

HIGH CHOICE

32 PAGE BUYER'S GUIDE

FOR PEOPLE WHO TAKE THEIR SOUND SERIOUSLY



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EXCLUSIVE
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NATURAL



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WIN!

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TRICHORD CD OUTFIT
EXOTIC HI-FI CABLES
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JUNE 1995 £2.99 US\$6.95

MEGA TEST: 12 STUNNING SPEAKERS TO DIE FOR

The TEAC VRDS Range

The One System You Can't Beat!

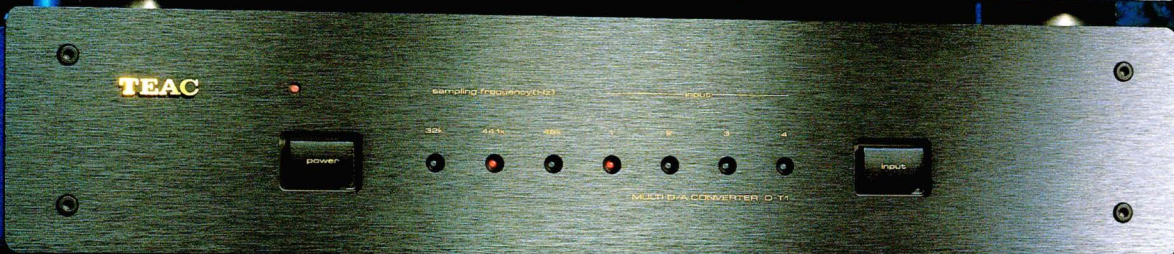
Everybody is aware of the huge success of the VRDS range of integrated CD Players and Transports. Now the VRDS players are complemented by a range of components which share the same outstanding build, engineering and sonic qualities

Everyone knows that the VRDS mechanism is the best CD transport in the world - Now there's no need to compromise with the rest of your system!



VRDS T-1 CD TRANSPORT

With the acclaimed VRDS mechanism, Highly rigid chassis and remote control - the TEAC ethos of sonic performance, build quality and ease of use are typified in the T-1



D-T1 D/A CONVERTER

The matching DAC for the T-1 uses Bitstream Conversion* in dual differential operation, a copper chassis to minimise RF interference and offers 4 digital inputs



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A-BX10 INTEGRATED AMPLIFIER

An Audiophile amplifier which gives superb dynamic power and performance. Featuring a balanced stereo input and a fully balanced circuit configuration, the A-BX10 offers 100 Watts per channel and an optional phono board for MM and MC cartridges

Please send me information on the TEAC VRDS range

Name

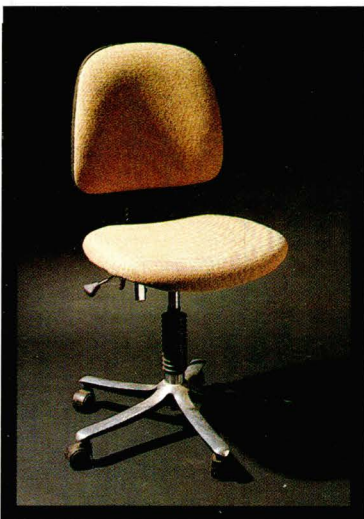
Address

TEAC 5 Marlin House, The Croxley Centre, Watford, Herts
 WD1 8YA TEL: 01923 819630 FAX: 01923 236290

* Bitstream Conversion is a trademark of the Philips Corporation.

Arboreal baton-wielder Stan 'Twiggy' Vincent bathes in the leafy frondescence of an audiophile orchard. Probably...

editor's chair



What's in this issue?

Elves have sweated for another month in the *Choice* grotto, to bring out a hand-sewn compendium of quality reading — for those who thirst after hi-fi righteousness. Behold:

✳ Jason Kennedy is the first journalist of Her Majesty's Realm to have an aural audience with Enlightened Audio Design's HDCD-compatible transport/DAC combo. Is it a good CD player? Is it a good HDCD player? Does it point the way forward for music? Find out on page 20.

