179 £ 129.00 NDR

**Sony TCK5153-Head Dolby S** £ 249 £ 159.00 NDR

**Sony TCK6115 Dolby S** £ 299 £ 238.00 NDR

**Technics RSBX501** £ 179.95 FG

Technics RSTR373K	£ 179.95
Technics RSTR474K	£ 199.95
Yamaha KX380	£ 169.95

**Yamaha KX580** £ 249.95

### HOME CINEMA

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### SPEAKERS

Bose	P.O.A.
B&W DM600i	£ 189.95
B&W DM610i	£ 249.95
B&W DM620i	£ 429.95
<b>B&amp;W Solid Monitor</b>	<b>£ 159.00</b> NDR
B&W P4	£ 599.95
Castle Trent II	£ 199.95
Castle Durham 900	£ 279.95
Castle York	£ 399.95
Castle Severn	£ 499.95
Castle Chester II	£ 699.95
Castle Howard	£ 999.95
Celestion 3 Mk II	£ 129.95
Celestion 5 Mk II	£ 169.95

**JPW Minim Monitor** £ 79 £ 54.00 NDR

JPW Sonata Vinyl £ 99.95

Kef Reference Model One £ 1199.95

**Kef Coda 7** £ 129.95

Kef Q10 £ 199.95

Kef Q30 £ 349.95

Kef Q50 £ 499.95

**Kef R105 Blk** £ 2299 £ 1295.00

TDL RTL3 £ 399.95

TDL RTL4 £ 649.95

TDL Studio 0.5 £ 499.95

TDL Studio 1 £ 699.95

**TURNTABLES**

**Dual CS 435 inc. cart** £ 129 £ 99.00

**Dual CS 503.2 inc. cart** £ 169 £ 135.00

**Dual CS 505.4 inc. cart** £ 199 £ 159.00

Michell P.O.A.

Nad 5120 inc. cart £ 119.95

Pioneer F303 RDS £ 449.95

Pink Triangle P.O.A.

Project 0.5 inc. cart £ 144.95

Project 1 inc. cart £ 184.95

Project 6.1 ex cart £ 379.95

Project 6.1 inc. cart £ 434.95

Technics SL1210 II £ 449.95

**TUNERS**

Arcam Alpha 5 £ 219.95

Audiolab 8000T £ 699.95

Cyrus FM7 £ 399.95

Denon TU260L £ 119.95

Denon TU3800L £ 189.95

Kenwood KT106DL £ 119.95

Kenwood KT206DL £ 149.95

Meridian 504 £ 624.95

Musical Fid E500 £ 499.95

**Nad 402** £ 169.95

Pioneer F203 RDS £ 129.95

Pioneer F303 RDS £ 179.95

Pioneer F502 RDS £ 249.95

Quad 66FM £ 532.95

Rotel RT940AX £ 139.95

Rotel RT950BX £ 219.95

**Sony STS311RDS** £ 199 £ 139.00 NDR

**CD PLAYERS**

**Aiwa XC300** £ 149 £ 98.00 NDR

Arcam Alpha One £ 299.95

**Arcam Alpha 5+ inc free A/Q** £ 469.95

Arcam Black Box 50 £ 449.95

Arcam Black Box 500 £ 749.95

Arcam Delta 250 Transport £ 749.95

Arcam Delta 270 £ 799.95

**Audio Alchemy DAC in the box** £ 199.95 FG

**Claim £20 CD Voucher**

Audiolab 8000 DCDM £ 1249.95

Audiolab 8000 DAC £ 749.95

Cyrus DAD7 £ 899.95

Denon DCD315 £ 149.95

Denon DCD615 £ 179.95

Denon DC D825 £ 219.95

Denon DCD1015 £ 349.95

Denon DCM340 Multi £ 299.95

Kenwood DP2060 £ 159.95

Kenwood DP3060 £ 199.95

Kenwood DP7060 £ 379.95

Kenwood DPR4060 Multi £ 199.95

Marantz CD10 £ 1199.95

**Marantz CD10 Factory Re-packs** £ 899.00

Marantz CD16 £ 1399.95

Marantz CD53 £ 199.95

Marantz CD63 £ 249.95

**Marantz CD63SE** £ 349.95

Meridian 563 DAC £ 749.95

Meridian 506 £ 874.95

Meridian 500 Transport £ 1094.95

Meridian 508 £ 1474.95

Musical Fid E600 £ 599.95

Musical Fidelity FCD £ 1499.95

Nad 501 £ 179.95

Nad 502 £ 229.95

Nad 513 Multi £ 269.95

**Philips CD710** £ 119 £ 79.00 NDR

Pink Triangle Cardinal Transport £ 749.95

Pink Triangle Ordinal £ 789.95

Pink Triangle Da Capo £ 1449.95

Pioneer PD103 £ 139.95

Pioneer PD203 £ 159.95

Pioneer PDF100H Multi £ 599.95

Pioneer PDM603 Multi £ 249.95

Pioneer PDS503 £ 199.95

**Pioneer PDS703** £ 249.95 FG

Pioneer PDM703 Multi £ 299.95

Quad 67 £ 824.95

Roksan P.O.A.

Rotel RCD930AX £ 199.95

Rotel RCD965BX £ 299.95

Rotel RCD970BX £ 349.95

Sony CDPM302 £ 129.95

**Teac CDP3500** £ 189 £ 149.00

Teac D700 Dac £ 599.95

Teac P700 Transport £ 899.95

Teac VRDST1 Transport £ 499.95

Teac VRD57 £ 599.95

Teac VRD510 £ 769.95

Teac VRD520 £ 1299.95

Technics SLP360 £ 139.95

Technics SLP460 £ 159.95

Technics SLP560 £ 179.95

Technics SLP570A £ 199.95

Yamaha CDC645 Multi £ 279.95

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**TDK SA90 108p**

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Mission 733 £ 299.95

Mission 734 £ 429.95

Mission 735 £ 599.95

Mission 751 (R/Wood add £29) £ 299.95

Mission 752 (R/Wood add £79) £ 499.95

Mission 753 (R/Wood add £99) £ 699.95

**Mission 760i** £ 129 £ 94.00 NDR

**Mission 760iSE** £ 149 £ 98.00

**Mission 780SE** £ 239.95

Mon Audio 1 Gold II (R/Wood + £20) £ 199.95

Mon Audio 14 Gold II (R/Wood + £50) £ 499.95

Mordant Short MS10 £ 139.95

Mordant Short MS20 £ 189.95

Nad 801 £ 99.95

Nad 804 £ 329.95

Pink Triangle Ventral £ 899.95

Proac P.O.A.



# TRUE MUSICAL

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## audiolab



8000Q

Heralding the latest addition to the Audiolab range. The new **8000Q** pre amplifier incorporates many significant technical advances over todays pre amplifiers. New 'Zq' technology ensures ultra low noise and distortion, whilst the mechanical design and printed circuit layout optimises short signal paths. All in all the new **8000Q** is a superb performer and an ideal partner for Audiolabs own **8000P** and **8000M** power amplifiers, helping to provide excellent detail and dynamics with a wide range of loudspeakers. For more details on these and the complete Audiolab range including **8000A**, **8000C**, **8000PPA**, **8000T**, **8000DAC** and **8000CDM** simply contact your local Sevenoaks Hi Fi branch.

## meridian



508

Meridians reputation for making the finest CD players is renowned.

With the superb **508** this reputation is enhanced still further. The first moment you set eyes on its unique styling - especially the luscious bonded glass (mirror finished) top - you can see that it is not just another black box.

Whether it is because they use top quality components as part of the high definition delta-sigma conversion or a precision steel chassis and high mass drawer mechanism, something is undeniably right, as music is reproduced faithfully.

To audition the Meridian range contact our branches in \*Sevenoaks, Chelsea, Watford, Witham (Essex), Croydon, Brighton, Tunbridge Wells, Leicester, Woolwich and Chatham. \*Digital Audio Visual products now on demonstration.

## michell



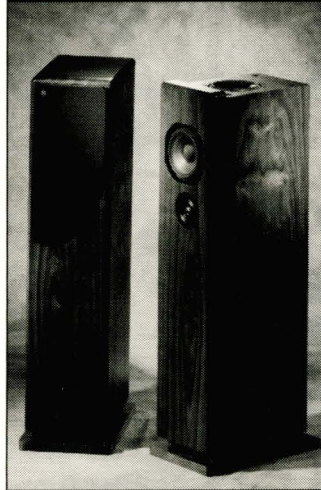
Gyro Dec

The **Gyro Dec** has always been a class act. Beautifully styled, it looks like no other turntable and like all of John Michell's product it has the performance to match. After twenty years of success John Michell compliments it with products that are impossible not to recommend like the **Argo**, **ISO**, **Alecto** and the new **QC Power Supply**.

At Sevenoaks Hi Fi you can audition these and other

'audiophile' vinyl replay equipment - like the Pink Triangle Export Gti and Anniversary turntables.

## castle



Howard

The natural, articulate sound presentation of the **Howard** is evidence of Castle's mastery of quarter-wave bass technology. A fibre polymer bass/mid driver and metal dome tweeter - with off-set placement - ensures crisp stereo imagery and extended, yet controlled bass, making it adept at handling all types of music - especially classical.

This dedicated manufacturer manages to combine craftsmanship and style throughout their range, offering nine hand crafted real wood veneer finishes on all of their models including **Trent II**, **Durham 900**, **Severn** and **Chester II**.

We also stock many other quality loudspeakers from ProAc, Monitor Audio, Kef Reference, TDL and Mission.

## quad



77

For over 50 years the name Quad has been synonymous with quality. Throughout the world, many hundreds of thousands of satisfied customers have endorsed this sentiment. The secret of Quad's success is their constant search for improved musical reproduction and style.

True to these ideals the new **77** integrated amplifier and remote control incorporates the very latest technology and innovative looks.

At Sevenoaks Hi Fi you can audition this and other models like the **606**, **66**, **FM 66** and **67** CD player.

## musical fidelity



E10

The **E10** integrated amplifier is the latest addition to Musical Fidelity's superb **Elektra** range. Featuring the same stylish front

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# EXPRESSION

*hi fi connoisseurs and music lovers*

panel and diecast metal knobs as the other **Elektra** models, build quality is as you would expect from this British manufacturer - impressive.

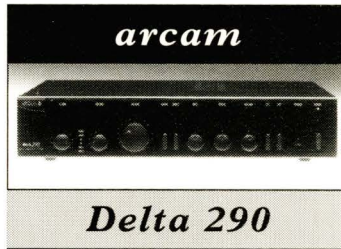
The **E10** combines the benefits of a class AB output stage - smooth sound and efficient use of power - thus ensuring high current delivery, with the capability to drive all loudspeakers easily.

For more details on the **Elektra, F Series** and **A1000** simply contact your nearest Sevenoaks branch.

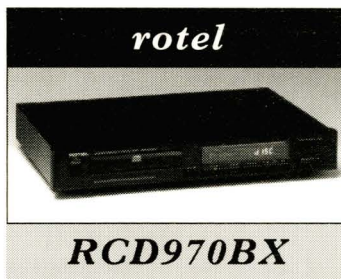


The superb Ruark **Templar** - compact floorstanding loudspeaker - demonstrates many of the points that have made Ruark such a well respected and successful manufacturer throughout the world. All of their range of loudspeakers are designed with outstanding musical reproduction in mind, as well as a style that allows them to

blend effortlessly into any living room. It is not often that style and performance combine in this way, and for a manufacturer to have so many quality models like the **Swordsman+ II, Talisman II, Paladin, Crusader II** and **Equinox** is a testimony to the very high standards that Ruark set themselves and uphold so impeccably.



The **Delta 290** is Arcam's finest integrated amplifier. Aesthetically pleasing and sonically superb it has all the hallmarks of quality you associate with Arcam products - minimalist layout, convenience of operation and of course, excellent value for money. As befits a modern amplifier it features remote control and is extremely versatile. To increase the dynamic performance, yet retain the crisp, clean sound, simply add the new **Delta 290P** (Power amplifier). This enables you to drive your loudspeakers with more control creating a hard to beat ancillary package.



Designed and developed in the UK - like all of Rotel's other products - the new **RCD970BX** continues the tradition of outstanding digital replay from a Rotel CD Player, like the award winning **RCD96BX**.

The new **RCD970BX** incorporates the latest in Bitstream technology, and the slimline styling makes it aesthetically very pleasing. Thus making it an ideal partner for other Rotel products especially the highly reviewed **RC/RB 970BXMK2**. When you look back over the last twenty five years of Hi Fi Separates, Rotel were there. Today they still offer more Best Buys, Recommendations and accolades than any other manufacturer.



Marantz are one of the audio pioneers with a dedication to make recorded sound as enjoyable as the real thing. They call this the development of pure hifidelity and over the years it has lead the Hi Fi press to bestow awards on numerous products from their extensive range. With this in mind their new **CD63SE** has advanced digital replay. Incorporating top quality components like high mass drawer mechanism and copper screening for improved air flow, it ensures faithful musical reproduction, long term reliability and a natural upgrade from the highly acclaimed **CD63**. Another exceptional value for money product from Marantz.

## WHO ARE WE?

Sevenoaks Hi Fi are at the forefront of Hi Fi retail in the UK. For over 21 years we have been selling quality Hi Fi products to discerning customers, and our enthusiasm is undiminished.

## AFTER SALES

All our products can be installed in your home. If you wish to use this service please ask your local branch for details.

## PEACE OF MIND

All the products we sell are brand new, fully guaranteed and maintained in our own service department. We also offer our own 'no quibble' extended warranty. Ask for details.

## PRICE PROMISE

We always try to ensure that our prices are competitive. However, in the unlikely event a competitor advertises an identical product as available from stock at a lower price, even in a sale, we will match that price!

Added value offers not available on price match.

# THE COUNTRY...

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SEVENOAKS HIF





Key to systems  
Price - typical retail, to nearest pound.  
Sources - CD - compact disc, R - radio tuner, Tu - turntable, T - cassette tape,  
V - video signal routing (composite and/or S-Video)  
Power - output power in watts, per channel, RMS.

Size - main unit dimensions - width x height x depth in cm.  
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Source	Power	Size	Special
<b>SYSTEMS</b>					
Aiwa LCX-50	250	CD,R,T	10	-	Micro, full remote
Aiwa NSX-270	280	CD,R,2T	20	-	Mini, remote
Aiwa LCX-60	300	CD,R,T	25	-	Micro, front loading CD
Aiwa LCX-65	300	CD,R,T	10	-	Micro, inc 25watt subwoofer
Aiwa NSX-400	300	CD,R	25	-	Mini, single box, 3-CD player
Aiwa NSX-340	300	CD,R,2T	25	-	Mini, 3-CD player
Aiwa LCX-7	300	CD,R,T	15	14,24,26	Micro
Aiwa NSX-430	330	CD,R,2T	40	-	Mini, inc front surround spkrs
Aiwa NSX-520	350	CD,R,2T	40	-	Mini, 3-CD player
Aiwa NSX-450G	350	CD,R,T	25	-	Mini, CD Graphics
Aiwa LCX-9	350	CD,R,T	10	14,24,26	Micro, with 25watt subwoofer
Aiwa LCX-70M	370	CD,R,T	30	-	Micro, 7-disc CD player
Aiwa Z-650	370	CD,R,Tu,2T	20	-	Midi, 3-CD player
Aiwa NSX-540	400	CD,R,2T	55	-	Mini, front surround spkrs
Aiwa Z-1100	400	CD,R,Tu,2T	30	36,48,35	3 CD player
Aiwa NSX-550G	430	CD,R,2T	40	-	Mini, CD Graphics
Aiwa D636	450	CD,R,2T	40	-	Mini, 3-CD, front surround
Aiwa NSX-D737	500	CD,R,2T	50	-	Mini, 4-mode DSP
Aiwa Z-1700	500	CD,R,Tu,2T	75	14,24,26	Midi, front surround
Aiwa Z-D3100M	600	CD,R,Tu,2T	50	36,54,35	Midi, three CD, separates
Aiwa NSX-D939	750	CD,R,2T	50	-	Dolby Pro Logic, incl speakers
Aiwa Z-D9100M	900	CD,R,Tu,2T	75	36,63,35	Midi, Pro Logic inc speakers
Akai MX92	279	CD,R,2T	25	26,38,24	
Akai MX92/T	329	CD,R,P,2T	25	27,46,31	As MX92, with mini turntable
Akai MX115	399	CD,R,2T	35	27,39,26	Graphic equaliser
Akai RX590	449	CD,R,2T,P	38	27,31,33	3x CD player, Dolby B
Akai MX115T	449	CD,R,P,2T	35	27,48,31	As MX115, with mini turntable
Akai RX590T	499	CD,R,2T,P	38	27,40,33	As RX590, with mini turntable
Akai RX690	549	CD,R,2T	50	27,40,33	3x CD player, Dolby B&C
Akai RX690T	599	CD,R,2T,P	50	27,49,33	As RX690 with mini turntable
Akai RX890	799	CD,R,2T	60	27,42,33	Virtual Room Simulator, RDS
Akai MX950	799	CD,R,2T	65	27,42,34	Triple CD, separates
Akai RX890T	849	CD,R,2T,P	60	27,51,33	As RX690, with mini turntable
Akai RX890 Compo	999	CD,R,2T,P	60	64,78,35	RX890 with stand & AP A950
Akai MX950 Compo	999	CD,R,P,2T	65	64,78,36	As MX950, with speaker stands
Amstrad MC500	100	CD,R,T	3	16,22,22	FM,MW 20 presets, bass boost
Amstrad Micro 1000	150	CD,R,T	5	15,20,26	15 presets, FM, MW, LW
Amstrad Micro 1500	170	CD,R,T	5	15,20,26	20 presets, FM,MW,LW
Amstrad CD3-500	200	CD,R,2T	5	28,34,30	Three disc CD player, FM, MW
Amstrad Micro 2000	230	CD,R,T	5	17,28,23	20 presets, FM, MW, LW
Amstrad Mini 3000	250	CD,R,2T	8	26,32,49	RDS tuner, mic mixing
Arcam Alpha 5	1200	CD,R	40	43,23,30	Based on Arcam separates
Arcam Alpha 6	1300	CD,R	50	43,23,30	Including Alpha 6 R/C amp
Arcam Delta	2810	CD,R,T	75	43,37,34	Full remote controllable
B&O BeoSound Century	995	CD,R,T	-	75,37,17	Wall mounted active speakers
B&O Beocenter Overture	1100	CD,R,T	-	32,36,16	Audiomaster, replaces 2500
B&O Beocenter 9300	1500	CD,R,T	80	76,11,34	
B&O Beosystem 2300	1500	CD,R	-	83,36,16	As 2500, without cassette
B&O Beosystem 7000	3075	CD,R,Tu,T	100	42,8,33	Components, speakers extra
Denon D-65/S	640	CD,R,2T	30	27 wide	Includes optional UK speakers
Denon D-90/S	740	CD,R,Tu,T	30	27 wide	RDS, inc optional UK speakers
Denon D-110/S	870	CD,R,Tu,2T	40	27 wide	RDS, inc optional UK speakers
Denon D-250/S	1000	CD,R,Tu,2T	50	27 wide	RDS, inc optional UK speakers
Denon D-F10/S	1150	CD,R,Tu,1T	50	-	All components sold separately
Dual MS2600	499	CD,R,2T	30	27,39,30	Karaoke support
Goodmans System 700	600	CD,R,2T	50	-	
Grundig MC10	300	CD,R,T	25	18,36,29	'Super Mini', Dolby NR
Grundig M10	330	CD,R,2T	22	27,37,34	Five band graphic & full remot
Grundig M20	430	CD,R,2T	35	25,37,30	Spectrum analyser
Grundig Fine Arts S1	750	CD,R,2T	50	44,45,30	
Grundig Fine Arts S3	770	CD,R,2T	50	44,37,30	Separates system
Grundig Fine Arts S2	890	CD,R,2T	80	44,45,30	Separates system
Grundig Fine Arts S4	1130	CD,R,2T	120	44,45,30	Separates system
Grundig Fine Arts S5	1300	CD,R,2T	120	44,41,30	Separates system
Hitachi AX10	330	CD,R,2T	20	23,29,28	Inc graphic equaliser
Hitachi AX10C1	370	CD,R,2T	35	45,34,63	Multi-disc player
Hitachi AX10C	379	CD,R,2T	20	23,29,28	6-disc, graphic equaliser
JVC Adagio S200	330	R,CD,2T	40	25,27,35	Live surround
JVC Midi-W48CD	400	R,CD,2T	50	36,50,34	Live Surround
JVC Adagio S30	430	R,CD,2T	32	25,27,35	Live surround, Karaoke
JVC Adagio S50	450	R,CD,2T,V	40	25,36,35	Live Surround system
JVC Adagio C33	450	R,CD,2T,V	30	25,33,34	Live surround, 7CD disc system
JVC Adagio S50R	500	R,CD,2T	40	25,36,35	Live surround, RDS
JVC Adagio S60R	549	R,CD,2T	45	28,36,35	Panoramic surround, RDS
JVC Adagio C55	600	R,CD,2T,V	36	24,36,34	Advanced 7CD disc system
JVC Adagio G7	800	R,CD,2T,V	50	28,43,28	Panoramic surround
JVC Adagio G9	1000	R,CD,2T,V	55	28,43,28	Panoramic surround
Kenwood UD-302	400	CD,R,2T	33	27,36,31	3-disc carousel
Kenwood UD-502	500	CD,R,T,2T	55	27,41,31	Presence modes
Kenwood M-28MG	600	CD,R,T,2T	30	36,56,38	Five disc CD carousel
Kenwood UD-552	650	CD,R,2T	32	27,41,31	7-CD Bank system
Kenwood M-58M	850	CD,R,Tu,2T	60	36,62,38	Dolby Pro Logic
Kenwood HD-600	900	CD,R,Tu,T	40	27,40,35	'Audiophile' mini
Kenwood UD-952	1000	CD,R,Tu,2T	70	27,41,31	Dolby Pro Logic
Kenwood HD-1000	1000	CD,R,T	40	27,40,35	MD & equaliser options
Kenwood M-97G	1250	CD,R,V,Tu,2T	85	36,64,38	Dolby Pro Logic
Kenwood M-97MG	1300	CD,R,V,Tu,2T	85	36,64,38	Multi-CD
Marantz 1010	900	CD,R,2T	45	42,77,31	System Link Operation



Key to systems  
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<b>SYSTEMS</b>					
Marantz 1020	1000	CD,R,2T	45	42,77,31	Motorised Front Panel
Nakamichi S'space 7	1495	CD,R	40	-	Multi-CD, aux & tape input
Onkyo L-909	1200	MM,3L,2T	70	-	Component system, 4ohm rated
Panasonic SC-CH32	300	CD,R,2T	20	-	
Panasonic SC-CH33Z	370	CD,R,2T	30	-	
Panasonic SC-CH170	400	CD,R,T	20	18,25,28	51cm wide, including speakers
Panasonic SC-DH80	430	CD,R,2T	5	-	
Philips FW21	300	CD,R,2T	12	26,30,22	
Philips AS44CD	329	CD,R,2T	20	36,38,29	
Philips AS540CD	379	CD,R,2T	40	36,398,29	
Philips FW41	400	CD,R,2T	30	26,30,25	
Philips AS640CD	429	CD,R,2T	30	36,38,29	Five disc CD
Philips FW91	499	CD,R,DCC	60	26,35,26	DCC mini
Philips FS380	499	CD,R,DCC	100	44,50,30	DCC midi
Philips FW370	900	CD,R,DCC	75	36,50,35	DCC midi
Pioneer N-25	299	CD,R,2T	20	-	Double cassette, three-disc CD
Pioneer N-50W	349	CD,R,2T	50	-	One touch Karaoke, smart timer
Pioneer J-200	399	CD,R,2T,Tu	50	-	Mic mixing, five band equalise
Pioneer N-70W	399	CD,R,2T	70	-	Double auto-reverse cassette,
Pioneer N-70W/M	449	CD,R,2T	70	-	Multi-play version of N-70W
Pioneer N-100W	499	CD,R,2T	100	-	Double auto-reverse cassette,
Pioneer J-300	549	CD,R,2T,Tu	49	-	Single play CD with Smart tune
Pioneer N-100W/M	549	CD,R,2T	100	-	Multi-play version of N-100W
Pioneer J-400M	649	CD,R,2T,Tu	50	-	Six-disc multiparty, Dolby Surr
Pioneer Impresso-3	749	CD,R,T	35	-	Separate components, CD with S
Pioneer J-500	779	CD,R,2T,Tu	65	-	Dolby Surround, seven band equ
Pioneer J-500M	829	CD,R,2T,Tu	65	-	Six-disc multiparty version of
Pioneer J-V600	879	CD,R,2T,Tu	65	-	Dolby Pro Logic A/V system, Mo
Pioneer Impresso-7	899	CD,R,T	45	-	As Impresso 3, with RDS tuner
Pioneer J-700	999	CD,R,2T,Tu	115	-	CD with Stable Platter mechani
Pioneer J-V600LD	1199	CD,R,2T,Tu	65	-	Includes PAL/NTSC LaserDisc pl
Samsung SCM6550	230	CD,R,Tu,2T	5	35,33,29	Midi, remote control
Samsung MAX335	230	CD,R,2T	10	23,30,30	Mini, remote control
Samsung SCM8100	300	CD,R,2T,2T	20	36,37,26	Midi, remote control
Samsung MAX370	300	CD,R,2T	20	45,32,34	Mini, remote control
Samsung SCM8300	329	CD,R,Tu,2T	20	36,37,30	Midi, equaliser, 5 CD carousel
Samsung SCM9100	430	CD,R,Tu,2T	30	36,47,29	Midi, remote control
Sansui MS6901	420	CD,R,2T	50	18,26,34	
Sanyo SYS 220	300	CD,R,2T	15	36,36,37	
Sanyo MS1	300	CD,R,T	25	22,21,22	
Sanyo DC D10	300	CD,R,2T	15	27,36,32	
Sanyo DC-D15	350	CD,R,2T	15	27,36,32	10 disc CD player
Sanyo DC-D40	400	CD,R,2T	30	27,36,32	10 disc CD player
Sanyo SYS915	430	CD,R,2T	30	36,43,36	Four-disc CD player
Sharp Mini C2400	230	CD,R,2T	10	61,32,31	Remote 3 disc CD changer
Sharp System-S360E Mk 2	230	CD,R,2T	10	27,32,33	Remote control
Sharp System-CD150E	260	CD,R,Tu,2T	10	36,48,36	30 tuner presets
Sharp Midi CDR160E	270	CD,R,2T	10	76,40,38	X-bass boost feature
Sharp System-S370E Mk 2	270	CD,R,2T	25	27,32,33	Five band equaliser
Sharp System CD170E	280	CD,R,Tu,2T	10	36,40,36	Remote control, auto-reverse
Sharp Mini S3460	300	CD,R,2T	30	63,32,30	3 mode programmed equaliser
Sharp Midi CDR260	300	CD,R,2T	25	76,40,38	3 mode programmed equaliser
Sharp System-Q8E	330	CD,R,T	12	15,19,26	Ultra compact
Sharp Mini C4450	350	CD,R,2T	20	63,32,30	3 disc CD changer
Sharp Micro XL12E	399	CD,R,1T	50	48,23,31	
Sharp Mini S6470	399	CD,R,2T	100	63,32,30	
Sony MHC 450	300	CD,T,Tu,2T	20	22,29,27	Remote, double cass deck
Sony MHC 590	330	CD,T,Tu,2T	-	-	Auto reverse
Sony Compact 190	330	CD,R,Tu,2T	9	35,48,34	
Sony MHC 650	380	CD,T,Tu,3T	35	22,28,26	Full remote
Sony Compact 195	380	CD,R,Tu,2T	9	35,49,41	
Sony Compact 290	400	CD,R,Tu,2T	30	35,48,35	
Sony Compact 295	450	CD,R,Tu,2T	30	35,49,41	Full remote
Sony MHC C50CD	500	CD,T,Tu,3T	30	22,33,32	Five-disc CD
Sony MHC 2900	500	CD,T,Tu,3T	40	22,28,26	Electronic EQ
Sony Compact 490	500	CD,R,Tu,2T	40	35,59,36	Five-disc CD
Sony MHC C70CD	600	CD,T,Tu,3T	40	22,39,31	Five-disc CD
Sony Compact Plus 590	600	CD,R,Tu,2T	60	43,48,39	Five-disc CD, electronic EQ
Sony Compact Plus 695AV	800	CD,T,Tu,2T	60	-	Full size separates, Dolby P-L
Sony MHC4900	800	CD,T,Tu,3T	60	22,41,28	
Sony MHC 5900AV	1000	CD,T,Tu,3T	60	22,41,28	UK sound, Dolby Pro Logic
Sony Compact Plus 795AV	1000	CD,R,Tu,2T	60	43,48,39	Dolby Pro Logic, Dolby S
Sony Compact Plus 995AV	1500	CD,R,Tu,2T	60	43,47,42	Dolby Pro Logic, LaserDisc
Technics SC-CH510	500	CD,R,Tu,2T	35	27,42,34	Mini, including speakers
Technics SC-CH610	600	CD,R,2T	35	27,42,34	Mini, multi-changer
Technics SC-CH1060	700	CD,R,2T,Tu	40	-	Mini, inc 'air coupling' spkrs
Technics CD-X120Z	700	CD,R,2T	40	36,41,32	Midi, including speakers
Technics CD-X320Z	800	CD,R,Tu,2T	50	36,41,32	Midi, including speakers
Technics SC-CA1080	850	CD,R,Tu,2T	55	-	Mini, Dolby Pro Logic
Technics CD-X520Z	900	CD,R,Tu,2T	60	36,41,32	Midi, including speakers, basi
Technics SC-CH9090	1000	DCC,CD,R	60	27,42,34	DCC equalised mini system
Yamaha CC70	600	CD,R,2T	50	28,33,34	YST active bass

Highlighted listings (as shown below) are covered in the *Hi-Fi Choice* Directory.  
Audiolab 8000T 700 FM,M,L 39 N 45,8,36 Switchable IF, muting, mono





Key to tuners  
Price - typical retail, to nearest pound.  
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.  
Presets - total number of presets on all bands.

RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.  
Size - width x height x depth in cm.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to turntables.  
Price - typical retail, to nearest pound.  
Speeds - 33, 45 and/or 78 revolutions per minute.  
Type - A - Auto, that is, automatic play initiation, and arm return at end of side.  
S - Semi, arm lift or arm return at end of side. M - Manual.

Size - width x height x depth in cm.  
Special - Cartridge and/or arm included etc.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Bands	Presets	RDS	Size	Special
<b>TUNERS</b>						
Aiwa XT-003	120	FM,M,L	30	N	-	
Aiwa XT-950	150	FM,M	24	N	-	
Arcam Alpha 5	220	FM	16	N	43,8,27	Signal strength meter
Arcam Delta 280	350	FM	20	N	43,7,28	Remote control, IF switching
Audiolab 8000T	750	FM,M,L	39	N	45,8,36	Switchable IF, muting, mono
Aura TU80	350	FM,M,L	30	N	43,6,27	Chrome finish add £50
AVI S2000MT	599	FM	16	N	31,25,9	R/C via system handset
Day Sequerra FM Ref	5457	FM	-	-	-	
Day-Seq S B'dcast Mon	14640	FM	-	-	-	
Denon TU-260L	120	FM,M,L	20	N	44,8,24	Low impedance output
Denon TU-380RD	190	FM,M	40	N	44,8,24	RDS Radiotext/EON
Goodmans GST650	90	FM,M,L	36	N	-	
Goodmans Delta 700	100	FM,M,L	36	N	36,11,30	
Grundig T1	130	FM,M,L	59	N	44,9,30	User station name, gain switch
Grundig T310	140	FM,M,L	59	Y	36,8,30	RDS (PS, CT, RT, PTY)
Grundig T2	170	FM,M,L	59	Y	44,9,30	RDS (PS, RT)
Grundig T4	210	FM,M	59	Y	44,9,30	RDS (PS, CT, RT, PTY)
Harman-Kardon TU9200	219	FM,M	70	-	45,8,38	
Harman-Kardon TU9400	299	FM,M	24	-	45,8,33	
Harman-Kardon TU9600	499	FM,M	24	-	45,8,33	
JVC FX362BX	130	FM,M,L	40	N	44,8,30	
JVC FX-572R	200	FM,M,L	40	Y	44,8,30	
JVC FX1010TN	300	FM,M,L	40	N	44,10,30	
Kenwood KT-1060L	120	FM,M,L	30	N	44,8,26	Preset scan
Kenwood KT-2060L	140	FM,M,L	30	N	44,8,26	Built-in timer, RDS
Kenwood KT-3050L	170	FM,M,L	39	Y	44,10,28	IF selector, RDS
Kenwood KT-6050	300	FM,M	39	Y	44,10,33	IF switch, two antennae, RDS
Linn Kremlin	1995	FM	80	N	32,8,33	Dual aerial capability
Luxman T-353	200	FM,M	30	N	9,44,36	System bus remote control
Magnum Dynalab FT11	550	FM	-	N	-	Analogue, black finish
Magnum Dynalab FT101	825	FM	-	N	-	Analogue, black finish
Magnum FT101 Etude	1250	FM	-	N	-	Analogue, black finish
Marantz ST-53	170	FM,M,L	59	N	42,9,30	D-bus
Marantz ST-63	249	FM,M,L	59	Y	42,9,30	D-bus
Marantz ST-72L	300	FM,M,L	59	Y	42,10,34	D-bus, IF switch, local switch
McIntosh MR7083	2095	FM,M	16	N	-	Interface to McIntosh remote c
Meridian 504	595	FM	30	N	33,9,34	System handset
Meridian 604	1350	FM	30	N	-	
Michi RHT-10	895	FM	16	N	47,8,34	Remote control
Mission Cyrus FM7	400	FM	29	N	22,8,36	Remote control bus
Musical Fidelity E500	499	FM	20	N	44,12,35	AGC/IF switch
Musical Fidelity FT	899	FM	20	N	49,12,33	Remote control, bandwidth limi
Naim NAT03	499	FM	-	N	21,16,30	
Naim NAT02	954	FM	-	N	21,16,30	
Naim NAT01	1495	FM	-	N	21,16,30	
Nakamichi ST3s	350	FM	30	N	43,7,32	
Onix BWD1	420	FM	-	N	75,23,37	In-house front end
Onkyo T-401	160	FM,MW	40	N	46,8,31	
Onkyo T430RDS	190	FM/MW	30	Y	46,9,30	
Onkyo T-409	230	FM,MW	30	N	28,8,30	Mini component
Onkyo T-450RDS	260	FM,MW	30	Y	46,9,31	
Onkyo T-411RDS	280	FM,MW	30	Y	28,8,30	Mini component
Onkyo R-811RDS	420	FM,MW	30	Y	28,12,33	Mini component, incl timer
Philips FT930	160	FM,M,L	40	Y	44,11,30	
Pioneer F-203RDS	130	FM,M,L	30	Y	42,8,29	RDS at very budget price
Pioneer F-303RDS	180	FM,M	40	Y	42,8,29	RDS with FON
Pioneer F-502RDS	250	FM,M	40	Y	42,9,34	2 aerial inputs
Quad FM4	434	FM	7	N	33,7,21	
Quad FM66	532	FM	19	N	33,8,26	For use with Quad 66 system
Rotel RT-950XB	220	FM,M,L	20	N	44,8,24	
Rotel RT-990XB	500	FM	16	N	44,8,29	Remote control
Sansui TU-X317	170	FM,M	20	-	-	
Sansui TU-X519	220	FM,M	30	-	-	
Sherwood TD1120	90	FM,M	24	N	-	
Sherwood TX1010C	100	FM,M	30	N	-	
Sherwood TX3010C	120	FM,M	30	N	-	
Sony STS211LB	130	FM,M,L	30	N	43,9,30	Station naming
Sony STS311LB	200	FM,M,L	30	Y	43,9,30	RDS EON, 'Autobetical' select
Sony STS505ES	250	FM,M,L	30	Y	43,9,35	UK optimised sound
Teac T-X4030	120	FM,M	20	N	44,9,28	
Technics ST-6T350L	140	FM,M,L	30	N	43,7,30	Remote control capable
Technics ST-GT550L	190	FM,M,L	39	Y	43,7,31	Remote control capable, RDS
Technics ST-GT650L	230	FM,M,L	39	Y	43,10,31	Class AA, remote control ready
Yamaha TX-350L	130	FM,M,L	40	N	-	
Yamaha TX-470	160	FM,M	40	N	N	