✳ We have not one but two fabulous competitions this month, with prizes totalling more than £6,000. Just imagine what your CDs would sound like on the no-holds-barred Trichord CD combo we're giving away on page 54. Then dream how much better your system would perform if all its cables were replaced with top wires from Precious Metals — see page 29.

✳ On page 40, Paul Miller introduces his state-of-the-art computer test system, which is producing the amazing new colour graphs you've seen in our group reviews over the last couple of months. Paul's new kit uses techniques more commonly found in esoteric branches of engineering,

meaning that our tests are now the most advanced in the hi-fi world. Paul is getting deeper into the souls of CD players and amplifiers than ever before; my advice is to take time and read this feature a number of times to ensure proper digestion. Even though it contains explicit technical language, you'll find that, after time, and rather like one of those Magic Eye pictures, Paul's piece opens up a whole new world of electron-related understanding.

✳ On page 50 we begin a new series entitled Modern Classics. We felt time was long overdue to recognise the unique hi-fi products which are not just phased out after a few months, instead staying in production to please discerning listeners year after year. Linn's evergreen *LP12* and the Epos *ES14* are the first two candidates under scrutiny.

✳ Paul Messenger gets to grip with 12 'performance' speakers, all costing over £1,000. Turn to page 58 and find out what Our Man Of Kent makes of these prime prestige performers.

The cover's too bright

Magazine covers usually give a short but brutal hit of attraction, enticing potential readers to browse and hopefully buy. For once our masters have allowed us to offer a jacket that gives lasting pleasure as well as instant appeal.

This month's cover, produced by noted illustrators Archer/Quinnell, is more than just sizzling artwork — it's nothing less than a visual metaphor for hi-fi's music-extracting power. Look at the cover for the first time and all you'll see is a riot of colour. As your cognitive powers gather force, you'll start to discern the underlying patterns in what is actually a very subtle image. You'll be transfixed by the way elements combine to create an

image of intriguing richness.

Had we printed the cover on low-quality board with dull inks, the illustrators' effort would have been wasted. There would be no subtlety to perceive. And of course, precisely the same is true of music and reproduction systems. Unless the listener can open wide a window on the music, the most ardent strivings of Joe Rockstar and Emil Klassikalpianist are no more than the squawking of railway-station announcements. My recommendation is to settle down in front of your system with intoxicating refreshment and musical platter of your choice, then spend time sampling the three-dimensional soundstage of our magazine wrapping.

The New Deal

A couple of months ago I wrote in this column about how we are all members of the hi-fi relay team — manufacturers, magazines, consumers, dealers. Traditionally, the first three get lots of coverages in journals such as ours; the fourth rely for most coverage on the adverts they pay to publish. However, as the essential interface between manufacturer and listener, dealers deserve better exposure.

On page 46 Simon Davies reports how specialist hi-fi retail is changing to compete with increasingly sophisticated High Street multiples — and it's a win/win situation both for those who can sell enlightenedly, and those who wish equally to buy with impunity.

Pretentious waffle of the month

"Hi-fi is like a tree that just keeps on growing — its branches get thinner and thinner, and further and further out; there's a lot of obsession at the end of the branches..."

Stan Vincent, *The Observer* 'Life' magazine, 23 April 1995.

Getting in touch with Hi-Fi Choice

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SEE PAGE 85 IN THIS ISSUE

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SEE PAGE 53 IN THIS ISSUE

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SEE PAGE 87 IN THIS ISSUE

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SEE PAGE 86 OF THIS ISSUE

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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 at a glance guide to the plethora of mind-boggling audio goodies we've collated for your gratification this fair month. (Cover image by Archer/Quinnell)

contents

II Not just another CD player: this EAD combo sports the latest digital accessory — an HDCD decoder. P20

Enlightened Audio D

DSP-1000



THE FRONT END

6 Update

The latest summer fashions in hi-fi take to the catwalk. Oooh, 'ave a varda at those phono plugs — they'd be just fablosa with your amplifier, ducky.

12 Sessions

Malcolm Steward secretes his reviewing gland all over a bumper crop of audio stuff.

20 Statements

Is High Definition Compatible Digital the next step forward in CD? Plus bluesy rock from a top Norwegian amp.