Model	Price	Type	Speeds	Size	Special
<b>TURNTABLES</b>					
Audiomeca J1/SL5	4250	M	33/45	50, 40, 2	With parallel tracking arm
B&O 7000	555	Auto	33/45	42,8,33	Inc MM2C cartridge, RIAA pream
Basis Ovalion II	4800	M	33/45	58,42,14	Lead/brass, record clamped
Basis Debut Gold Std III	7200	M	33/45	58,42,19	Belt drive, high mass, four po
Basis Debut Gold Vacuum	9250	M	33/45	58,42,19	Includes suction platter
DNM Rota 1	2850	M	33/45	59,14,37	Includes arm and cartridge
DNM Rota 2	4000	M	33/45	59,14,37	Includes arm and cartridge
Dual CS3700/3701	85	S	33/45	36,10,36	Mid-sized turntable
Dual CS435	130	F	33/45	44,12,36	Turntable includes cartridge
Dual CS503-2	170	S	33/45	44,13,37	Turntable includes cartridge
Dual 505-4 UK	200	S	33/45	44,15,37	Turntable inc cartridge
Dual CS750-1	350	S	33/45/78	44,14,38	Turntable includes cartridge
Dual Golden II	500	S	33/45/78	44,14,38	Piano finish CS750-1
Genexxa Lab-710	60	M	33/45	-	Includes MM cartridge
Genexxa Lab-810	70	S	33/45	-	Includes MM cartridge
Goodmans Delta 700	55	S	33/45	36,90,37	Part of Delta system
Kenwood KD-492F	100	A	33/45	44,10,39	Includes cartridge
Kuzma Stabi/PS	1200	M	33/45	51, 18, 4	Belt driven, external PSU
Kuzma Stabi Ref/PS	3000	M	33/45	-	Two motor, belt driven
Linn Basik	349	M	33/45	45,14,36	Complement with Akito arm
Linn LP12 Basik	745	M	33	45,14,36	Non-crystal motor drive
Linn LP12 Valhalla	894	M	33/45	45,14,36	Electronic PSU, upgradeable
Linn LP12 Lingo	1345	M	33/45	45,14,36	Outboard high grade PSU
Manticore Madrigal	570	M	33/45	46,36,12	Turntable, lifetime guarantee
Manticore Mantra	890	M	33/45	46,36,12	Turntable, lifetime guarantee
Manticore Magister	3800	M	33/45	57,46,18	Special order only
Michell Mycro	397	M	33/45	46,14,34	
Michell Mycro/arm	539	M	33/45	46,14,34	Includes Rega RB300 arm
Michell Gyrodek	765	M	33/45	53,19,41	Optional outboard PSU
Michell Gyrodek/arm	907	M	33/45	53,19,41	Includes Rega RB300 arm
Moth Alamo	175	M	33/45	-	Comes with RB250 arm
Moth Turntable	199	M	33/45	-	Split-plinth design
Moth Kanoot Mk I Arm	249	M	33/45	-	Inc Rega RB250 arm
Moth Kanoot Mk III Arm	299	M	33/45	-	Inc Rega RB300 arm
NAD 5120	110	S	33/45	-	Includes arm
N'ham Spacedeck	600	M	33/45	-	
N'ham Illusion	600	M	33/45	-	
N'ham HyperSpacedeck	1200	M	33/45	-	
N'ham Graphic	1200	M	33/45	-	
N'ham Mentor	2200	M	33/45	-	75lb alloy or graphite platter
N'ham Mentor Ref	4800	M	33/45	-	150lb platter, graphite top
Origin Live Oasis-S	899	M	33	-	Suspended turntable
Pink Triangle Export GT1	890	M	33/45	46,15,37	Suspended turntable, acrylic p
Pink Triangle Anniv	1695	M	33/45	45,15,37	Two box reference deck
Pink Triangle Anniv/PSU	2050	M	33/45	45,15,37	Battery PSU version of above
Pioneer PL-225	120	S	33/45	42,10,36	Belt drive, fitted cartridge
Pioneer PL-335	150	A	33/45	42,10,36	Belt drive, fitted cartridge
Pro-ject 0.5	145	S	33/45	42, 11, 3	With Ortofon OM5 cartridge
Pro-ject 1	185	M	33/45	42, 11, 3	With Ortofon 510 cartridge
Pro-ject 1 (E)	209	S	33/45	42,11,32	Semi-auto version of Pro-ject
Pro-ject 2	249	M	33/45	46, 12, 3	Metal/glass platter, clamp
Pro-ject 2/Ortofon	275	M	33/45	46, 12, 3	With Ortofon MC1 cartridge
Pro-ject 6	379	M	33/45	46, 17, 3	Suspended turntable
Pro-ject 6/Ortofon	435	M	33/45	46, 17, 3	As above, with Ortofon MC15
Pro-ject 6/Sumiko	699	M	33/45	46,17,3	With Sumiko arm
Rega Planar 78	198	M	78	45,13,37	As Rega Planar 2, 78 only
Rega Planar 2	198	M	33/45	45,13,37	Includes RB250 arm
Rega Planar 3	260	M	33/45	45,13,37	Includes RB300 arm
Rivelin Audio Eclipse	1595	M	33/45	45,13,38	Motor unit
Roksan Radius	495	M	33/45	45,12,35	Motor unit
Roksan Radius/Tabriz	695	M	33/45	45,12,36	As above, with Roksan arm
Roksan TMS	2475	M	33/45	45,12,35	Suede black
Roksan TMS	2759	M	33/45	45,12,35	Black lacquer
Sherwood PS1870	70	S	33/45	-	Budget turntable with arm
SME Model 20	2950	M	33/45/78	42,16,32	Precision turntable
SME Model 20A	4244	M	33/45/78	42,15,32	As above, with SME Series V ar
SME Model 30	10166	M	78	45,22,35	Flagship turntable
SME Model 30A	11460	M	33/45/78	45,22,35	As above, with SME Series V ar
Sony PSLX150H	90	S	33/45	43,10,36	Player, with MM cartridge
Sony PSLX431B	150	A	33/45	43,11,36	Player, auto rec size select
Systemdek I/920	136	M	33/45	-	Semi-suspended deck
Systemdek IIX/900	230	M	33/45	-	Fully suspended design
Systemdek I/920/Moth	235	M	33/45	-	As above with RB250 arm
Systemdek IIXE/900	330	M	33/45	-	As above with separate PSU
Technics SL-BD20	140	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-BD22	160	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-1210MkII	450	M	33/45	46,17,36	Quartz DD, no cartridge
Technics SL-1200MkII	450	M	33/45	43,10,38	Quartz DD, includes T4P cartri
Thorens TD-180/AT91	180	S	33/45	-	Belt drive
Thorens TD180/S500	200	P	3/45/78	-	Belt drive, plays 78s
Thorens TD-280 W/UK	200	S	33/45	-	Electronic belt drive, AT95E
Thorens TD-166 W/UK/AT95E200	350	M	33/45	-	Blank armo-board, cut to shape,
Thorens TD-166 W/UK	270	M	33/45	-	Inc TP50 manual arm, AT95E
Thorens TD-166 W/UK/Rega	300	M	33/45	-	With Rega RB250 arm, no cart
Thorens TD-2001	550	S	33/45	-	Includes Thorens TP50 arm, no

Highlighted listings (as shown below) are covered in the *Hi-Fi Choice* Directory.  
Systemdek I/920 136 M 33/45 Semi-suspended deck

Model	Price	Type	Speeds	Size	Special
<b>TURNTABLES</b>					
Akai AP A950	179	M	33/45	44,12,35	Inc cartridge
Alphason Sonata	835	M	33	-	Motor unit, suspended
Alphason Sonata/Atlas	1				



# MASSIVE ELECTRICAL STORM HITS THE MIDLANDS



*Stop everything. The company that built a reputation on top name hi fi systems and separates at prices no competitor dare match, announces the opening of its new flagship store in Birmingham, yards away from New Street station.*

*An even larger range of top hi-fi, is matched by similar outstanding value on car hi-fi, phones, photographic, camcorders, home cinema, TV, video, and much much more. Plus opening offers too numerous to list, its well worth the journey this week to the Hi Fi Superstore of the Midlands.*

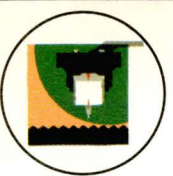
# CLEARTONE



**Stephenson Street, Birmingham. Tel: 0121 643 0972**

Also at **BOLTON** 235 Blackburn Road. Tel 01204 31423 **BRADFORD** Rawson Square. Tel 01274 309266 **COVENTRY** 78 Lower Precinct. Tel 01203 632086  
**GLOUCESTER** (formerly Robbs) 13/15 Worcester Street. Tel 01452 419777 **HALE** 162/164 Ashley Road. Tel 0161 928 1610  
**KEIGHLEY** 38 Cavendish Street. Tel 01535 602933 **MANCHESTER** 54 Bridge Street. Tel 0161 835 1156 **MANCHESTER** 66-68 Bridge Street. Tel 0161 832 2081  
**ROCHDALE** 52 Drake Street. Tel 01706 524652 **WALSALL** Park Street. Tel 01922 644169 **WIGAN** 6 Crompton Street. Tel 01942 323897  
**WOLVERHAMPTON** 39 Victoria Street. Tel 01902 772901 **WORCESTER** 27/27A The Cross. Tel 01905 726375  
**WORCESTER** David Warings, Marmion House, High Street. Tel 01905 27551





Key to cartridges.  
Price - typical retail, to nearest pound.  
Type - MM - moving magnet (output typically 1mV/cm/sec), MC - moving coil (output typically 0.1mV/cm/sec).  
Output - in mV/cm/sec.  
Int. stylus - Y for removable/replaceable styli and N for fixed styli.

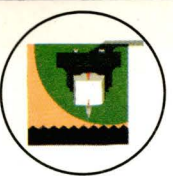
Fit - N for normal half inch mountings, T for T4P plug in types.  
Weight - in grams.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Speeds	Size	Special
<b>TURNTABLES</b>					
Thorens TD-3001/UK	770	M	33/45	-	Suspended - Rega arm no cart
Thorens TD-520	900	S	33/45/78	-	Pitch control, no arm
Townshend MkIII Rock	799	M	33/45	-	Headshell end arm damping
Voyd The	1570	M	33/45	51,16,42	Original three-motor model
Voyd 0.5	3368	M	33/45	51,16,42	Upgraded standard Voyd
Voyd Reference	6500	M	33/45	51,16,48	Turntable, polycarbonate platt
Well T Record Player	1800	M	33/45	45,18,36	
Well Tempered Classic	2800	M	33/45	48,19,39	The original Well Tempered
Well Tempered Super	3500	M	33/45	49,19,39	Classic with carbon arm
Well Tempered Reference	5500	M	33/45	49,19,39	'Fountainhead' base/carbon arm
Wilson Benesch	1550	M	33/45	-	High-tech turntable

Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
<b>CARTRIDGES</b>							
Arcam C77	30	MM	4mV	Y	N	-	Conical stylus
Arcam C77MG	40	MM	4mV	Y	N	-	As C77 with metal body
Arcam E77	50	MM	4mV	Y	N	-	Elliptical stylus
Arcam E77MG	60	MM	4mV	Y	N	-	As E77, with metal body
Arcam P77	63	MM	4mV	Y	N	-	'Profiled' stylus
Arcam P77MG	73	MM	4mV	Y	N	-	As P77, with metal body
Audio Note lo IIV	1395	MC	-	N	N	-	Silver wired
Audio Note lo Ltd V	2950	MC	-	N	N	-	Needs PSU
Audio Technica AT-91	13	MM	-	Y	N	-	
Audio Technica AT-95E	19	MM	-	Y	N	-	
Audio Technica AT-101EF	20	MM	-	Y	N	-	
Audio Technica AT-110E	24	MM	-	Y	N	-	
Audio Technica AT-420E	40	MM	-	Y	N	-	
Audio Technica AT-450E	62	MM	-	Y	N	-	
Audio Technica AT-OC3	104	MC	-	N	N	-	
Audio Technica AT-OC5	146	MC	-	N	N	-	
Audio Technica AT-OC30	619	MC	-	N	N	-	Nude micro linear stylus
Audio Technica ART-1	944	MC	-	N	N	-	
Audioquest MC5	250	MC	1.4mV	N	N	-	High output MC, line contact
Audioquest 404II	500	MC	0.5mV	N	N	-	Boron cantilever
Audioquest B200L	800	MC	0.5mV	N	N	-	Boron tube cantilever
Audioquest 7000NSX	1295	MC	0.3mV	N	N	-	Boron tube cantilever
B&O MMC4	1	-	-	-	-	-	MM, elliptical diamond
B&O MMC2	1	-	-	-	-	-	MM, Contact Line stylus
B&O MMC1	1	-	-	-	-	-	MM, Contact Line stylus
Benz-Micro The Glider	600	MC	1mV	N	N	-	Semi-nude design
Benz-Micro H200	700	MC	2mV	N	N	-	
Benz-Micro M090	700	MC	0.9mV	N	N	-	
Benz-Micro L040	700	MC	0.4mV	N	N	-	
Benz-Micro Wood Ref	1100	MC	0.3mV	N	N	-	Bruyere housing, boron
Benz-Micro Ruby Ref	1400	MC	0.3mV	N	N	-	Bruyere housing boron
Denon DL110	70	MC	-	N	N	-	Elliptical stylus
Denon DL160	90	MC	-	N	N	-	
Denon DL103	100	MC	-	N	N	-	
Denon DL304	200	MC	-	N	N	-	
Dynavector 50X	159	MC	2	Y	N	-	High output, exchange scheme
Dynavector 10X	189	MC	2	N	N	-	High output, exchange scheme
Dynavector 23RS	375	MC	0.15	N	N	-	Jewel cantilever, exchange
Dynavector 17D2	450	MC	0.15	N	N	-	Jewel cantilever, exchange
Dynavector XX-1L	998	MC	2	N	N	-	High output, exchange scheme
Dynavector XX-1	998	MC	2	N	N	-	High output, exchange scheme
Glanz GMC-10LX	69	MC	0.3	Y	N	5	
Glanz GMC 20E	99	MC	0.5	Y	N	6	
Goldring Elan P	17	MM	5.0mV	Y	T	6	T4P version of Elan
Goldring Elan	17	MM	5.0mV	Y	N	4	Rigid body
Goldring Elektra	25	MM	5.0mV	Y	N	4	Elliptical stylus
Goldring 1006	50	MM	6.5mV	Y	N	6	Elliptical stylus
Goldring 1012GX	65	MM	6.5mV	Y	N	6	Gyger II stylus
Goldring 1022GX	85	MM	6.5mV	Y	N	6	Gyger I stylus
Goldring Eroica LX	100	MC	0.5mV	N	N	6	As Eroica, low output
Goldring Eroica	100	MC	2.5	N	N	6	Gyger II stylus
Goldring 1042	105	MM	6.5mV	Y	N	6	Gyger S stylus
Goldring Elite	200	MC	0.5mV	N	N	6	van den Hul, silver wire
Grado ZTE+1	27	MM	-	Y	N	-	Moving flux, high output
Grado ZCE+1	37	MM	-	Y	N	-	Moving flux
Grado Z3E+1	47	MM	-	Y	N	-	Moving flux
Grado ZF1+	82	MM	-	Y	N	-	Moving flux
Grado Signature Junior	149	MM	-	Y	N	-	Moving flux
Grado Signature 8MZ	250	MM	-	Y	N	-	Moving flux
Grado Signature MCZ	375	MM	-	Y	N	-	Moving flux
Grado Signature TLZ	650	MM	-	Y	N	-	Moving flux
Grado Signature XTZ	975	MM	-	Y	N	-	Moving flux
Kiseki Blue GS	499	MC	0.4mV	N	N	8	
Kiseki Purpleheart	749	MC	0.4mV	N	N	11	
Kiseki PHS	899	MC	0.4mV	N	N	8	
Kiseki Blackheart	1995	MC	0.3mV	N	N	11	
Kiseki Lapis Lazuli	5000	MC	0.4mV	N	N	8	Gemstone body
Koetsu Red T	1550	MC	-	N	N	-	High-output MC

Highlighted listings (as shown below) are covered in the *Hi-Fi Choice* Directory.  
Systemdek I/920 136 M 33/45 - Semi-suspended deck



Key to cartridges.  
Price - typical retail, to nearest pound.  
Type - MM - moving magnet (output typically 1mV/cm/sec), MC - moving coil (output typically 0.1mV/cm/sec).  
Output - in mV/cm/sec.  
Int. stylus - Y for removable/replaceable styli and N for fixed styli.

Fit - N for normal half inch mountings, T for T4P plug in types.  
Weight - in grams.

Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

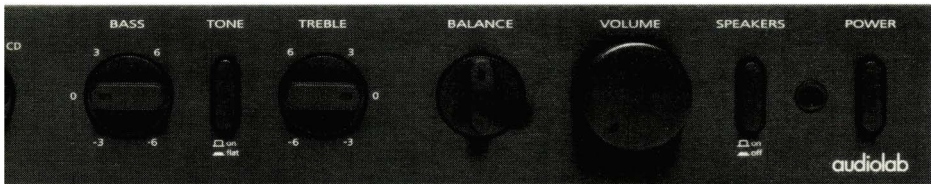
Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
<b>CARTRIDGES</b>							
Koetsu Red K Sig	1998	MC	-	N	N	-	Selected, re-tuned Red T
Koetsu Urushi	2200	MC	-	N	N	-	Metal alloy body
Koetsu Signature	3218	MC	-	N	N	-	Rosewood body
Linn K5	54	MM	4.5mm	Y	N	-	
Linn K9	109	MM	4.5mm	Y	N	-	Metal body
Linn K18/II	197	MM	4.5mV	Y	N	-	Metal body
Linn Klyde	449	MC	150uV	N	N	-	Alloy body
Linn Arkiv	998	MC	150uV	N	N	-	Three point mt, machined body
Linn Decca Maroon	199	MM	5.0mV	N	N	8	Original mounting
Linn Decca Gold	239	MM	5.0mV	N	N	8	Elliptical stylus
Linn Decca Maroon Dp	259	MM	5.0mV	N	N	10	Deccapod mounting
Linn Decca Gold Dpd	299	MM	5.0mV	N	N	5	Elliptical stylus, Deccapod
Linn Decca S Gold	339	MM	5.0mV	N	N	7	Original mounting
Linn Decca S Gold Dp	399	MM	5.0mV	N	N	10	Deccapod mounting
Linn Decca Jubilee	999	MM	5.0mV	N	N	5	0.5 inch mounting
Lyra Lydian	649	MC	-	Y	N	-	
Lyra Clavis Da Capo	995	MC	Low	N	N	-	
Lyra Parnassus	1995	MC	-	Y	N	-	
Militek Aurora	299	MC	2.0mV	N	N	9.5	High output MC
Militek Olympia	399	MC	2.0mV	N	N	9.5	As Aurora, sapphire cantilever
Nagaoka MP-11	24	MM	-	Y	N	-	Elliptical stylus
Nagaoka TS11	70	MM	-	Y	N	-	Line contact stylus
Nagaoka TS12 Boron	80	MM	-	Y	N	-	As MP-11, with boron cantilever
N'h'am Tracer I	98	MM	-	-	-	-	
N'h'am Tracer II	175	MM	-	-	-	-	
N'h'am Tracer III	350	MM	-	-	-	-	
N'h'am Tracer IV	550	MM	-	-	-	-	
Ortofon VMS2	10	MM	5	Y	N	-	Entry level elliptical cart
Ortofon OM-5E	16	MM	-	Y	N	-	
Ortofon OMP-5E	17	MC	4	Y	T	-	
Ortofon OM Pro S	21	MM	5	Y	N	-	Budget disco cartridge
Ortofon OM10 Super	25	MM	4	Y	N	-	Elliptical stylus
Ortofon OM Night Club S	32	MM	6	Y	N	-	Spherical stylus
Ortofon 510/P	32	MM	3	Y	N	-	
Ortofon OM Night Club E	37	MM	6	Y	N	-	Elliptical stylus
Ortofon Concord Pro S	40	MM	5	Y	N	-	Pro use, inc headshell
Ortofon Concord NC S	55	MM	6	Y	N	-	Pro use, inc headshell
Ortofon 520/P	55	MM	3	Y	N	-	Elliptical stylus
Ortofon OM20 Super	60	MM	4	Y	N	-	
Ortofon MC1 Turbo	60	MC	3.3	Y	N	-	
Ortofon Concord NC E	60	MM	6	Y	N	-	Spherical version of Concord
Ortofon OM30 Super	80	MM	4	Y	N	-	Fine line stylus
Ortofon MC10 Super	85	MC	0.3	N	N	-	
Ortofon 530/P	85	MM	3	Y	T	-	T4P fit
Ortofon MC3 Turbo	110	MC	3.3	N	N	-	
Ortofon MC15 Super II	110	MC	0.35	N	N	-	
Ortofon 540/P	110	MM	3	Y	N	-	
Ortofon MC25E	160	MC	0.5	N	N	-	High output, elliptical stylus
Ortofon MC25FL	210	MC	0.5	N	N	-	High output, Fine Line stylus
Ortofon MC10 Supreme	250	MC	0.5	N	N	-	High output MC
Ortofon MC20 Supreme	350	MC	0.5	N	N	-	High-output elliptical MC
Ortofon MC30 Supreme	450	MC	0.5	N	N	-	High output
Ortofon MC2000II	650	MC	0.12	N	N	-	
Ortofon MC3000II	950	MC	0.12	N	N	-	'Replicant' stylus
Ortofon MC5000	1500	MC	0.12	N	N	-	Sapphire cantilever
Ortofon MC7500	2000	MC	0.13	N	N	-	75th Anniversary model
Pickering TE-15	20	MM	-	Y	N	-	Tracks 1.5gm
Pickering VE-15	25	MM	-	Y	N	-	Tracks 1 - 3gms
Pickering T-E	25	MM	-	Y	T	-	Elliptical
Pickering V15-DJ	28	MM	-	Y	N	-	Disco model
Pickering TL-E	35	MM	-	Y	T	-	
Pickering XV15-350C	40	MM	-	Y	N	-	Conical stylus
Pickering TL-2E	45	MM	-	Y	T	-	
Pickering XV15-625E	50	MM	-	Y	N	-	
Pickering XV15-150-DJ	50	MM	-	Y	N	-	Professional cartridge
Pickering TL-2 S	55	MM	-	Y	N	-	Line contact stylus
Pickering XV15-757S	60	MM	-	Y	N	-	Line contact stylus
Pickering XV15-625DJ	60	MM	-	Y	N	-	Broadcast cartridge
Pickering XV15-1800S	70	MM	-	Y	N	-	Line contact stylus
Pickering TL3S	80	MM	-	Y	T	-	
Pickering XEV-3001E	95	MM	-	Y	N	-	Elliptical stylus
Pickering XLZ-3500	100	MM	-	Y	N	-	
Pickering TL-4 S	100	MM	-	Y	T	-	
Pickering TL-3003	145	MM	-	Y	T	-	
Pickering XLZ-4500	150	MM	-	Y	N	-	Line contact
Pickering TL-4004	175	MM	-	Y	T	-	
Pickering XSV-5000U	200	MM	-	Y	N	-	High output
Pickering XLZ-7500	200	MM	-	Y	N	-	Hybrid, low impedance
Pickering TLZ-7500-S	200	MM	-	Y	T	-	
Rega Bias	34	MM	-	-	N	-	
Rega RB78	34	MM	-	-	N	-	for 78rpm records
Rega Super Bias	52	MM	-	-	N	-	
Rega Elys							



# The *new* Audiolab 8000Q Pre-amplifier



- The Audiolab 8000 Series
- 8000A Integrated Amplifier
- 8000C Pre-amplifier
- 8000Q Pre-amplifier*
- 8000PPA Phono Pre-amplifier
- 8000P Stereo Power Amplifier
- 8000M Monobloc Power Amplifier
- 8000T FM/AM Tuner
- 8000DAC Digital-Analogue Converter
- 8000CDM Compact Disc Transport



**Audiolab 8000A**  
Best Integrated Amplifier  
over £300

**Audiolab 8000T**  
Best Tuner

**Audiolab 8000DAC**  
Best Digital product

# AUDIOLAB





Key to tonearms  
 Price - typical retail to the nearest pound  
 Type - F - fixed armtube/headshell, A - interchangeable armtube, H - interchangeable headshell.  
 Base type - S - SME fit, L - Linn/Alphason fit, P - proprietary fit.  
 Effective length - from pivot point to headshell in millimetres.

Weight range - the range of cartridge masses that the arm can accept in grams.  
 Special - characteristics of the arm.  
 Highlighted products have been tested in Hi-Fi Choice. Please refer to The Directory for full test results.

	Price	Type	Output	Int. stylus	Fit	Weight	
<b>CARTRIDGES</b>							
Shure M44C	33	MM	9mV	Y	N	-	Professional, spherical stylus
Shure ME95ED	38	MM	5mV	Y	N	-	Elliptical stylus
Shure M55E	42	MM	6mV	Y	N	-	Professional, spherical stylus
Shure M104E	44	MM	5mV	Y	-	-	DualT4P & normal fit
Shure ME97HE	60	MM	4mV	Y	N	-	Hyper elliptical stylus
Shure M110HE	74	MM	4mV	Y	-	-	Dual T4P & normal fit
Shure V15V-MR	265	MM	3mV	Y	N	-	Micro ridge stylus
Stanton 500EL	34	MM	-	Y	N	-	Elliptical stylus
Stanton 500AL II	34	MM	-	Y	N	-	Spherical stylus
Stanton 680AL/X	50	MM	-	Y	N	-	Spherical stylus
Stanton 680EL/X	56	MM	-	Y	N	-	Elliptical stylus
Stanton 890AL/X	82	MM	-	Y	N	-	Professional cartridge
Sumiko Oyster	30	MM	-	Y	N	-	
Sumiko Black Pearl	50	MM	-	Y	N	-	
Sumiko Pearl	70	MM	-	Y	N	-	
Sumiko Blue Point	100	MC	-	N	N	-	High output MC
Sumiko BPS	250	MC	-	N	N	-	Nude stylus
Transfiguration AF-1 Mk I	1595	MC	230uV	N	N	-	MC, transformer & preamp
Transfiguration Supreme	1995	MC	200uV	N	N	-	Yokeless ring magnet system
van den Hul MM-1	275	MM	-	-	N	-	
van den Hul MM-2	325	MM	-	-	N	-	
van den Hul DDT-II	675	MC	-	N	N	-	Silver coils
van den Hul MC-10	775	MC	-	N	N	-	Silver coils
van den Hul MC-One	975	MC	-	N	N	-	Selected version of MC-10
van den Hul MC-One/Hi	1100	MC	-	N	N	-	High output version of MC-10
van den Hul MC-Two	1300	MC	-	N	N	-	As MC-One/Hi, higher output
van den Hul Grasshopper II 2300	2300	MC	-	N	N	-	
van den Hul Grasshopper II 2300	2300	MC	-	N	N	-	
van den Hul Grasshopper II 2950	2950	MC	-	N	N	-	
van den Hul Grasshopper II 3200	3200	MC	-	N	N	-	
van den Hul Grasshopper II 3200	3200	-	-	N	N	-	
van den Hul Grasshopper II 3500	3500	MC	-	N	N	-	
Virtual Reality Aciore	199	MC	-	N	N	-	
Virtual Reality Etile	299	MC	-	N	N	-	
Virtual Reality Lexe	899	MC	-	N	N	-	

Model	Price	Type	Base type	Effective len	Wt. range	Special
<b>TONEARMS</b>						
Air Tangent 10B	8000	-	-	-	-	Air-bearing
Air Tangent Ref. Sig.	10000	-	-	-	-	Remote version of above
Alphason Xenon	286	F	L	229	3-20	1-piece titanium armtube
Alphason Xenon MCS	370	F	L	229	3-20	vdH silver wiring
Alphason HR100S	490	F	L	229	3-20	Superior quality bearing
Alphason HR100S MCS	550	F	L	229	3-20	vdH silver, top bearings
Audiomeca SL5	1999	-	-	-	-	Parallel tracking
Decca LI Arm	49	H	L	212	5-12	Damped
Decca LIR Arm	99	H	L	212	5-12	Rewired version of LI
Dynavector 507	1400	-	-	-	-	Biaxial design
Graham 1.5T	2550	-	S	-	-	SME base, unipivot
Helius Orion 4 Copper	495	P	P	254	-	
Helius Orion 4 Silver	645	P	P	254	-	
Helius Cyalene 2	1395	P	P	254	-	Silver wired, pivoted
Kuzma Stogi	600	-	-	-	-	Effective mass 13gm
Kuzma Stogi Ref	1000	-	-	-	-	Effective mass 12.5gm
Linn Akto	209	F	L	229	2-10	Statically balanced
Linn Ekos	1297	F	L	229	4-9	Dynamically balanced
Mantecore Musician	395	F	L	230	-	Handmade, lifetime guarantee
Mantecore Magician1	695	F	L	230	-	Polished armtube finish
Mantecore Magician2	795	F	L	305	-	Polished armtube finish
Moth Arm	95	-	-	-	-	Rebadged Rega RB250
Moth Mk III	146	-	-	-	-	Rebadged Rega RB300
Naïm ARO	898	-	-	-	-	Unipivot
N'ham Space	350	-	-	-	-	Optional silver wiring, unipiv
N'ham Mentor	750	-	-	-	-	Silver wiring, unipiv
N'ham Alien	1200	-	-	-	-	Graphite tube, unipivot
Rega RB250	95	F	R	237	-	Scaled down RB300
Rega RB300	139	F	R	237	-	Pivoted arm
Roksan Tabriz	230	F	-	240	-	
Roksan Tabriz Zi	365	F	-	240	-	'Intelligent' counterweight
Roksan Artemiz	795	F	-	240	-	Flagship arm, new style
SME Series IIS	242	A	S	233	0-12	Economy version of Series III
SME 3009 Ser II Imp	268	F	S	231	3-7	Fixed headshell, low mass
SME 3009 S2 Ser II Imp	292	H	S	231	3-8	Detachable headshell, medium m
SME Series III	335	A	S	233	0-13	Ultra-low mass for hi-complan
SME Series II 3009-R	445	H	S	233	0-28	Heavier version of Ser II S2 I
SME Series II 3010-R	455	H	S	239	0-25	Detachable headshell, 10 inch
SME Series II 3012-R	489	H	S	308	0-25	Detachable headshell, 12 inch
SME Series 300-309	597	H	S	232	6-17	Ser V derivative with detach h
SME Series 300-310	611	H	S	238	6-17	10 inch (nom) version of 300-3
SME Series 300-312	694	H	S	308	5-14	12 inch (nom) version of 300-3
SME Series IV	869	F	S	233	5-16	Economy version of Series V
SME Series V	1294	F	S	233	0-14	Flagship model

Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory.

SME Series V	1232	F	S	233	0-14	Flagship model
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# CD UPGRADES

## CLOCK 2

Improve the sound of your CD player or transport with our highly renowned 'Clock 2' modification. Hear the potential that the CD medium really has to offer.

- High accuracy (5ppm) low jitter performance
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  - Can be fitted to most players or transports regardless of price.
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This modification can be carried out by Trichord Research Ltd, or by your local Trichord dealer for only £141.00 inc. VAT, and return carriage. Also available in kit form with instructions for the technically competent at only £95.00 inc. VAT.

## NEW PRODUCT JUST RELEASED

### Digital Interface Board

For those of you using or wishing to use your CD player as a Transport for driving outboard DAC's with ultimate precision.

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# The DIRECTORY



*The original and best review based hi-fi guide*

**This is the legendary Directory, the second part of the *Hi-Fi Choice Buyer's Guide*, based entirely on comprehensive technical and subjective reviews. Each entry carries the weight of our exhaustive test procedures and should be read in conjunction with the prices and specifications given in our index starting on page 111.**

The *Hi-Fi Choice Directory* was conceived as a reference guide to all the audio products reviewed by *Choice* that are currently available. The products are split into categories, each with its own introduction containing information about the product type and its applications. They are particularly relevant to the uninitiated first time buyer and help sort out the order of priorities when buying a piece of equipment.

Each product along with its current retail price is placed in its respective category in alphabetical order. The prices of the products are updated on a

regular basis, 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:

<b>P</b>	<b>POOR</b>
<b>A-</b>	<b>AVERAGE-</b>
<b>A</b>	<b>AVERAGE</b>
<b>A+</b>	<b>AVERAGE+</b>
<b>G-</b>	<b>GOOD-</b>
<b>G</b>	<b>GOOD</b>
<b>G+</b>	<b>GOOD+</b>
<b>VG</b>	<b>VERY GOOD</b>
<b>E</b>	<b>EXCELLENT</b>

With P being the worst and E the best rating within a section.

One important point to remember is that these cannot be used to compare products from different categories. For example, a cassette deck rated Excellent in sound quality will not usually offer the same

## Finding that component

**Before you shop, follow our top eight tips for better buying:**

1. Check out the components' recommended retail prices in the *Directory*.
2. Find out as much as you can about the products you want by reading *Hi-Fi Choice's* reviews and lab tests.
3. Visit local dealers that stock some of the brands you want to hear and try to find one that seems sympathetic to your needs.
4. Don't discount a dealer's suggestions just because the products don't have rave reviews.
5. Take your own software (records, CDs, tapes) along for a demonstration of the equipment that the dealer recommends.
6. Listen at the sort of volume you would normally use at home — systems often sound more impressive when played loud.
7. If you are unsure about something or want to hear an alternative, just ask.
8. Audition a system for a reasonable amount of time, say three quarters of an hour or so, before making a decision.

standard of fidelity as a similarly rated turntable or CD player.

Unless you have first generation masters of course.

### Comments

The Comments column contains a potted summary based on the original review, emphasising the salient points of a product's character and sonic performance. The space available doesn't allow for great detail but we have attempted to put across the essence of the review.

Obviously, important information on compatibility or auxiliary equipment used in the test cannot be included, and we would advise you to refer to the original review for this.

Please note that these comments are those of our own reviewers and not, as is the case with some magazines, those of the manufacturer.

### Features

Product features are shown with a combination of figures and blob charts, with headings at the top of each column indicating the appropriate category, a blob

indicating the existence of a particular feature.

There are different headings for each section and the more complicated categories are explained in the individual introductions. Where figures are used the unit of measurement is shown in the heading.

### Back issues

The final column refers to the issue of *Hi-Fi Choice* which featured the complete review.

## How to use this guide

Perhaps the most influential symbols in the *Directory* are the little red triangles ▲ found in the value column at the beginning of each entry where appropriate.

Products that make the grade are awarded the Best Buy or Recommended accolade.

▲▲ A product carrying the Best Buy swingtag is of excellent quality and good value for money in its price category.

▲ Recommended products are runners up, but still definitely worth considering within their price bands.

Please note however, that an expensive Recommended product will nearly always sound better than an inexpensive Best Buy.

An ideal situation would be to choose suitably priced ▲▲ Best Buy or ▲ Recommended products from relevant categories and create a Best Buy system. However, due to the variety in tonal balance that exists in many audio products, and differences in taste, system building is unfortunately not that simple. These ratings make a useful guideline for shortlisting components, but only experiencing the actual combination will tell you whether it works for you.

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# Amplifiers

The amplifier sits at the heart of the system, processing the outputs from all the various music sources as necessary and then driving the loudspeakers. These two (quite separate) functions are integrated into a single box at the low-to-middle price points; separated pre- and power amplifiers, even separate power supplies, become increasingly common as one moves upmarket.

There is a substantial difference between specialist (sound quality oriented) amplifiers and the consumer electronics style models. The former are bleakly simple, avoiding all unnecessary features to provide the most direct signal path in the interests of sound quality. The latter range

from models with basic tone controls to those with remote control (including volume), surround sound options etc.

We include our measured power output (RMS, 8ohm load, 1 channel driven) – but again, paradoxically, this doesn't necessarily correspond to the loudness capability of the amplifier, which has as much to do with the elegance of the overload characteristics within a given system (valve amplifiers invariably sound more powerful than their rating would suggest).

Apart from output the facilities listing shows how many line (that is inputs besides those for phono cartridges) inputs a product has and

includes tape inputs. The MM and MC blobs indicate which types of cartridge can be accommodated. Integrated, preamp and power amp indicate the type of amplifier and in some instances that a pre/power combination has been tested. In such instances the price given is for both components. The remote control and headphone socket blobs indicate the existence of these facilities.

An increasing number of amplifiers are supplied without RIAA disc stages, or with the phono stage as an optional extra. If you use a turntable, make sure that it has a MM or MC stage to suit your cartridge.