24 Help

Our resident hi-fi doctor will diagnose your audio ailments. More fun than a wagon-load of Prozac.

29 Competition I

Cable your entire system FREE, thanks to Precious Metals.

31 Write On

Verb us, daddy-o, eight to the bar. Your letters!

52 Competition II

Win stacks of luvrly digital stuff from the top name in British numbers — Trichord.

Be afraid. Be very afraid. The cones are coming and they know about your *Love Over Gold* CDs. P58

COLUMNS

3 From the Editor's chair

Choiçenübergrüpfenführer Vincent does things with hi-fi that you would not believe...

35 Barry Fox

Barry comes down from the mountain with the ten Missed Commandments of the new disc formats.

37 Radiohead

Kevin Hilton discovers that digital workstations look set to change the face of broadcasting as we know it.

146 Personal Messages

Paul Messenger bids a sincere farewell to the late, great Raymond Cooke OBE.

Kicking off a new series the LP12 is one of our modern classics. P50

THE REVIEWS

58 Speakers

A dozen of the finest £1,000 — £2,000 loudspeakers do battle in the Paul Messenger Stadium. It's just like a sonic version of *Gladiators*, only with measurements.

FEATURES

40 The Knowledge

Techno-meister Paul Miller gives us the low-down on the new computerised test procedures which are putting *Choice* at the forefront of understanding.



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' MARKING OUT PREMIUM PRODUCTS

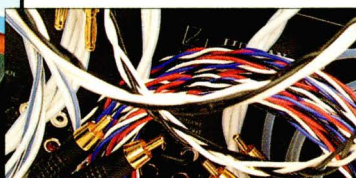
Our group tests aim to establish value for money based on absolute sound quality, build quality and measured performance. Products awarded the Best Buy swing tag will be of significantly greater value than alternatives in the same price band; both performance and construction will be exceptional. Products 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 multi-channel reproduction of music and the fusion of images and sound.



Get tangled up in Precious Metals cables for the price of a postage stamp. P29

CHOICE MATTERS

53 Subscriptions

How to get Hi-Fi Choice delivered to your door.

57 Next Month

How could you survive July without *Hi-Fi Choice*? Find out what's coming next.

85 Reader's Classified

The only place to buy the best in second-hand hi-fi.

86 Special Offers

The finest hi-fi goodies — exclusive to Choice readers.

91 Buyer's Guide

The most comprehensive list of current hi-fi products.

123 The Directory

All the current products that have been reviewed in Choice.

46 Deal me in

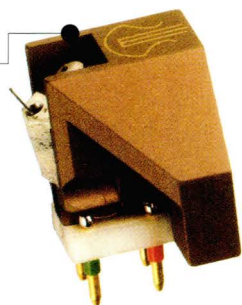
Simon Davies dives in, delves deep and discovers dealers. Read his complete memoirs from the front-line of hi-fi retailing.

50 Modern Classics

The first in a series, looking at long-standing products that refuse to lie down and be discontinued. This month, the Epos ES14 loudspeaker and the grand-daddy of them all, the Linn LP12 turntable.

You've read the hype, you've bought the T-shirt, now you can win the Trichord experience. P52

Funderbirds Are Bo. P12



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Having fought off Kitten Kong and mastered the ancient martial art of Ecky Thump, how will Tim, Graeme and Bill cope with the latest hi-fi goodies...? Malcolm Steward reports.

update

FFFancy that — Sony go for Full Feed Forward in new CDs.



FFFortless performance

Full Feed Forward is the hot buzz-phrase for Sony's new range of UK-developed CD players. Combined with the company's Advanced Pulse converter, FFF is said to reduce requantization errors in the name of better low-level information resolution.

The £199.99 *CDP-561E* also uses selected components and a clamped roller disc mechanism, while the £249.99 *CDP-761E* incorporates features such as the FET line-drive amplifier, uprated power supplies and operational amplifiers, and a display that can be

even be turned off.

Also new for the summer are two RDS EON tuners and a clutch of new Dolby S cassette decks priced from £179.99 to £279.99 — including a novel S-equipped twin-deck machine, the *TCWR-665S*. ☎ (01932) 816000.