▲▲ Best Buy  
▲ Recommended

## Amplifiers

Product	EPrice	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated	Preamp	Power amp	Remote control	Headphone socket	Issue No.
Albary AP4/S508	850	A-	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	G+	Available with or without various MM/MC options, the 'basic' PP1 has an attractively warm, earthy sound.	48	4		•					104
Alchemist Kraken	395	A	Class-A objet d'art that's far too sensitive to RF interference. Can sound cold and fierce as a result.	54	5	•	•	•				116
▲ Alchemist Kraken APD7/APD8	775	G	A quirky Class A number with an equally warm and colourful sound. Hardly accurate but entertaining nonetheless.	49	4	•		•	•			124
AMC CVT3030	529	A	A well meaning and affordable attempt to mix transistors with valves, albeit one that only really shines with simple musical styles.	35	5	•		•				116
Arcam Alpha 5	230	A+	A pared-down version of the Alpha 6 that suffers little penalty in power but a significant forfeit in sound quality.	60	5	•		•				134
▲ Arcam Alpha 6	300	VG	A new MOSFET design with a subtle and melodic sound that takes a conservative view of powerful dynamics	68	6	•	•	•				129
▲ Arcam Delta 110S/120.2	1070	VG	Now in mkII guise this established combination has matured into a very articulate, powerful if dry-sounding amplifier.	109	4	•	•	•	•	•	•	124
▲ Arcam Delta 290	480	VG	Combines the dryness and restraint of Arcam's older models with a refreshing sense of detail, dynamics and musical colour.	99	5	•	•	•			•	116
▲ Art Audio Quintet	1393	VG	Switchable triode/ultralinear output stage. In triode mode these are 15 of the sweetest watts around. Surprisingly gutsy	15/25						•		109
▲ Audio Innovations Alto	300	VG	Despite a shortfall in very deep bass this unusual amplifier still sounds beautifully open, natural and relaxed.	40	6		•					138
▲ Audio Innovations Series 300II	500	G+	Under-powered and over-distorted yet capable of realising an open and captivatingly expressive sound. Sensitive speakers are a must	9	4	•		•				97
▲ Audio Innovations Classic 25	899	G+	Warm, cuddly and immensely musical kit amp that almost transcends 'hi-fi' with its sheer listenability	24	5							126
▲ Audio Innovations Series 700	999	G+	Valve amp that can turn the roughest of digital sounds into music, both understated and graceful. Sensitive speakers are a must	24	5			•				116
▲ Audio Note Oto SE	1500	VG	Transparent, very dynamic, excellent clarity and subtlety with limited power make for a very clean sounding amp	9.5	3	•						126
▲ Audio Note Ongaku	43125	E	A single ended, zero negative feedback, triode, line level integrated amp and a half. Probably the best amplifier in the world!	27	6			•				Col
▲ Audiogram MB1	500	G+	It'll successfully tackle the most difficult of speakers and still provide a very warm, rich and euphonic sound.	46		•		•		•	•	116
▲ Audiolab 8000A	500	VG	Now fully compliant with European electrical safety standards, the 8000A remains a highly disciplined and mature-sounding amp.	77	5	•	•	•				140
▲ Audiolab 8000C/8000P	1220	G	Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7	•	•	•	•	•	•	97
▲ Aura VA-80	280	G+	The lower-powered basis for Aura's VA-100 offers a smoother and more natural sound that sparkles with detail.	52	6			•				142
Aura VA-100II Evolution	350	G-	Our sample failed to confirm Aura's claims for more power. The big, smooth yet slightly disjointed sound was equally familiar.	74	6	•		•				138
▲ Conrad-Johnson PV-10A	1250	E	Fabulous preamplifier. Beautiful imaging, superb detail, plenty of gain on the phono stage; classy build quality too.	4		•			•			78
▲ Conrad-Johnson Premier 7	11000	E	The 'Seven is designed without compromise, and is clearly one of the finest (valve) preamplifiers money can buy.	4		•	•	•				Col
Creek 4240	249	G-	Bearing no relation to earlier Creek designs, this radical re-think is very much more successful via MM than CD.	49	4	•	•	•				134
▲ Denon PMA-250III	160	A-	Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3	•		•				121
▲ Denon PMA-350II	220	G+	In-depth modifications have brought the original PMA-350 out of its shell with a powerful, up-front and compelling performance.	89	5	•		•				134
▲ Denon PMA-450SE	270	G	A racy little number based on the original '450 that offers a similarly fast, furious but undeniably entertaining sound.	100	5	•		•				142
DPA Renaissance	595	G	DPA's first integrated amp is typically innovative but sounds a little too 'crisp 'n dry' for our tastes.	36W	4	•		•				140
▲ DPA Digital DSP-200S/DPA-200S	1245	E	The very dramatic but exceptionally detailed and transparent sound of this combination belies its modest power rating.	48	5			•	•			124
▲ EAR 802/509mkII	4200	VG	Extremely well made and combining the sonic strengths of both transistors and valves this EAR combo warrants attention	100	6	•		•	•			63
EMF Audio Sequel	349	G+	A fresh start for Mike Creek has resulted in the Sequel, a minimalist amp with a very refined but mildly restrained sound	47	4	•		•				109
▲ Harman Kardon HK1400	400	G+	HK's first line-only amplifier exudes a relaxed but confident sound that is only troubled by the most dense of recordings.	52	7			•				129
Harman Kardon HK640	400	G-	A light and breezy-sounding line-only amp with full remote control. Needs more substance to counter its flyaway balance.	78	6			•		•	•	138
▲ Jadis JP30/JA30	12204	E	French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4	•		•	•			60
JVC AX-A472	250	A	A rather unpredictable performer that can initially sound impressive but often ends up sounding starchy and tiring.	80	5	•		•				142
JVC AX-R562	250	A-	More fuss and bluster than detail and dynamics was how one listener concisely described this less than wonderful model	90	5	•		•		•	•	121
▲ Kenwood KA-3020SE	230	G+	A lower-powered but more load tolerant version of the KA-3020 with an up-beat yet very comfortable and generous sound.	39	5	•		•				134
Kenwood KA-3060R	230	G	Oodles of classy engineering for the money but a sound that's over-dry, often frustratingly restrained and usually rather unsophisticated.	69	4	•		•				142
Kenwood KA-5050R	350	A	A listenable but neither particularly communicative or captivating amplifier that puts features ahead of sound.	103	6	•	•	•				129
LFD Integrated Zero	499	A-	A basic amplifier at a not-so-basic price. Provides a rather fierce and generally uncomfortable sound.	60	6			•				140
Linn Majik-I	593	A	The cornerstone of Linn's modular hi-fi system has many innovations to its credit but its sound is vague and confused.	33	6	•		•		•	•	129
Magnum IA170	270	VG	This is a disarmingly powerful amplifier capable of recreating a deep and naturally colourful sound. Optional phono stage.	96	6			•				142
Magnum Quartet	329	A-	An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble.	72	5			•				121
▲ Magnum Class A	599	G+	Lashings of rich and compelling music, trading a hint of lushness for stark accuracy. An unexpected find. Phono stage option	55	7			•				116
Marantz PM-44SEmkII	200	A-	Two generations on from the PM-40SE, Marantz' latest £200 contender provides a disappointingly grey view of music.	56	5	•		•				134
Marantz PM-54SE	330	G-	A beefed-up variation of the PM-40SE inside a PM-52SE case. It has a very quick but forward and ultimately tiresome balance.	79	6	•	•	•				138
Marantz PM-80mkII	480	G-	Less the revision and more an entirely new amp, this model sounds at its sweetest and most agreeable in the 31W Class A setting.	130	5	•	•	•				129
▲ Moth Series 30	587	G+	A modular system capable of cracking results. The passive preamp and power amp combination warrant a Best Buy in their own right.	35	4	•	•	•	•	•	•	109



# Amplifiers continued

Product	£Price	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated	Preamp	Power amp	Headphone socket	Remote control	Issue No.
▲▲ Mission Cyrus III	500	<b>E</b> The classic Cyrus II is given a new lease of life with full remote control. Sounds convincing, masterful and musical.	73	5	•	•	•	•	•	•	•	140
▲ Musical Fidelity Elektra E100	599	<b>VG</b> A beautifully crafted amplifier with a vibrantly colourful, almost dramatic sound that's uninterested in technical niceties.	84	6	•	•	•	•	•	•	•	140
▲▲ 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
Onix OA31	450	<b>A+</b> What this amplifier lacks in subtlety in makes up for in enthusiasm, though the big and brash sound is still tiring.	56	6	•	•	•	•	•	•	•	140
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
Onkyo A-803	260	<b>A</b> This amplifier certainly looks the part but, sadly, sounds surprisingly lifeless, vague and disinterested in the music at hand.	88	5	•	•	•	•	•	•	•	142
▲ Pioneer A-303R	200	<b>G</b> A remote-controlled amp with a surprisingly fresh and uncomplicated sound that bests much of its audiophile competition	56	5	•	•	•	•	•	•	•	134
Pioneer A-300X	230	<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>G+</b> Now firmly in production and thoroughly retested, this erstwhile Best Buy was tonally unchanged but less compelling on audition.	67	5	•	•	•	•	•	•	•	138
Pioneer A-503R	300	<b>A-</b> At its best via MM disc, the dull and claustrophobic sound of this remote-controlled amp is otherwise deeply uninspiring.	75	6	•	•	•	•	•	•	•	138
Pro-Ject 7	259	<b>A</b> A minimalist amplifier brimming with good intent but too quirky for its performance to be reliably predicted. Either MM or MC.	38	5	•	•	•	•	•	•	•	142
▲ 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	398	<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	1553	<b>G</b> Amplifiers with a classic lineage but compromised by an equally dated, soft and undynamic sound.	138	6	•	•	•	•	•	•	•	124
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	450	<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-930BX	200	<b>VG</b> A gilded version of the classic RA-930AX with a dark and luxurious sound that's reminiscent of Rotel's heyday.	50	4	•	•	•	•	•	•	•	134
▲ Rotel RA-970BX	300	<b>G</b> Sounds lively, fresh and perky with plenty of power to manhandle tricky speakers. Not so clever with complex recordings however.	99	6	•	•	•	•	•	•	•	138
Rotel RC-980BX/RB-980BX	800	<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
Rotel RA-980BX	425	<b>A</b> This integrated version of the 980BX pre/power is certainly very powerful but also lacks poise and subtlety	139	5	•	•	•	•	•	•	•	129
▲▲ Sansui AUX-417R	280	<b>G+</b> Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	•	•	121
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
Sony TA-F444E	250	<b>A+</b> A hi-tech MOSFET-based amplifier that sheds all frippery for an audiophile approach. Still sounds grubby and stilted, however.	61	5	•	•	•	•	•	•	•	142
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
Technics SU-A800mk2	350	<b>A</b> A quick audition might convince you the '800mk2 is something special, but longer term listening shows it's little but bluff.	79	5	•	•	•	•	•	•	•	134
▲ Technics SU-A900mk2	400	<b>G+</b> A Jeckyl and Hyde amplifier with a dismal-sounding phono stage but delightfully transparent and engaging CD input.	117	5	•	•	•	•	•	•	•	138
Thule Audio IA50	499	<b>A+</b> Best used as part of Thule's balanced-line system, otherwise its performance lacks any meaty substance.	67	5	•	•	•	•	•	•	•	140
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



## AV amplifiers

In practice an A/V amplifier provides all the standard CD, tuner, tape, aux and phono inputs offered by a standard stereo amplifier. In addition many also incorporate an AM/FM tuner section, making them A/V receivers.

More importantly a modern A/V amplifier includes a Dolby Pro Logic decoding chip along with extra circuitry to effect the rear channel delay. Naturally there's at least four channel's worth of amplification under the bonnet to feed the five loudspeaker outputs (Front L and R, Centre and

Rear mono L+R).

Some A/V amps offer other surround modes like simulated stereo, Hall surround (L+R is fed to the rear) and Matrix surround (L-R is fed to the rear). Others use an element of Digital Signal Processing (DSP) to steer the Dolby Pro-Logic or permit a variable rear channel delay. Some also include DSP options like Jazz, Church, Hall and Stadium modes which use different delay and steering levels to generate different 'sound fields'.

From left to right the headings below indicate

how many watts per channel each amp has for its front, centre and surround outputs.

Surround modes indicates how many different surround effects are available and includes DSP. The audio inputs are for both hi-fi and AV components. S-type and phono video inputs are for VCRs, Laserdisc players and CTVs, S-type being the better of the two.

Subwoofer outputs are of the phono socket variety for active subs, and AM/FM tuner denotes if the unit is effectively a receiver.

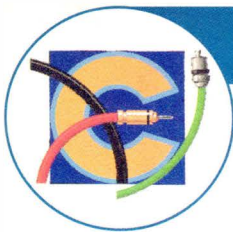
▲▲ **Best Buy**  
▲ **Recommended**

## AV amplifiers

Product	£Price	Comments	Surround output W/8Ω	Surround output W/8Ω	Surround output W/8Ω	Video inputs	Audio inputs	Subwoofer output	AM/FM tuner	Issue No.	
Denon AVC-3530	1000	<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	1000	<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
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
Yamaha DSP-A2070	1200	<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



**C**ables 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

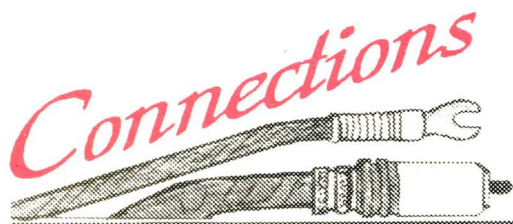
DACs, and are traditionally coaxial with a 75ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass and the latter in coaxial or alternative configurations. The prices shown are for a terminated linear metre

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.

▲▲ **Best Buy**  
▲ **Recommended**

## 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
▲ Cogon-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
Cogon Hall Intermezzo E-M	320	<b>VG</b> This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser							108
▲ DNM Interconnect	40	<b>G+</b> Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners							108
Golding '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
▲ 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-102mkIII S	80	<b>A+</b> A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble							108



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# Digital interconnects

Product	£Price	Comments	Type	Plastic	Glass	Non-coaxial Coaxial	75-Ω	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 Optlink 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
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

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# Cassette decks



The bad odour of copyright theft hangs around the compact cassette, but there is no doubt it is the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but are happy to use cassette decks to make up tapes for the car or personal.

There is no problem in connecting a cassette deck to any normal amplifier, but some care needs to be taken in choosing the best tapes for a specific machine. (Trial and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape automatically.) Lab

performance and sound quality often go hand in hand, and are frequently somewhat dependent upon factory alignment. The mechanical integrity of the mechanism is another crucial factor, that is reflected in the price.

The columns on the right indicate when the facilities shown in the headings are available on a deck. Dolby B and C offer varying degrees of noise reduction and the HX Pro system gives significant treble improvements with ferric (Type I) tapes. Dolby S increases the level of noise reduction with less signal degradation than B or C. Three-head

recorders allow you to listen to a recording as it's being made, a useful quality control function. Bias adjustment allows you to fine tune the deck to suit different types of tape when recording. Auto calibration is an automatic system for setting bias and Dolby levels.

Twin deck offers the option to dub tapes or to play two cassettes simultaneously. Autoreverse is a useful convenience feature, but usually with some mechanical compromise. In the case of twin decks a blob is inserted in this column even if only one transport autoreverses.

▲▲ **Best Buy**  
▲ **Recommended**

## Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Auto calibration	Bias adjust	Twin deck	Autoreverse	Issue No.
▲▲ Aiwa AD-F450	120	<b>VG</b> Basic but well designed budget deck; astonishing value, only the poor metering gives the game away	•	•	•							136
▲▲ 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-S950	300	<b>VG</b> High value, high spec package featuring Dolby S, 3 heads, tape calibration - well set up and musically well sorted.	•	•	•	•	•					140
▲▲ 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
▲ Arcam Delta 100	850	<b>F</b> Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•	•	•	•	•	•			111
Denon DRM-740	260	<b>A</b> Breathed-on DRM-710, with good external treatment offers good, if somewhat detached sonics	•	•	•							136
▲ 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-640	200	<b>VG</b> Drawer loading deck, with simple facilities and smooth, well adjusted sound.	•	•	•							140
Denon DRS-810	300	<b>G-</b> Drawer loading deck, carefully designed, yet lacking in subtlety on audition.	•	•	•							127
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 TD420	280	<b>A+</b> Minimalist audiophile deck, with good but not outstanding sound quality, and mediocre setup of the test sample.	•	•	•							140
▲ 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 KA-5060S	250	<b>G</b> Well engineered single capstan transport and Dolby S star in this refined and detailed sounding design.	•	•	•	•	•					140
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
Onkyo TA-201	200	<b>A-</b> Slightly old fashioned no-frills design, with some wow & flutter, and limited metal tape headroom.	•	•	•							140
Philips DCC600	500	<b>A+</b> Simplified circuit and mechanism, but the Philips badly needs a D/A converter transplant	•	•	•							123
▲▲ Pioneer CT-S430S	200	<b>VG</b> Against the odds - a 2 head Dolby S deck that works. Well set up and fully equipped.	•	•	•	•						136
▲ Pioneer CT-S520	280	<b>G</b> Decent if slightly coloured middle ranker with FLEX to revitalise old or soggy sounding tapes.	•	•	•							123
▲ Pioneer CT-S630S	300	<b>G+</b> 3 heads and Dolby S feature in an excellent deck that is underbiased with Type IV tapes.	•	•	•	•	•					140
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 TC-K415	180	<b>A+</b> Mainly UK designed with audiophile intent, but spoiled by erratic output, at worst with metal tapes.	•	•	•							136
Sony TC-K515S	250	<b>A+</b> Transport limitations and some brightness slightly mark down this refined, articulate design.	•	•	•	•	•					140
▲▲ 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	300	<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
▲ Technics RS-BX501	180	<b>G+</b> This is a well priced auto-reverse deck, with good sound quality and pricing.	•	•	•							140
▲▲ Technics RS-BX646	230	<b>G+</b> Unusually well built and non-microphonic deck with sophisticated facilities and lucid midband.	•	•	•							127
▲ Technics RS-BX701	270	<b>G+</b> Not cheap, but extremely well built deck, moderately well equipped a pleasure to operate and to listen to.	•	•	•							136
▲ 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

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# CD players



Now over a decade old, this all digital music source is well established despite high disc prices and the opposition of some hi-fi enthusiasts. Compact Disc's strengths over conventional vinyl are complete freedom from surface noise, ease of use, and more robust software.

However, many vinyl enthusiasts still find CDs sound less involving than top quality vinyl. But, with the dominance of CD in the high street, even vinyl die-hards need a CD player today.

The columns on the right indicate when the facilities shown in the headings are available on a CD player: DAC type indicates the type of convertor chip used in each player, 16, 18 and 20-bit are multi-bit types, all the others are bitstream variants. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound, but it is an important one. Remote control is not yet universal, and we have included a tick box, more to show which machines don't have

one than which do. The existence of electrical and/or optical digital outputs is important for future upgrading with an outboard DAC, as a rule electrical outputs are the most desirable. Phase inversion in the digital domain is rare on one box players but can make quite a big difference if you've got golden ears. Headphone sockets are useful but beware of those without volume controls. Track entry keypads are those with calculator style buttons which makes track access much quicker.