More matrices

B&W has two new *800 Matrix* series loudspeakers designed to serve both the audio and home cinema markets. The £499 *Matrix HTM* is primarily a centre channel model, but is equally suited to any front channel position. Because of its high power handling and imaging abilities, it's also reckoned to be 'a natural' near-field monitor. The magnetically shielded speaker uses a Matrix cabinet housing a Kevlar cone bass driver and an externally mounted metal dome tweeter.

The *Matrix 800 ASW* subwoofer is more expensive at £1,495 but this pays for a Matrix cabinet with built-in 200W amplifier driving a twelve-inch Cobex cone bass unit. The speaker is magnetically shielded, featuring soft clipping to prevent overload along with separate volume and filter controls to match it to a range of systems. ☎ (01903) 750750.

Technics announce the best sandwich since someone put a fried egg between two slices of Wonderloaf.



Just say no to bad vibes

Technics says No! to vibration with its Hybrid Construction Base, now available on mid-price CD players *SL-P670A* (£199.95) and *SL-P770A* (£249.95). This rubber and steel plate 'sandwich' protects the most sensitive components of these CD machines, which feature centrally-positioned disc mechanisms mounted on newly-developed, hybrid, die-cast fascias.

The more up-market *SL-P770A* also benefits from the most advanced MASH converter Technics has ever developed. ☎ (01344) 853214

The *Cento* power amp — slimmer than Pavarotti.



Cento forward

UK Distribution has added a new Monrio power amplifier to its roster. The *Cento HP1* is a 135Watt dual-mono MOSFET design that's claimed to have 'enough driving ability to cope with the most demanding loudspeakers.' It's fully dual-mono, right down to using separate power supplies and separate transformers, for each channel. As you'd expect from an Italian manufacturer the £1,695 *Cento* is a stylish looker and comes wrapped in a case fashioned from sheet and extruded aluminium.

Also new from Monrio are an updated version of the *ADN* phono amplifier and a new DAC, the *18B*. The £595 *ADN* is compatible with MM and MC cartridges, and offers adjustable gain and impedance settings. The *18B* comes with an external power supply and sells for £925. ☎ (01753) 652669.

Capacitor shocker

Epos has revised the crossover in its *ES11* speaker and will bring earlier versions up to the latest spec for £50. The update, available solely through franchised dealers, replaces the existing capacitor with a custom-wound device, as fitted to latest models. Benefits claimed include "greater resolution of detail, smoother presentation, a more solid soundstage and greater separation of elements within the performance." ☎ (01705) 407722.

Forever Amber. Is KAR's new speaker a real throat-charmer?



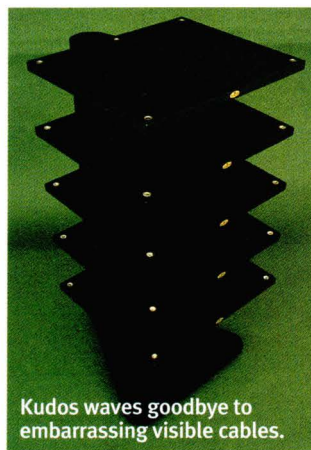
The Amber nectar

Silk and steel come together in KAR's new £1,399 Amber loudspeaker. This dual-cavity design, based on a modified reflex principle, uses bass midrange drivers with heavily anodised magnesium cones to reduce moving mass while increasing stiffness throughout their operational frequencies. The cone surfaces are ribbed to improve

linearity at higher frequencies' and for good integration with the tweeter, a tuned cavity unit using a 26mm silk soft dome.

The Amber stands just over a metre tall, offers a maximum sound pressure level of 118dBA, and is fully magnetically shielded for use in home theatre systems.

☎ (01977) 671823.



Kudos waves goodbye to embarrassing visible cables.

Tower of Kudos

Tired of innumerable mains cables dangling behind your equipment rack making your hi-fi look messy? Well, Kudos has the cure – a single-column, five-tier support with an integrated power line feeding a shuttered mains socket at each shelf level.

The stand also offers an alternative to the conventional Medite shelves seen on most racks in the form of composite polymer platforms. Naturally, however, they're not just shelves: they're RF shielded using a micro-grid that's earthed to the stand to help prevent interference being transmitted from one component to another.

The heavy duty – 35 kilo – stand has a stove-baked finish and comes with top-adjustable floor-spikes.

☎ (01732) 461648.

A question of Perception

"When is a pre-amp not a pre-amp?" asks Kinshaw Electronics enigmatically, introducing its *Perception Control Amplifier*. The answer is not 'When it's a strawberry Pop-Tart' (*What has Wendy James got to do with audio – Reviews Ed*), but has more to do with eschewing conventional circuit design. The company has applied

knowledge gained from designing precision instrumentation.

The unit has six line-level inputs and twin balanced outputs. Its input selector switches both signal and ground lines, while the volume control uses a laboratory reference technique, with twenty separate attenuator chains giving 3dB steps at better than 0.02dB accuracy.

Kinshaw also employs its Signal Ground Compensation to minimise earth currents and provide superior balanced-line performance to phono connected sources.

The pre-amplifier retails for £1,195 or at £1,395 for the remote-control version. The remote control option will be retro-fittable.

☎ (01209) 715878.

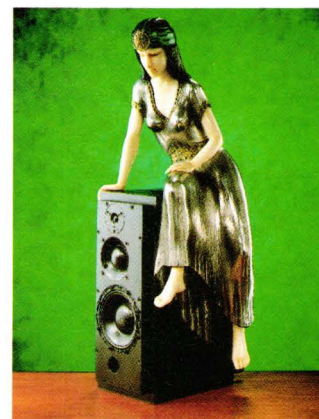
In brief

Alphason has extended its range of New Concept equipment stands to include mini system supports. An optional pedestal provides storage for CDs and cassettes. Prices start around £79. ☎ (01942) 678000.

Teac's new entry-level CD player, the £149.95 CD-P3200, is notable for employing a 16-bit, 8x oversampling DAC rather than the single-bit types more commonly deployed at this price point. Other features include a centre-mounted transport, full-function remote control and a fully adjustable headphone output. ☎ (01923) 819630.

The Mafia Trading Co. now handles UK distribution for Miller and Kreisel active sub-woofers. Prices range from £500 for the 50WVX-4 to £2,500 for the 400W MX-5000THX. ☎ (01589) 325363.

Here's an opportunity to celebrate ATC's twenty-first birthday and grace your humble domicile with a limited edition statuette, commissioned from sculptor, David Smith. For just £295 plus carriage you could gaze appreciatively at a 38cm tall likeness of an Art Deco lady sitting atop an SCM50A. ☎ (01285) 760561.



Micromega Stage

Upgradable never upstageable

The Micromega Stage is the first truly upgradeable CD Player. A top quality unit with interchangeable circuit boards that provide three increasing levels of sound performance.

Just select the entry level Stage that suits your current budgetary and Hi-Fi needs - Stage 1,2 or 3. Then, when you're ready to move up to a higher level of performance, simply take your Stage to your local dealer and they will upgrade it to the next level. All it will cost is the difference in retail price between the two stages.

New upgrades will regularly be introduced to keep your Stage at the leading edge of Audio technology, so you can be confident that it will never be Upstaged.