**Best Buy**  
**Recommended**

## CD players

Product	Price	Grade	Comments	DAC type	Electrical digital output	Optical digital output	Variable output	Headphone socket	Track entry keypad	Issue No.
Aiwa XC-750	200	A	A refined version of the XC-700, sadly it has lost the magic of the original	PDM Bitstrm	•	•	•	•	•	119
▲ AMC CD6	349	G+	Based on the same 1-Bit circuit as Rotel's RCD-965BX but with a raunchier, beefier but less transparent sound.	PDM Bitstrm	•	•	•	•	•	124
Arcam Alpha One	300	A+	The first UK-built player under £300 is hampered by a tidy but rather grey and uninspiring sound.	PWM bitstrm	•	•	•	•	•	137
Arcam Delta 270	800	G+	The dry but tightly-focussed and supremely detailed sound of this player will either beguile or aggravate, depending on taste!	Hybrid	•	•	•	•	•	124
Aura CD-50	400	G-	Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•	•	•	•	119
AVI S2000MC	999	G+	A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•	•	•	•	119
▲ Denon DCD-615	180	G	Builds upon the smooth and composed sound of the DCD-595 while offering extra widgets at no extra cost.	18-bit	•	•	•	•	•	139
▲ Denon DCD-825	220	G	Despite extensive revisions, this latest player still sounds like a typical '18-bit Denon', which is no bad thing!	18-bit	•	•	•	•	•	137
Denon DCD-1290	330	G-	Looks like the business but sound is a real five-minute wonder. Its compelling fizz lasts about as long as a firework.	18-bit	•	•	•	•	•	107
Dual CD1001RC	180	A-	This Yamaha-based CD player is compromised by a number of technical flaws and a fundamental lack of bass.	PDM Bitstrm	•	•	•	•	•	139
▲ Goodmans Delta 700	110	A+	A 16-bit alternative to the CD650II that furnishes a colourful and animated sound	16-bit	•	•	•	•	•	128
Grundig Fine Arts CD2	190	A-	A stylish-looking player with a disappointingly vague approach to music-making	SAA7350	•	•	•	•	•	128
▲ Harman Kardon HK7725	800	VG	This flagship implementation of RLS sounds impressively bold and dynamic - a genuine rock 'n roller!	18-bit RLS	•	•	•	•	•	124
▲ Harman Kardon TL8600	700	G+	A refined and more flexible version of the TL8500 multiplayer with a significantly more expressive sound	MASH/PWM	•	•	•	•	•	132
JVC XL-V274	160	A	This appears to be a re-badged version of JVC's XL-V264, retaining an over-heavy bass and generally gaudy sound.	PEM Bitstrm	•	•	•	•	•	139
JVC XL-Z1050	500	A	Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM Bitstrm	•	•	•	•	•	119
▲ Kenwood DP-3060	200	G+	Based on the same filter/DAC as Marantz' CD-53 but with a more transparent, sober and highly insightful sound.	NPC bitstrm	•	•	•	•	•	139
▲ Linn Karik	1497	VG	Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•	•	•	•	119
▲ Marantz CD-53	200	G	Looks identical to the CD-63 but component costs are cut inside, exposing a slightly ragged but enthusiastic performer.	NPC bitstrm	•	•	•	•	•	139
▲ Marantz CD-63	250	VG	New technology has enabled Marantz to steal a march on its old CD-52 series and, once again, regain the upper hand.	NPC bitstrm	•	•	•	•	•	137
▲ Marantz CD-52IISE	300	G	A new mains transformer plus the full complement of internal mods has recaptured the frothy if startling sound of the original '52	PDM Bitstrm	•	•	•	•	•	119
Marantz CD-72SE	600	G+	A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	112
NAD 501	180	G-	A thoroughly typical frill-free player but with a slightly too cautious, even restrained musical outlook.	SAA7323	•	•	•	•	•	139
▲ NAD 502	220	G	This updated version of the 5425 has traded the spontaneity of its forebear for a more precise but mechanical style of music	MASH/PWM	•	•	•	•	•	119
Nakamichi CD-4	380	A-	This looks new enough but sounds little better than the older CD Player 4 upon which it is firmly based.	18-bit	•	•	•	•	•	124
▲ Nakamichi MB-4s	300	G	Entry-level MusicBank player that sounds like it's come from a studio control room: plenty of dynamics and detail but little stereo depth	16-bit	•	•	•	•	•	132
Onkyo DX-C110	350	G-	A big and beefy 6-disc carousel that strides confidently through rock and pussyfoots around gentle ballads	Bitstream	•	•	•	•	•	132
▲ Philips CD732	140	A+	A cross between Philips CD690 and CD920 is no more technically accomplished but encourages a very lively and entertaining sound	SAA7341	•	•	•	•	•	128
Philips CD740	170	A	One of several Philips players using a hybrid of DAC technologies. Still sounds insufferably boring, however.	Hybrid	•	•	•	•	•	139
Philips CD750	200	A+	The costliest player in Philips range and the last to use its BS DAC lacks a sense of integration and stereo focus.	PDM Bitstrm	•	•	•	•	•	137
Pioneer PD-S503	200	A	The cheapest Legato Link player yet but another that sounds unpredictable and generally hard work.	PFM Bitstrm	•	•	•	•	•	139
▲ Pioneer PD-S703	300	G+	Legato Link and bitstream are combined into a cheaper IC though the player sounds as manipulative and intriguing as ever.	PFM bitstrm	•	•	•	•	•	137
▲ Pioneer PD-S901	500	G+	The very refined but confident, crisp and powerful sound of the '901 snatches Pioneer's LLC concept from the jaws of defeat	PFM Bitstrm	•	•	•	•	•	119
▲ Quad 67	790	E	Deceptively sleek in appearance but with a powerful, fluid and captivating sound reminiscent of Meridian's 206.	Crystal BS	•	•	•	•	•	124
Rotel RCD-940BX	230	A-	A sea-change in transport and DAC technology lies behind the most untidy-sounding and irritating player to emerge from Rotel.	Hybrid	•	•	•	•	•	137
▲ Rotel RCD-945AX	230	G	Based on the same CD-player-on-a-chip as Philips CD690 but with improved execution and build.	SAA7341	•	•	•	•	•	124
▲ Rotel RCD-965BX	300	E	An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	PDM Bitstrm	•	•	•	•	•	100
Sansui CD-X317	250	A	Not in the same class as older CD-X31 1mkll. Same technology but the sound is neither as responsive or engaging	MASH/PWM	•	•	•	•	•	107
Sansui CD-X617	350	A	This 'double-DAC' version of the CD-X317 is more impressive, sounding light and tizzy with pop but dull with classical CD's	MASH/PWM	•	•	•	•	•	112
Sansui CD-Alpha 717DR	1560	G+	A beautifully constructed if rather dated flagship player with an equally sedate and unadventurous sound.	MASH/PWM	•	•	•	•	•	124
▲ Sherwood CD-3020R	130	G	Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	119
▲ Sherwood CD-5010R	160	G+	A warm, detailed and enjoyable performance from a solidly built but affordable package.	PDM Bitstrm	•	•	•	•	•	124
Sherwood CDC-5030R	200	A-	The replacement for the successful 5-disc CDC-5010R sounds messy, disjointed and generally unpleasant. A great disappointment	Bitstream	•	•	•	•	•	132
Sony CDP-312	150	G	Something of a rough diamond, offering a raft of features and good build but a decidedly technicolour sound.	PLM bitstrm	•	•	•	•	•	139
Sony CDP-C345	230	A+	Sony's Hybrid Pulse DAC sounds great in the CDP-311 but in this 5-disc carousel it provides a mere skeleton of a performance	PLM Bitstrm	•	•	•	•	•	132
▲ Sony CDP-715E	250	E	Advanced Pulse technology collides with UK tweaking to produce one of the most fabulous CD players in recent memory.	PLM bitstrm	•	•	•	•	•	137
Sugden SDT-1	850	A	Bearing in mind Sugden's SDA-1 converter lies at the heart of this player, its unpredictable performance is disappointing	16-bit	•	•	•	•	•	119
Teac CD-P3500	200	A	A well-meaning attempt to pare-down the CD-P4500 results in a similar looking player with a thoroughly uninspiring sound	PDM Bitstrm	•	•	•	•	•	112



# CD players continued

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Headphone output	Variable output	Track entry keypad	Remote control	Issue No.
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-PG460A	160	<b>A</b> Sadly this player lacks the fire of Technics' earlier budget wonders. It looks similar but sounds terribly apathetic.	MASH/PWM	•	•	•	•	•	•	139
Technics SL-PG440A	170	<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-PS620A	200	<b>G+</b> A costlier, started-up version of the SL-PG520A that loses very little in the way of clarity, sparkle or in compelling dynamics	MASH/PWM	•	•	•	•	•	•	112
Technics SL-PS740A	250	<b>A</b> Nothing wrong with its technical heritage but Technics' ongoing 'improvements' only serve to stifle the sound of this player.	MASH/PWM	•	•	•	•	•	•	137
Yamaha CDX-670	290	<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 disc drive or transport, and a device which turns the digital bitstream coming off the disc into an analogue audio signal. This is called a digital to analogue converter or DAC. Although most players are contained in a single box, expensive players are usually two box affairs.

Although many of these units will be purchased as matching pairs, a DAC can also be

used to upgrade an existing CD player. Thus an early machine with a satisfactory transport can be rejuvenated by adding an outboard DAC.

The columns on the right indicate the facilities available on a transport or DAC. Remote control is self explanatory. The existence of electrical and/or optical digital in and outputs is pretty fundamental to transports and DACs, as a rule electrical outputs are the most desirable. Class 1 transports are those with an output whose crystal clock accuracy that's

better than ± 50ppm (parts per million), certain DACs won't lock onto transports with a lower clock accuracy. DAC type shows the specific converter chip employed. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound. Phase inversion in the digital domain can make quite a big difference if you've got a high resolution system and golden ears.

- ▲▲ **Best Buy**
- ▲ **Recommended**

## CD transports

Product	£Price	Comments	Remote control	Electrical digital output	Optical digital output	Class 1	Issue No.
Arcam Delta 250	750	<b>G+</b> Arcam's best effort yet is a new design based on the Philips CDM9 transport; specification includes Sync Lock facility.	•	•	•	•	130
Counterpoint DA-11E	1495	<b>VG</b> By rights this transport should be highly incompatible yet it delivers a remarkably vivid and natural sound.	•	•	•	•	130
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
TEAC P-2s	4300	<b>A+</b> The latest version of Teac's luxury P-2 transport sounds as over-engineered as it looks.	•	•	•	•	130
Theta Data Basic	1990	<b>G+</b> A mild-mannered transport capable of marvellous results with lively-sounding outboard converters.	•	•	•	•	130
Wadia 8	3195	<b>G</b> Includes a budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer.	•	•	•	•	130

## DACs

Product	£Price	Comments	DAC type	Electrical dig output	Optical digital output	Phase invert	Issue No.
Arcam Black Box 50	450	<b>VG</b> A very measured and sophisticated sound from a DAC that leaves plenty in reserve to accommodate future upgrades.	Hybrid	•	•	•	127
Arcam Delta Black Box 500	750	<b>A+</b> A very sophisticated unit equipped with Sync Lock and discrete DAC circuitry. Early samples sounded restrained and grubby.	Bit Stream	•	•	•	136
Audio Alchemy DAC-in-the-Box	200	<b>G</b> Despite its slightly veiled sound this giveaway DAC may still rescue the oldest of players from obsolescence.	18-bit	•	•	•	127
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
AVI S2000MD	549	<b>G</b> Despite using a very different chipset, the S2000MD sounds as civilised and refined as AVI's other digital separates.	16-bit	•	•	•	136
Cambridge Audio DACMagic-1	150	<b>VG</b> Ridiculously under-priced, this DAC is better suited to high-end transports than the budget players it was intended to partner.	Hybrid	•	•	•	136
DPA Digital Little Bit II	400	<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
Kinshaw Overture	235	<b>A-</b> A neat enough package that's infested with a variety of technical bugs and severely chastised on audition.	Hybrid	•	•	•	136
Kinshaw Perception	745	<b>VG</b> A two-box converter that sounds loud, quick and very dynamic without tripping over complex material. A good 'un.	Hybrid	•	•	•	136
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 BS2	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
Pink Triangle Ordinal	750	<b>E</b> The cheapest dual-differential DAC7 converter available. Offers interchangeable digital filters and top-flight sound quality.	DAC7	•	•	•	136
QED Digit	139	<b>G+</b> Bearing in mind its expressive but very forgiving performance the Digit is almost embarrassingly cheap	PDM Bitstrm	•	•	•	113
QED Digit Reference	425	<b>G+</b> No great advance over the basic QED Digit yet its enthusiastic sound is more than competitive at the price.	Bit Stream	•	•	•	136
Select Systems Dacula	400	<b>G</b> The overly warm and heavy bass of this DAC is quite atypical of the Crystal Bit Stream DAC.	Crystal	•	•	•	127
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
Thule Audio DAC-200	799	<b>A</b> A good first effort from Thule even though its fizzy and over-eager sound could do with house-training.	DAC7	•	•	•	136
Woodside DAC1	909	<b>G</b> Fine but slightly dated and costly package in performance terms - but flexible, musical and well built	16-bit	•	•	•	87
Woodside DAC2	509	<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	£Price	Comments	DAC type	Optical digital output	Electrical digital output	Remote control	Track entry keypad	Headphone socket	Variable output	Issue No.
▲ Arcam Delta 250/Black Box 50	1200	<b>VG</b> A very sophisticated combination that sounds silky-smooth without appearing soft or sugar-coated. A bargain two-box player.	Hybrid	•	•	•	•	•	•	133
Audio Alchemy DDS/DTI/XDP/P52	2047	<b>A+</b> A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	•	120
▲ Cyrus Discmaster/Dacmaster	1900	<b>G+</b> A powerful-sounding and perhaps slightly heavy-handed combination that cuts right to the heart of its music.	20-bit	•	•	•	•	•	•	133
DPA Digital T-1/PDM2mkII	3245	<b>G</b> An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	•	120
DPA Digital T1/PDM 256	3890	<b>G</b> A highly advanced duet with adjustable dither facility. Sadly its different settings only usher-in different compromises.	Bit Stream	•	•	•	•	•	•	133
▲ EAD T-1000/DSP-1000	2195	<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 500/563	1670	<b>A+</b> Combined with its own 500 transport, the recommended 563 sounds disappointingly thin, brash and uncomfortable.	Crystal	•	•	•	•	•	•	133
▲ 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
▲ Monarchy Audio DT-40A/M-33	3090	<b>VG</b> An intriguing combination that provides a beefy and enthusiastic performance via its balanced AES/EBU connection.	20-bit	•	•	•	•	•	•	133
Proceed PDT3/PDP3	5214	<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
▲ PS Audio Lambda/Ultralink Two	4900	<b>VG</b> In direct contrast with its appearance, this duet positively sparkles with colour and resonant detail.	20-bit	•	•	•	•	•	•	133
▲ 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
Teac P-2s/D-2	6000	<b>A-</b> Teac's VRDS statement looks a million dollars but sounds rather thin and uninviting. A great disappointment.	18-bit	•	•	•	•	•	•	133
Theta Data Basic/Cobalt 307	2696	<b>G+</b> A cautious and slightly over-refined combination that fails to make the best of either component.	Hybrid	•	•	•	•	•	•	133



## 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 such as mixing desks.

## DAT players

Product	£Price	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



## Headphones

**T**here 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

generally as good sonically.

Another means of distinguishing different types is the way they sit on your head. There are three styles: circumaural models enclose the ear and rest on the side of the head; supra-aural designs feature a flat pad which presses on the outer ear (pinna); and intra-aurals rest inside the ear itself, and are popular with personal stereos.

## Headphones

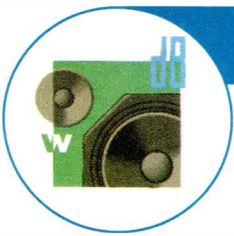
Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
AKG K44	42	<b>A</b> Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural	•	•	•	•	99
AKG K135	46	<b>A</b> The K135s don't live up to the usual AKG standards, 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 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
▲ 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
▲ 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



# Headphones continued

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
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
Beyer DT311	45	<b>A+</b> Uncharacteristically tight, unrefined sound quality from otherwise well engineered 'phone	Supra-aural	•		•		133
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	119	<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
▲ Jecklin 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
▲▲ Jecklin 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
▲ Jecklin Float Model Two	99	<b>G+</b> Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. The 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	65	<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
Koss TD/60	30	<b>A-</b> AM radio like bandwidth limitations and colourations, and rather flaky build	Supra-aural			•	•	133
Maxell HP-3000	30	<b>P</b> Solid, smooth sounding but congested and undynamic. Includes in-lead controls.	Supra-aural			•	•	133
▲ Pioneer SE-400D	37	<b>G-</b> Acceptable if unexciting all-rounder, with good long-term comfort levels.	Supra-aural			•	•	133
▲ Ross RCH-300CD	20	<b>P</b> In-lead controls are the highlights of this shoddy, sometimes aggressive sounding design.	Supra-aural			•	•	133
▲ Sennheiser HD320	40	<b>E</b> Superb value: articulate, accurate and musically effective, but localisation on ears can be uncertain.	Supra-aural	•		•		133
▲ 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
▲ 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-CD450	45	<b>G-</b> Fair acoustic isolation and comfortable circum-aural construction, moderate sound quality	Circumaural			•	•	133
▲▲ 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
▲ 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/SPD-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 SR606	40	<b>G+</b> Although slightly overblown at times, this model is easy on the ears and essentially enjoyable.	Circumaural	•		•		133
▲▲ 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

## Loudspeakers



▲▲ **Best Buy**  
▲ **Recommended**

Last item in the hi-fi chain, to some extent the loudspeaker is merely the slave of what has gone before, capable only of reproducing a signal as good as it is fed. Nevertheless the distortions (colorations and stereo effects) introduced by loudspeakers (and rooms) tend to be more immediately obvious than those anywhere else in the chain, so careful choosing according to taste is very important.

The average loudspeaker consists of a smallish

enclosure, much of which may have begun life as part of a tree, plus a couple of drive units hidden behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. Variations on the above formula are specifically identified in the entries. The designer's primary task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the

bass extension (how low does it go), shown as 'bass from', for the given box size. After that such subtleties as coloration (or lack of it) and dispersion come into the equation.

Careful placement of the loudspeakers within the room is as important as the initial choice of model. See siting columns for guidance. For good stereo they need to be more or less the same distance from nearby walls. Models not ticked as 'floorstanding' will require rigid stands.

## Loudspeakers

Product	£Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site close to wall	Site in free space	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
▲▲ 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	300	<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/B	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/B	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
▲ 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 DM600i	180	<b>A+</b> Smart cosmetics and a very even balance overall, but dynamically rather bland; amplifier current demands are quite high	35x20.5x25	25	88			•	135