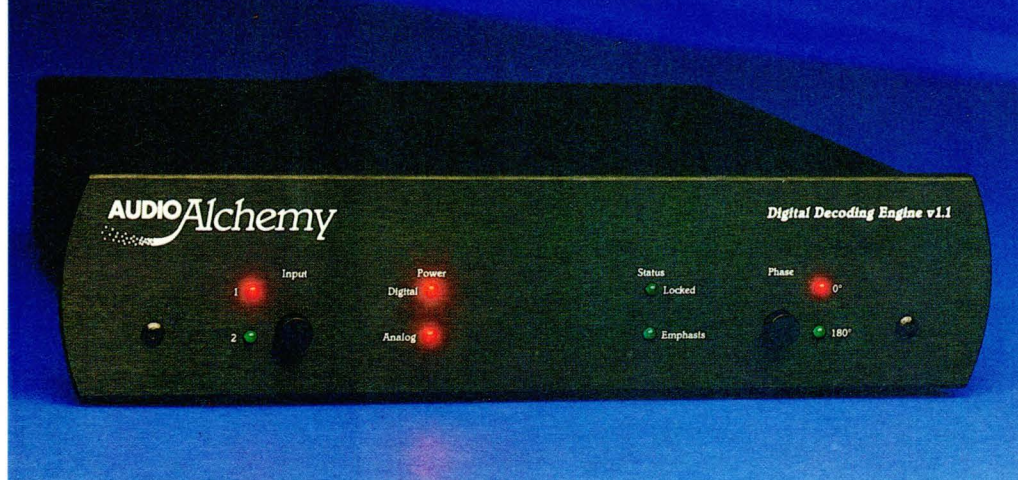
To hear why Stage is both the CD Player you need today and the CD Player you'll want tomorrow.



MICROMEGA

call now on 0181-502 1416

It may not turn lead into gold, but the new *DDE v1.1* does a wicked digital into analogue.



A new alchemic engine

Four years after launching its first *Digital Decoding Engine*, claimed to be "the industry's only serious sub-£1,000 DAC", Audio Alchemy has released the *DDE v1.1*. The new model has a completely passive integrator/filter network to maintain the purity of the Delta-Sigma DAC chip's digital output.

The *DDE v1.1* also features a 'novel' class A analogue

stage, using a high speed Analog Devices IC voltage amplifier with discrete transistors to provide current gain.

There are two power supply options available for the compact *DDE v1.1*. The basic unit sells for £399.95 with the standard *Power Station One* while opting for the *Power Station Three* ups the price to £599.95.

☎ (01494) 441736.

Denon does double deck.

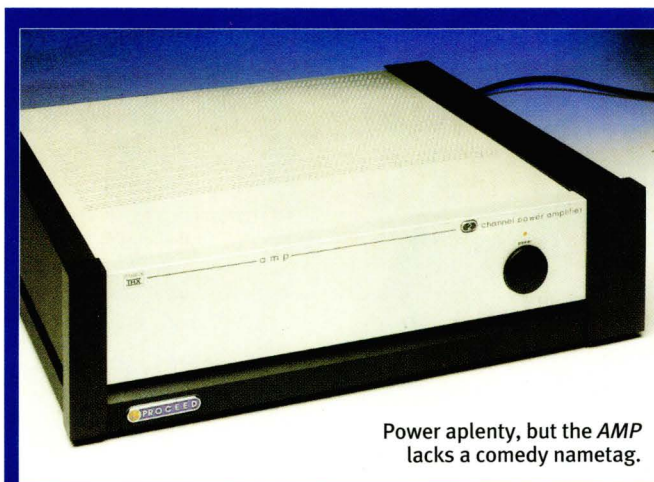


A raft of Denon

Denon has added a new twin cassette deck, a budget RDS EON tuner and a receiver to its separates range. The £199.99 *DRW-580* has auto-reverse and high-speed dubbing, and can perform one-touch recording with Synchro Record-equipped Denon CD players. Other features include manual fine bias adjustment and an IR sensor that accepts commands from the remote handsets provided with Denon amps and receivers.

The £149.99 *TU-215RD* AM/FM tuner can be remotely controlled by the same means and offers forty presets and a comprehensive raft of RDS functions including full Radio Text. Denon's *DRA-265R* receiver packs a 35 Watts-per-channel amp and full remote control for just £199.99. There are 40 AM/FM presets, and a 'pseudo-RDS' facility to add station names to your presets. The amplifier section has CD, phono, video and tuner inputs along with a tape loop.

☎ (01753) 888447.



Power aplenty, but the AMP lacks a comedy nametag.

Alternatives AMPs

Madrigal scoops this month's prize for unimaginative product names with its new THX-certified Proceed power amplifiers *AMP2* and *AMP3*. The home cinema designs are nonetheless rather intriguing.