# Loudspeakers continued

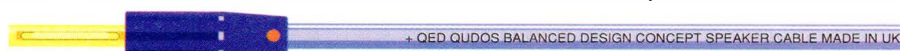
Product	£Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
B&W 610i	250	A Large bookshelf model has fine bass extension and a smooth, well balanced but slightly heavy and laid back sound	49x23.5x31	28	89	•	141
▲ B&W DM620i	399	A+ Good material value, this compact floorstander has a beautifully voiced midband, less happy bass tuning	77x24x32	40	89	• •	126
▲ B&W Matrix 801	3500	G+ Lacks the transparency of the best panels, and the drama of the best dynamics, but is something of an acoustic tour de force	77/99x56x43	<20	86	• •	81
▲ B&W Matrix 805	845	G Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	98
▲ Bose 305	430	G- A bit of an oddball, fine dynamic liveliness and a good room match more than make up for the strange stereo imaging and treble	28x45x23	40	88	•	78
Bose 401	500	A Cheaply built but distinctively styled semi-omni floorstander suffers from heavy midbass but still sounds lively and open	78.5x30x28.5	28	89	• •	110
Bose 901 MK6	1650	A The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Boston HD5	139	A Tiny and prettily shaped miniature has an attractive lack of boxiness, but is a little short of drama and dynamic drive	25x16x18.5	30	86	•	110
▲ Boston Acoustics SW10	449	G- Clever powered subwoofer system integrates well and improves system loudness and power handling	50x28.5x42	35	NA	• • •	126
▲ Cabasse Bisquine	600	G+ Classy French large bookshelf speaker has great coherence and dynamic grip, but a rather mid-forward overall character	48x26x30.5	30	91	•	110
▲ Cabasse Skiff	1500	G+ Large floorstanding three-way gives great sensitivity and bass extension with fine dynamic grip	100x30x36	25	92	• •	122
▲ Canon S-30	180	A+ Clever and unusual moulded design has attractive lively coherence, along with 'wide imaging stereo' effect	27x22.5x23.5	50	88	•	114
▲ Canon S-50	250	A+ Only a small cone miniature at heart, the fascinating styling and extended sweet spot feature make it utterly original.	30x24(diam)	48	84	•	102
▲ Castle Chester	650	G+ A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	• •	98
▲ Castle Durham 900	280	G Lovely veneer and lots of engineering create a very upfront, coherent and exciting sound — maybe too much so for budget systems	40x21.5x24	45	89	•	135
▲ Castle Howard	999	G+ Aply fills the price/size/sound gap between Chester and Winchester; a spacious semi-omni with a rich, laid back balance	104x23x35	25	87	• •	132
▲ Castle Trent II	190	A Very classy finish for the price, plus a sound that passes muster without setting anything much alight	33.5x18x20	50	88	•	122
▲ Castle Winchester	1499	G+ Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25	87	• •	90
▲ Castle York	349	A+ Pretty little real wood compact has an engaging transparency, good balance and fine timing, could do with more authority	43x22x26	30	86	•	110
▲ Celestion 1	109	A Pretty basic performance but at a very basic price — it all sounds a bit scrappy and untidy, but its heart's in the right place	27.5x16x21	50	87	•	114
▲ Celestion 3 MkII	130	A+ Smooth and polished by budget speaker standards, if a bit laid back for some tastes	31x18.5x20	45	87	•	130
Celestion CS135	139	A- Compact midway passive subwoofer lacks serious bass extension; for high sensitivity speakers only	52x19x34	45	88	• • •	128
▲ Celestion 15	389	G Big box and bang for your bucks, short on subtlety and control, but long on both enthusiasm and perceived vinyl wood grain	103x20.5x25.5	28	90	• •	114
Celestion 9	269	A Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	102
Celestion SL12Si	629	A Elements of fine sound quality, but this 'grown up' SL6 variation has a lumpy response alongside its improved power handling	53x20x27	50	85	•	66
Celestion SL600Si	820	G Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52	82	•	68
Celestion SL6Si	429	A+ This stereotype luxury compact can sound a bit dull and congested, but really opens up on Slate Audio stands; favours CD	37.5x20x25	30	86	•	94
Celestion 300	1099	G Splendid bass extension and fine panel-like openness and transparency, but dynamics and timing are suspect, balance very laid back.	100x21x31	<20	86	•	118
Dali 102	230	A Attractive bookshelf model has fine midband focus and bass extension, but treble's a bit restrained and bass a bit detached	37x21x25	30	86	•	114
Dawn Chorus FS	698	G Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	• •	11
Dynaudio Contour 1.3	1199	G Heavyweight luxury finish bookshelf model has good scale and weight but is pricey and a bit ponderous	38x20.5x29	28	86	•	122
▲ Epos ES11	395	G Integral baffle/driver to give a remarkable combination of low coloration, transparency and speed; bass is a bit shy	37.5x20x25	45	86	•	94
▲ Epos ES14	595	G+ Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25	85	•	98
▲ Faraday FS1	225	A+ Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45	86	•	114
Faraday FS5	575	G Pricey and ugly, but with its own sonic charm, thanks to substantial influence of the concrete enclosure has upon the sound	46x27x26	28	90	•	102
Faraday Siren	375	A- Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48	87	•	94
▲ GLL Maxim	119	A Budget miniature offers well balanced strengths and few weaknesses at a very realistic price; a bit feeble	26x17x20	30	85	•	122
▲ GLL Mezzo	160	A Good value budget compact has splendid midband but foxy extremes; dull treble could suit budget system well	37x21.5x23.5	40	89	•	141
Harbeth LS3/5A	539	A Still a classic miniature, though not to every taste, and none the better for the recent update under our listening conditions	30.5x19x16	60	81	•	66
▲ Harbeth HL-P3	479	G Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smearing sub-miniature	31x19x17	23	82	•	118
▲ Harman-Kardon LS 0200	150	A Laid back to a fault but entertaining nonetheless, and a big box for the price	38x21x29	30	86	•	130
Harman-Kardon LS 0500	300	P A mug's eye-ful — huge box for the price with loads of bass but very little presence: unacceptably unbalanced, or high infidelity	105x21x25	22	91	• •	135
▲ Heybrook Prima	130	A+ Neat and discreet miniature delivers fine coherence, pace and timing, though balance is a trifle forward and bass a bit light	29x19.5x18	50	86	•	110
▲ Heybrook Quartet	555	G Beautifully presented and built large bookshelf model with good sensitivity and a lively, forward sound	41x24x23	48	89	•	122
▲ Heybrook Sextet	1099	G+ Engagingly coherent and a highly analytical, partly due to distinct and t always comfortable upper-mid forwardness	96x27x20	25	85	• •	102
▲ Heybrook Solo	189	A+ Discreetly styled, sounds a little untidy in both bass and treble but handles complex rhythmic material much better than most	36x23x22	28	87	•	90
▲ Heybrook Trio	359	G Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	118

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## Loudspeakers continued

Size: HxWxD (cm)  
 Site Sensitivity (dB)  
 Site close to wall  
 Site in free space  
 Floorstanding  
 Issue No.

Product	Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site close to wall	Site in free space	Floorstanding	Issue No.
Impulse H7	785 <b>A</b>	Ultra-compact horn has fine midband contrasts but very little bass and detached treble; gives amplifiers a hard time	87x15x30	45	85	•	•	132
Infinity Kappa 6.1i	995 <b>A</b>	Good extension and laid back balance from high-tech drivers in class cabinet, but bass is fat and slow and dynamics unconvincing	97x30x24	25	89	•	•	132
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 sub	499 <b>A</b>	Cute but pricey amplified subwoofer is too small to deliver real bottom octave grunt	34x34x34	40	NA	•	•	128
Jamo Comet 40.3	130 <b>A</b>	Pretty presentation and a strong box, but poor driver fixing. Decent if bright sound	32x20x22	48	86	•	•	130
Jamo 447	500 <b>A-</b>	Very prettily styled, but build and sound quality is disappointing for the price	81x19x29	40	89	•	•	138
Jamo 707	900 <b>G-</b>	Superb styling and cosmetics but indifferent build and engineering quality; decent balance apart from detached bass	105x26x39	25	88	•	•	132
JBL Control 1 Plus	250 <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 L20J	800 <b>G+</b>	Lovely if pricey bookshelf model has that old JBL magic, full of bounce and brio, needs a good quality stand and can sound a bit heavy	44x26x28	30	87	•	•	138
JBL ti1000	1500 <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 Gold Monitor	80 <b>A</b>	Great sound for pound value through bass and midband, but the top end's rather coarse	27x18x18	50	85	•	•	130
▲▲ 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
▲▲ PW P1	170 <b>A+</b>	Longstanding design is remarkable material value (real wood etc) and sounds pretty good too — a touch aggressive maybe	43x26x24.5	40	87	•	•	141
▲▲ 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
JPW Ruby 1	500 <b>G</b>	Very pretty but pricey luxury metal-cone miniature has good, if slightly edgy balance	32x19x21	42	85	•	•	139
▲ 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
▲ KAR Volante	600 <b>G+</b>	Beautiful real wood floorstander doesn't sound as big as it looks, sound is coloured but lightning fast and great fun	88x21x27	40	88	•	•	138
▲ KEF 104/2	1595 <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 Q50	500 <b>A</b>	Compact twin-driver floorstander with Uni-Q treble, and a rather midbass heavy overall balance	84x19x28	30	88	•	•	139
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
▲ Kenwood LS-770G	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 Kaber	1298 <b>G+</b>	Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforgiving	89x19x29	25	85	•	•	118
▲ Linn Keilidh	595 <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 SMGa	668 <b>A</b>	Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85	•	•	46
Meridian Argent 1	995 <b>G+</b>	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 <b>G</b>	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 <b>A</b>	Pricey active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA	•	•	46
Mission 731	130 <b>A-</b>	Good looking and cleverly conceived high-tech miniature sounds best when driven hard; could have more brio	31.5x18x20	50	87	•	•	141
Mission 732	200 <b>A</b>	Attractive presentation but a rather dull and thick sounding speaker, and a tad pricey too	40x20x30	40	87	•	•	141
▲▲ Mission 733	300 <b>A+</b>	Stylish floorstander represents a lot of speaker for the money, and sounds pretty good too	86x20.5x31	45	87	•	•	139
Mission 751	300 <b>A</b>	Attractive luxury miniature has great sonic potential, but our review samples have been marred by sample variations	32x17x27	45	86	•	•	126
▲ Mission 752	500 <b>G+</b>	Brilliant style and packaging, great engineering and build, plus a sound quality that can give the 753 a run for its money	90x20x25	45	89	•	•	138
▲ Mission 753	700 <b>G+</b>	Gorgeous presentation and potential for open transparency. Floorstander with lots of drivers that gives lots of loudness	90x22x30.5	45	88	•	•	114
Monitor Audio MA200	200 <b>A</b>	Cute but pricey sub-miniature sounds lively and entertaining but uneven and obviously coloured; best for small rooms	27x16.5x20.5	50	85	•	•	141
▲ Monitor Audio MA201	250 <b>A+</b>	Goodlooker with solid engineering sounds lively and coherent with plenty of power handling, but also a bit shut-in and coloured	40x22x26	40	89	•	•	135
▲ Monitor Audio MA202	450 <b>G-</b>	Uneven but informative and easy-listening floorstander delivers decent scale from big vinyl box	89.5x22x28	28	88	•	•	139
Monitor Audio MA1200 Gold II	1200 <b>G</b>	Pricey but classy floorstanding variation on MA800 theme; beautifully voiced midband, heavy midbass	93.5x17x27	28	85	•	•	122
▲ Monitor Audio Studio 6	800 <b>A+</b>	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 MS05	110 <b>A</b>	Tiny and hence bass light but fine voicing at a competitive price; could well suit the smaller room	26x17x18.5	50	86	•	•	141
▲ Mordaunt-Short MS10	130 <b>A</b>	Hi-tech baby has fine bass/mid integrity but the top end is less appealing	30.5x18.5x21	50	86	•	•	130
Mordaunt-Short SW-1	150 <b>A-</b>	Prettily finished and inexpensive passive subwoofer is only really useful with sub-miniature speakers	24x58x25	40	85	•	•	128
▲▲ Mordaunt-Short MS20	180 <b>G</b>	Sober 'bookshelf' model uses hi-tech plastics to deliver a notably good midband at a very sharp price — a fine all round compromise	36.5x21.5x22	40	87	•	•	135
Mordaunt-Short MS50	540 <b>G-</b>	Big value big box with fine engineering content and big lazy, laid back sound; lacks charisma	91x25x33	22	86	•	•	138
Morel Bassmaster 602	1200 <b>G+</b>	Superbly built compact stand-mount, did well in listening tests but suffers (enjoys?) upper midband peak	24.5x40x22.5	25	84	•	•	114
▲▲ Musical Technology Kestrel	250 <b>A+</b>	Cute little metal cone floorstander brims with clever ideas; sounds very clear and clean if cautious	80x2-20x19	40	84	•	•	139



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## LONDON

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# Loudspeakers continued

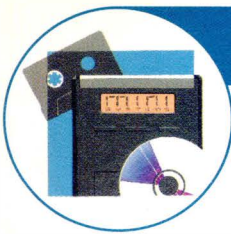
THE DIRECTORY

Size: HxWxD (cm)  
Sensitivity (dB)  
Site in free space  
Site close to wall  
Floorstanding  
Issue No.

Product	Price	Grade	Comments	Size: HxWxD (cm)	Sensitivity (dB)	Site in free space	Site close to wall	Floorstanding	Issue No.
NAD 801MM	100	A-	A rather undistinguished sub-miniature with low sensitivity and indifferent sound quality	27x18x18	48	84	•	•	130
▲ NAD 804	320	A+	Good value compact floorstander sounds lively and coherent, but quite coloured due to uneven balance too	75x20x26	25	89	•	•	126
Naim IBL	895	G	This tiny floorstanding wall mount delivers outstanding dynamics, speed and detail, marred by pronounced upper mid forwardness	80x18x15-20	30	84	•	•	94
▲ Naim SBL	1708	G+	Impressive scale, full bandwidth, coherent, attractively discrete, coloured midband, very well balanced and agile	88x26.5x17-27	25	86	•	•	102
▲ Neat Petite	525	G+	Far from perfect, but one of the most entertaining and enjoyable speakers around, colorations notwithstanding.	30.5x20x18	33	86	•	•	102
Origin Live OL1B	290	A+	Pretty little miniature delivers a punchy and dynamic midband, but costs quite a lot for the engineering on offer	31x18.5x22	45	89	•	•	135
▲ Origin Live OL2A	469	G	Compact floorstander sounds open, transparent and evenly balanced; needs a big amp but enjoys hard driving	82x19x19	25	85	•	•	122
Origin Live OL1	499	G	Luxury miniature has very good overall balance, sacrificing sensitivity to achieve remarkable bass extension for the box size	30.5x19x21	25	82	•	•	106
▲ Pioneer S-4UK	250	A+	Latest version now balances pretty well, with a lively and coherent bass light sound; dull packaging	37x21x27	42	88	•	no	139
▲ Polk LS50	800	G	No enthusiast tweaks here, but plenty of power and beautiful overall balance from a good looking compact floorstander	84x23-27x29.5	25	90	•	•	138
Polk LS70	1200	A+	High sensitivity and lots of loudness potential, but in-room balance has far too much midbass boom; mid and treble are very laid back	96x31x37	22	91	•	•	132
Polk RM 1000W	349	A-	Not a true subwoofer at all, but rather the bass section of polk's elegant upmarket three box speaker system	31x52x33	45	90	•	•	128
▲ Professional Monitor Co LB1	998	G+	Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	•	•	110
Professional Monitor Co AB1	1600	G	Bulky stand-mount transmission line has lovely panel-like transparency, slightly shut in balance, and needs a big room	79x27x43	22	89	•	•	114
▲ Quad ESL-63	2384	G+	This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	•	•	60
▲▲ REL Strata	499	G+	Outstandingly value and performance active subwoofer adds serious bass unintrusively to any small speaker system	52x42x31	<20	NA	•	•	128
▲ Rega EL8	298	G	Kyte drivers in compact floorstander give more bass but a shade less coherence; good for small rooms and budget systems	75x16.5x21	55	86	•	•	122
▲▲ Rega ELA	500	G-	Classy new styling for one of the original compact floorstanders — lovely midband life and coherence if a bit bright and lightweight	84x20x20-31	40	87	•	•	139
▲▲ Rega Kyte	198	G	Has splendid timing and coherence, sounds very explicit and informative, if a bit bright and short of grunt	31x19x20	50	87	•	•	114
▲▲ Rega XEL	1040	VG	Looks good, measures well and sounds great too; balance is bright but even, with delightfully bass-to-mid coherence and timing	102x21x33	40	89	•	•	132
▲▲ Rogers LS2a/2	229	G	Balance is a bit warm and rich but 2a/2 has delightful mid-to-treble coherence and transparency, and more welly than Mk1	35.5x23x22	30	84	•	•	106
Rogers LS4a/2	300	A+	Civilised but a trifle lazy, this large bookshelf model hasn't quite the timing or agility to be particularly engrossing	43x25.5x25.5	25	86	•	•	110
Rogers LS6a/2	399	G	Largish stand-mount is well built, measures well, good material value, but sounds a bit heavy and lacklustre	51x28x29.5	22	87	•	•	114
Rogers LS8a	499	A+	A mixed bag, with plenty of scale and welly but lacking the subtlety, clarity and agility delivered by some rivals	89x25.5x25	48	91	•	•	102
▲ Rogers Studio 3	450	G	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 5	700	G-	Luxury finish bookshelf size model has genuine monitoring capabilities, but can sound a little thin and unromantic	44x24.5x24.5	40	88	•	•	138
▲ Rogers Studio 7	880	G	Latest variation on classic BBC-monitor theme looks old fashioned but has beautifully voiced, laid back sound	63x30.5x30.5	30	88	•	•	122
▲ Roksan Ojan 3	895	G+	Squat, stylish and black, with unusual tweeter decoupling; great bass extension and flat but somewhat uneven balance	78x28x45	<20	85	•	•	132
Royd Topaz	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
▲▲ Royd Minstrel	229	G	Imaginatively packaged super-slimline floorstander. Not much welly or loudness but fine coherence and timing; a bit bright	69x18x12-24	30	85	•	•	135
Royd Abbot	666	A+	Engaging and dramatic dynamics and fine transient coherence are hampered by a rather coloured mid-forward balance	83x20x34	43	88	•	•	118
Ruark Templar	479	A+	Compact floorstander with striking baffle has decent bass/mid but dull treble; could tame over-bright system	73x19x27	25	85	•	•	122
▲ Ruark Tallman 2	700	G	Less ideologically committed than some compact floorstanding rivals, its key strength lies in fine all round compromise	86x25x31	30	86	•	•	118
▲ SD Acoustics SD3	399	G	Port firmly blocked, the new SD3 has the agility and charm of a quality miniature, with good bass extension but low sensitivity	38x19.5x29	25	83	•	•	106
▲ SD Acoustics SD5	1235	G	Bass tuning and coherence suspect but forward midband is delightfully smooth; high class drivers include ribbon tweeter	112x20x30	30	86	•	•	132
▲ SD Acoustics SD1	1650	G+	A large scale, airy and unusually detailed system with excellent dynamics. A warmer balance than original model	123.5x38.2x32	50	90	•	•	60
SD Acoustics Ribbon	2950	G+	Amplifier sensitive, Ribbon is a lively and loud hybrid marred by some colorations; some like it, others don't	152x30x(15-30)	30	91	•	•	81
Shahinian Arc	1675	G	Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	•	•	110
Snell JIII	770	G	Dated styling belied by fine sensitivity and bass extension, and a lively if slightly untidy and not quite coherent sound	58x33x25	30	89	•	•	118
▲ Spendor S20	579	G	Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	•	•	102
Spica Angelus	1295	A	A little bass shy and soft in the bass and lower mid, otherwise tidy, extremely lively and fluid, if uneven overall	116.8x53.3x26	50	86	•	•	60
Spica TC50	649	G	This triangular-profile 'grown up' miniature is a shade boxy and laid back but has good rhythmic and musical integrity	40.5x33x29	55	88	•	•	71
Spica TC50SE	849	G	A heavily UK-modified TC50, the SE sounds less boxy and more spacious, but lacks some of the urgency of the standard model	40.5x33x29	55	88	•	•	71
▲ Systemdek System 937	600	G	Compact real-wood floorstander incorporates transmission bass loading to give fine bass extension and an open midband	93x22.5x25	25	88	•	•	138
TDL NFM	120	A-	A disappointing underperformer in our tests, at a price that's not very nice either	27x18x18	50	86	•	•	130
▲ TDL RTL3	400	A+	Bargain price floorstander has rich, heavy and bright sound with good scale and fine basic neutrality	92x20x38	25	88	•	•	126
TDL Studio 0.5	499	G	Tiny floorstanding transmission line has good agility but doesn't provide the coherence or even balance of Studio 1	55x20x30	40	85	•	•	94
▲ TDL Studio 1	699	G	Genuinely extended bass from a compact enclosure, very detailed but a shade clinical and detached in presentation	76x23x33	25	84	•	•	78
▲ TDL Studio 1M	899	G+	Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	•	•	118
▲ TDL Reference Monitor	1999	G+	Fine solidity and good accuracy, with great bass extension. Needs a big room and can sound a bit lazy and a shade tinkly	118.5x30x47	28	85	•	•	66
▲▲ Tannoy 631	150	A+	High class miniature is beautifully balanced, open, unboxy and quite lively, if a bit short of real muscle	34x19.5x17	40	86	•	•	141
▲▲ Tannoy 632	190	G	Clever cabinet shaping avoids boxiness and promotes focus and imaging; fine bass extension but tricky stand compatibility	41x14-24x23	25	87	•	•	135
Tannoy 633	330	A+	Compact floorstander with slammin' bass — real extension and coherence without boom — but dubious midband	74x24x23	<20	87	•	•	139
Tannoy 638	599	G	Big value vinyl big box has pretty good balance and lots of loudness capability, but needs a good amp and bass isn't entirely convincing	94x16-29x27	25	90	•	•	138
▲ Tannoy Westminster	6000	G+	These awesome horn loaded speakers are remarkably controlled and impressive, if only suited to a few pockets and rooms	Huge	38	96	•	•	Col
Technics SB-EX2	200	A	Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	•	•	98
▲ Thiel SCS	1069	G+	Luxury piano-gloss compact sets class-leading standards for coherence and communication, can sound a shade dark and shut in	40x22x23	45	87	•	•	114
Thiel CS1.2	1219	G	Elegant compact floorstander has fine balance and dynamic range, but transient timing and dynamics are less convincing	94x27x27	30	86	•	•	118
▲ Totem Model One	995	G	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	31x16.5x23	28	86	•	•	122
Vandersteen 2Ce	1395	G+	This compact American floorstander's elegant staggered baffle arrangement contributes to a refreshing freedom from boxiness	100x30.7x25.6	23	87	•	•	86
Visonik David 6001	163	P	Sharp styling but the complex grillework worsens a sound which starts off with too much top and not enough bottom	20x12x13	130	87	•	•	74
▲▲ Wharfedale CRS3	89	A+	Loads of fun — a remarkably coherent and lively performer at any price; pity it doesn't look prettier	38x22x18	50	88	•	•	122
Wharfedale Diamond V	130	A	This miniature is smoother than most, but rather stodgy with it, inspiring little enthusiasm among our listeners	27x18x20	50	86	•	•	114
▲ Zyp A1	199	A+	Cute metal cased micro-miniature is quite coloured but great fun, with surprising dynamics and fine wall-loaded room balance	22.5x14.5x13	30	85	•	•	110