What makes them unusual is their application of multi-mono construction – the *AMP2* contains two 150W mono amplifier modules while the *AMP3* has three. These offer switchable balanced and single-ended inputs that allow you to have differently

configured channels within the same amplifier chassis. With an *AMP3*, for example, you could run an AV system's left and right channels in balanced mode while driving the centre channel in single-ended mode – without incurring the usual 6dB difference in levels between the balanced and unbalanced channels.

High-end home cinema fans can either buy a £2,995 *AMP3* outright or start with a £1,995 *AMP2* and upgrade it by adding a third amplifier module. ☎ (01494) 441736.

In brief

Now Hear This! The distinctive American NHT speaker range, which includes high-end audiophile and home theatre models, is coming to the UK through newly appointed distributor, Sound Dept. ☎ (01865) 516800.

The Jamo SW400E is a new active subwoofer fitted with a 70W amplifier and a single eight-inch driver. Priced at £239.99, it comes complete with an eight-metre interconnect cable. ☎ (01327) 301300.

Just launched is the Music By Fax service, which will send you computer-stored musical scores through your touch-tone dialling fax machine. Downloading a typical tune – Mull of Kintyre, for instance – will cost around a fiver, although Wagner's Ring cycle might cost more. You connect to the system via an 0897 number that adds all charges to your phone bill. ☎ (0171) 434 0066.

Aston Audio is hosting a musical evening featuring Meridian active systems at Korks Wine Bar in Otley on June 27. Call to book a seat. ☎ (01943) 467689.

Denon has a new SC-AV1 add-on home cinema centre and rear speaker package, costing £149.99. It's also offering a separate British-built centre channel speaker, the SC-H1C, for £129.99. ☎ (01753) 880109.

Technics says the SC-CH610 mini system offers sound quality, good styling, convenience and value. The Karaoke-capable package includes a three-disc multi-play CD and speakers with Active Air Coupling Woofers. Complete with remote control, it costs £549.95. ☎ (01344) 853214.

MUSICAL FIDELITY

When music matters most



To audition the new Elektra range, visit any Musical Fidelity stockist from the list in this issue or contact Musical Fidelity, 15/17 Olympic Trading Estate, Fulton Road, Wembley, Middlesex HA9 0TF or telephone 0181-900 2866

Now you can hear a new creation from Musical Fidelity.



Avon

BATH Paul Green HiFi 01225 316197
BRISTOL Radford HiFi 0117 9441010

Bedfordshire

LUTON B&B HiFi 01582 459915

Berkshire

BRACKNELL B&B HiFi 01344 424556
MAIDENHEAD
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READING B&B HiFi 01734 583730

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choice sessions

Lyra's hard-core cartridge

A cynic would say that you can be sure of two things with a revised version of a product — the price will have risen and the new model won't sound significantly better than the one it replaced. The newest Lyra *Clavis* cartridge, the low output moving coil *Clavis Da Capo*, will disappoint anyone who subscribes to either notion.

The *DC* sells for £995, which represents no increase over the mark 1 version, and it builds substantially on the strengths of the original. Furthermore, it turns in a stunning performance straight out of the box. The original *Clavis* didn't fully get down to business until you'd removed the perforated housing that enclosed its moving parts, which wasn't a job for the short-sighted or faint-hearted. Its lower register had a noticeable ploddiness and bloom that took the heat and precision out of quick bass lines and added a tonal richness that wasn't always appropriate. The

DC suffers no such problems: it comes stripped ready for action and, once it's had a decent run-in, requires no further tweaking. It also sounds lean and mean the first time you lower it into a groove.

I'll cut to the chase and say now that this is a cartridge which any hard-core vinyl nut should investigate immediately. That applies regardless of the type of music you enjoy and what you consider vital in terms of how your system presents it. The *Clavis DC* — bolted into a Naim *ARO* on my Pink Triangle-modified *Sondek* — displayed an exceptional musical rightness, partnered by a precise and finely etched presentation. It sounded so persuasive and compelling that several CD players threw their hands up and left the room declaring "we're not worthy!"