# Systems



**S**ystems is a generic title that we've chosen to describe any form of complete system package. Fundamentally what we're talking about here is midi and mini systems, you know those all singing all dancing, lights blazing systems that hi-fi snobs are allergic to. Sold on the basis of their ability to play virtually all mediums at the flick of a remote control switch stack systems offer a plethora of features, and the dearer the system the more complex they tend to

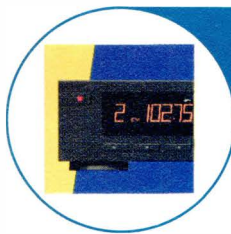
become. With things like double cassette decks, multi preset tuners, CD players and graphic equalisers supplied as standard the big boys of the stack world offer such luxuries as Surround Sound, separate chassis for different components and occasionally a record player. They usually have a few line inputs for extra sources and a few are available without loudspeakers. As the latter are often the weakest part of a stack system buying good quality speakers separately will bring

worthwhile improvements. The section headings for stack systems include size of the complete stack without speakers and rated output per channel — where a system has more than two channels this is indicated in the comments. Tuner presets and the existence of a remote control are self explanatory. A blob in loudspeakers shows that they supplied, an "o" indicates that they are optional. The final column is for those of you with records to play.

▲▲ **Best Buy**  
▲ **Recommended**

## Systems

Product	£Price	Comments	Size: HxWxD (cm)	Rated output Watts	Tuner presets	Remote control	Loudspeakers	Turntable	Issue No.
▲ Denon D110/S	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	600	<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
▲ Kenwood HD-1000	1000	<b>E</b> Mini lifestyle system, well built with minimalist facilities and exacting performance standards all round	30x27x35	40	30	•			131
Marantz 1020	1000	<b>G</b> Component lifestyle system which is as elegant on audition as it is to look at	22x42x32	30	20	•			131
Onkyo L-909	1200	<b>G</b> Simple yet flexible lifestyle mini system suffers iffy cassette deck set-up, but otherwise satisfies	38x28x32	40	30	•			131
Philips FW91	999	<b>A+</b> Good looking and performing package rendered expensive by inclusion of DCC deck	37x26x32	60	30	•			125
▲ Technics SC-CH950	1000	<b>A+</b> Classy if rather bland allrounder includes useful Dolby Pro-Logic AV capabilities	42x27x34	60	39	•	•		125



# Tuners

**T**he radio medium operates at a much lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live Prom concerts can rival all other sources from a hi-fi perspective.

Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for certain transmissions in the UK.

Something of a hi-fi afterthought, tuners are often selected merely to match a chosen amplifier

cosmetically. However, the task they carry out is far from simple, combining the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on local reception conditions, but money invested in a high quality outside aerial system is well spent.

Tuners come in two basic types. Analogue models tune gradually (and usually manually) across the bands, and can have analogue or digital displays; they are often preferred for sound quality,

and are certainly best for AM bands. Digital tuners offer convenient automatic tune facilities and preset memories.

The 'Presets' column heading shows how many different frequencies a tuner can memorise for instant station access. FM, LW and MW shows which wavebands a tuner can access. 'Signal strength meters' are useful for aerial alignment. 'Automatic tuning' means that a tuner can seek out signals for you.

▲▲ **Best Buy**  
▲ **Recommended**

## Tuners

Product	£Price	Comments	Presets	FM	LW	MW	Signal strength meter	Automatic tuning	Manual tuning	Issue No.
Aiwa XT-003	120	<b>A-</b> 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	<b>A</b> Decent enough performance all round given the modest price, though RF tweaks have limited value	24	•	•	•	•	•	•	129
Arcam Delta 280	350	<b>G+</b> Fine sound quality marred by mild synthesiser whine; RF performance only average, remote £60 extra	20	•			•	•	•	120
▲▲ Audiolab 8000T	700	<b>VG</b> Unusually combines fine sound quality and RF performance (inc AM); superb ergonomics are a joy to use	39	•	•	•	•	•	•	120
Aura TU-50	300	<b>G</b> Tonally neutral, but with rather poor imaging and a certain woodenness to the sound.	16	•				•		109
▲▲ Denon TU-260L	120	<b>G+</b> Bare minimum of features. Careful designwork promises a surprisingly open and vivacious sound, so don't overlook it!	20	•		•		•	•	93
▲ Denon TU-580RD	220	<b>G</b> Fine feature package including remote and RDS, plus excellent RF performance and decent sound quality	30	•		•	•	•	•	120
Harman Kardon TU9200	219	<b>A</b> The listening panel appreciated its liveliness, but found it a little muddled.	32	•		•		•	•	109
▲ Harman Kardon TU9400	299	<b>G+</b> 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	<b>G</b> Good bass and detail, and good - perhaps slightly enhanced dynamics	24	•		•		•	•	109
JVC FX-362	140	<b>A-</b> Disappointing all round performance — watch out for aerial input overload in strong signal areas. Tuning knob unspecial	40	•	•	•		•	•	129
Kenwood KT2050L	150	<b>A-</b> Decent RF capabilities despite simple front end. Sounds a bit bright and ergonomics are a bit complex	30	•	•	•		•	•	129
Kenwood KT-3050L	170	<b>A</b> Excellent RF performance and plenty of features including RDS, but did sound rather ordinary under our conditions	39	•	•	•	•	•	•	120
▲ Linn Kremlin	1995	<b>E</b> Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	80	•			•	•	•	120
▲ Magnum Dymalab FT101	825	<b>G+</b> Although expensive for its fairly minimum set of facilities, its excellent sound makes up for what it lacks elsewhere	0	•			•	•		72
Marantz ST-53	170	<b>A+</b> Sweet sound could well satisfy audiophile sensibilities, but selectivity is not great	59	•	•	•		•	•	129
▲ Meridian 604	1350	<b>VG</b> Unique digital convertor makes most sense in Meridian system context; smooth sweet sound with fine front end	30	•			•	•	•	120
▲ Naim NAT 01	1453	<b>E</b> There may be better sounding tuners in the world, but we have yet to hear one	0	•				•		50
▲ Quad FM4	434	<b>G+</b> Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•				•	•	50
Quad 66	532	<b>G+</b> Very pretty and compact but technically unadventurous. Smooth sound but only makes sense in Quad system context	19	•				•	•	120
▲ Rotel RT-930AX	175	<b>G-</b> A competent rather than exciting performer, with low audible interference though slightly compressed and muddled sound.	20	•	•	•			•	108
Sherwood TX-3010C	120	<b>A</b> Lots of features and fine RF discrimination for price. Sound is communicative but inconsistently tacky	30	•		•	•	•	•	120
▲▲ Teac T-X4030	120	<b>A</b> Not exactly special, but still a well balanced, tolerable and capable allrounder at a very reasonable price	20	•		•		•	•	129
Yamaha TX-350L	130	<b>A-</b> Enticingly pretty and compact presentation but performance isn't great; beware of aerial overload	40	•	•	•	•	•	•	129





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ST72 £299  
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D182 £199

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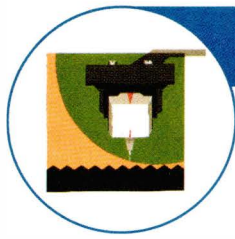
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# Turntables – cartridges



**C**artridges fall into two groups: high output models, capable of working directly into most amplifiers and categorised as having a normal (N) output, and more expensive low and very low output models (L, VL). Stereotypically, low output cartridges use the moving coil principle of operation, have better mechanical integrity and tighter tolerances, and give better performance but

at much higher cost. With CD now the dominant medium many amplifiers are no longer equipped with the necessary phono input for a cartridge and a separate phono stage is necessary. Valve designs need either an extra head amp or transformer to cope with the low output of moving coil cartridges.

Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs

benefit in overall balance from optimised amplifier capacitance loading. The mechanical characteristic of cantilever compliance ('springiness') needs to be considered in the light of the effective mass of the tonearm, and to achieve a good match compare the effective mass requirements figures with the actual effective mass of specific arms. 'turntables' and 'tonearms' sections.

## Turrtables – cartridges

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲▲ Arcam C77	30	<b>A+</b> A sensible moving magnet package with good bounce at a competitive price	6-16	N	•		48
▲▲ Arcam C77Mg	40	<b>A</b> 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	<b>A</b> 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	<b>A+</b> 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	<b>E</b> One of the best, giving 'an extraordinarily relaxing midrange clarity', needs a transformer	8-18	VL		•	100
▲ Audio-Technica ART1	850	<b>VG</b> 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	<b>A</b> Better suited to pop recordings, this MM bears some of the sonic hallmarks of the Linn K5	7-14	N	•		67
▲▲ Audio-Technica AT-95E	20	<b>A</b> Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ 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	450	<b>VG</b> Clear, detailed, neutral and generally very informative - excellent .	6-18	L		•	91
Dynavector XX-1	988	<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	988	<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
▲ 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
▲ Milltek Aurora	299	<b>G+</b> An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲▲ Ortofon 510	32	<b>G+</b> For the price, a good blend of virtues weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	55	<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	85	<b>G+</b> Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
Ortofon 540	110	<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	85	<b>G</b> "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	110	<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	950	<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
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
▲ 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



# Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
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/High	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



▲▲ **Best Buy**  
▲ **Recommended**

## Turntables and tonearms

**S**pecialist turntables are what high fidelity sound is all about, CD may offer silent backdrops and flat frequency responses but they can't match the dynamics and superlative timing that serious turntable users take for granted. Turntables at the cheaper end of the market (sub-£350) tend to be supplied with matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices amongst the

separate motor units and tonearms. Careful partnering and set-up is essential for these components, but 'sympathetic' combinations exist.

The columns show from left to right, 'arm effective mass' relates to cartridge compatibility with regard to compliance (springiness) and is explained in the 'Cartridges' introduction. 'Suspended suchassis' — decks which have some form of internal isolation, generally in the form of

springs but occasionally more solid materials such as rubber. 'Manual' and 'Automatic' refer to the operational tendencies of the deck/arm combination — automatic high end turntables are as rare as hens teeth. 'Cartridge' — if one is supplied. 'Belt drive' as opposed to direct drive is the preferred method in most quality decks. An 'Electronic PSU' offers switchable speed change and a 'smoother' power supply for better sound.

## Turntables

Product	£Price	Comments	Arm effective mass (g)	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
▲ 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 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
▲ 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	NA	•	•			•	•	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	NA	•	•			•		67
▲ Pink Triangle Anniversary	1495	<b>E</b> Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny	NA	•	•			•	•	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	NA	•	•			•	•	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
▲ 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
▲ Systemdek IIX/900	230	<b>G</b> A high performance budget turntable which is particularly strong at fine detail resolution and imagery	NA	•	•			•		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	NA	•	•			•	•	103
▲ SME Model 20A	3763	<b>E</b> Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval.	10.5	•	•			•	•	118
▲ Thorens TD-3001/TP90SF	760	<b>G</b> Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas	NA	•	•			•	•	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 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	NA	•	•			•	•	72
▲ 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	NA	•	•			•	•	C91
▲ Well Tempered WTAT	1800	<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

## Tonearms

Product	£Price	Comments	Effective mass (g)	Height adjustment	Parallel tracking	Pivoted	Issue No.
▲ 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	1233	<b>E</b> Excellent in all respects, this arm arguably sets the standard for pivoted arms regardless of price	10.5	•	•		60



# Personal messages

## It's six months on, and Paul Messenger's case of French Rehd Fever shows no signs of abating...

In my rhapsody to the big Rehdeko 175 last November, I promised not to rabbit on *ad nauseam* about this new love affair of mine, and allow at least three months before taking stock. Well, I've managed six months with just one passing mention. My own pair has arrived and had enough time to blow the dust out of its coils, a whole variety of visitors have had the opportunity to sample the Rehdeko experience, and I've had the chance to put in plenty of flying hours with a wide variety of sources — and so on.

I think the consensus among generally rather bemused visitors is that I've probably taken leave of my senses. It's the strain of lounging around listening to hi-fi and all that. Most folks seem much happier with my wall-mounted 15-inch Tannoy dual-concentric drivers, which have built up quite a fan club and are no less inspiring in an altogether more conventional and hence acceptable way. But a significant minority have been intrigued and impressed by the RK175s; one commented that he might as well leave his Led Zep Live CD behind as he wouldn't be able to listen to it at home again.

As for myself, I've had no second thoughts, and my Rehdeko passion is running higher than ever. Also, my new versions (complete with factory damping) are significantly smoother and sweeter than the first pair I tried. Note the careful use of the comparative here — smooth or sweet they most certainly are not. Rather, the whole experience is intense going on extreme, but so emotionally involving I'll have to put up with that.

As I've stated many times before, it's not what I say but what I do that matters. Behaviour rather than bullshit provides the most valid evidence. Two facts stand out. The first is that I'm listening to more records (mostly on vinyl, but 'twas ever thus) and radio (especially R3), and watching less TV — all of which would seem to be good for the soul.

The second point might be the more significant, and has slightly perturbing implications. Since my living comes

mainly from reviewing speakers and TVs, the Rehdekos are often consigned to the store, sometimes for weeks at a time. Trouble is, I miss them so much I seize any excuse to slip them back in for the odd day, even though doing so is quite a hefty operation.

The added problem is that it's quite difficult to make the perceptual adjustment back to conventional speakers afterwards. It's not that I'm claiming the Rehdekos are superior — for the majority of people they probably never will be — but rather that they're so wildly different from anything else that it takes a while to reset the mental compass, altimeter and direction finders to something approaching normality.

However much I might enjoy the Rehdekos for pleasure and relaxation, it's virtually impossible to use them as any sort of meaningful yardstick or reference point for conventional commercial speakers. It's about as appropriate as trying to compare road cars against a Formula One racing car — entirely different rules apply.

But if Big Rehd proves deuced awkward in a speaker evaluation role, it's remarkably good at distinguishing between different source, accessory and amplification components. The dominant midband and relative lack of bass level and upper treble don't exactly help in figuring out what's going on at the bandwidth extremes, and the dry bass is bound to favour richer sounding amps, turntables etc — which may partly explain why I'm quite content to carry on with much the same Linn/Naim driving system that I've been using for years.

Admittedly, I've only explored one or two alternatives so far.

The Rehdeko's superb time-coherence, alongside truly righteous dynamics, ruthlessly reveal any congestion or smearing tendencies, with a transparency that has proved a real education. It's not that you can't get either of those factors in other exceptional speakers, it's just that the Rehdeko manages to combine them both in the one package and uniquely so in my experience.

It's that combination which has entirely seduced me. With 'normal' hi-fi, one is always conscious

of listening to reproduced music. It's often accomplished with considerable aplomb, but always just a fractal dimensional shift away from the real thing. The Rehdeko's sound may have more to do with PA than aplomb, but underlying the cosmetic deficiencies there's a shock of the real, a rightness and a believability which I find irresistible. Live rock recordings, which would normally be experienced via a PA system in any case, are particularly convincing.

There's also the way classical music has become more accessible, because of the way the dense midband textures opened up dynamically and temporarily, losing a lot of congestion and confusion in the process.

Meanwhile, the forward presence and early treble roll-off are probably just two factors contributing to noticeable voice coloration. Actual intelligibility is the best I've ever encountered, especially in the way it remains consistent down to the very lowest levels. However, I have yet to discover the extent to which this is itself a function of the presence peak.

It's a shame there isn't more bass. I've tried adding the fastest subwoofer I know — the Tannoy 625ALF — but even that couldn't really keep up, on vinyl at least, though it does give a worthwhile boost with movie soundtracks.

Although the experience is not always comfortable, the way Rehdekos seem to magnify differences is very intriguing. They not only highlight differences between components which are trying to do the same job, but between the various media themselves. FM radio's high spots are proving a lot of fun too, but with these speakers vinyl remains indisputably pre-eminent. However, the many iniquities of studio engineering are often all too embarrassingly obvious, which is tending to shift my perception of the entire Messenger record collection.

The loudspeaker is a multi-dimensional device, and trying to achieve the best possible performance in one direction invariably involves sacrificing ideals in some other respect. The Rehdeko compromise might be quirky in the extreme, but after discriminating the differences between the latest crop of ten litre, two-way, under-£200 vinyl covered boxes, I can sit back and let the RK175s rip out the earwax with a shocking dose of reality, warts and all — the perfect antidote to hi-fi ennui.

Will you look at the quality of those drive units!





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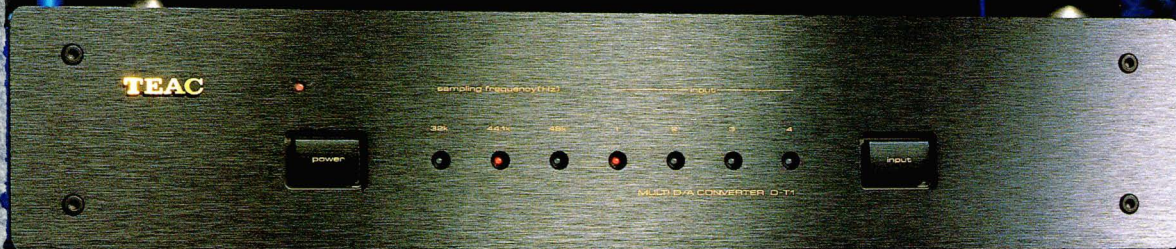
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