What made the performance of the *Clavis DC* so beguiling was a near total absence of the spurious contributions that degrade the sound of most cartridges — even some highly

regarded specimens. The sound was open and clean, from its deep-digging bass right out into its crisp, controlled treble register. When there was information to be heard, the *DC* presented it intact; when there was no signal, it stayed silent. This precision and analysis, however, didn't make it a clinical performer. It was far from being, to quote Tom Waits, as cold as a well-digger's ass — a criticism you can level at some of the cartridges that match it for information retrieval.

The *DC*'s cleanliness and unexaggerated speed proved particularly rewarding with acoustic and bass guitar; the leading edges of both instruments had a natural character and appropriate urgency that conveyed timing information with encouraging fortitude. The cartridge's dynamic scaling and full-bodied tonal character completed the realism of its portrayal of these and other instruments. Voices, for example, emerged rich in texture, highly communicative and utterly convincing.

The *Clavis DC* is one of the finest cartridges I've heard and it costs no more than others which don't even approach its superb all-round competence. Furthermore, in spite of its true thoroughbred nature, it's a particularly stable tracker that seems to work efficiently without any need for arcane set-up rituals. If you're contemplating a change or upgrade for a top-notch turntable you'd be unspeakably silly not to audition it.

The VAC-in-your-pocket

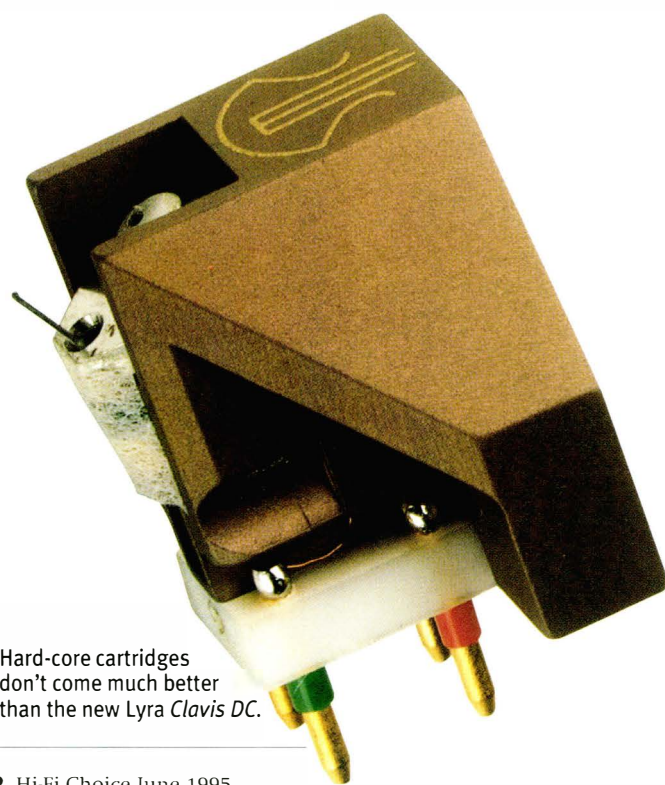
Another new product from the Path Group, the UK Lyra importer, also targets vinyl fans. The Audio Alchemy *VAC-in-the-Box* is a pocket-sized phono preamplifier for owners of line-level amplifiers or preamps. It

comes with a small outboard power supply captive in its mains lead, and is configured for high-output moving coil or moving magnet cartridges that need a 47k Ohm loading. However, that's just the default setting: the unit can easily be tailored for different cartridges by adjusting its loading and/or gain (32dB, 50dB, or 60dB) through movable jumpers. If none of the readily available settings is ideal for your particular cartridge, there's an 'open' position into which you can solder an appropriate capacitor or resistor.

I tested this dinky little box, about the size of four CDs, with the aforementioned *Clavis DC*, using its high (60dB) gain setting and the default 47k loading, into a line-level input on my Naim *NAC52* preamplifier. The *DC* seemed eminently happy with this arrangement, providing heaps of cogent musical information on top of a noise floor that was appreciably low. Fine-tuning of the input loading could have reduced the barely audible hiss further still, but it wasn't at all intrusive unless the amp was cranked up to the limits.

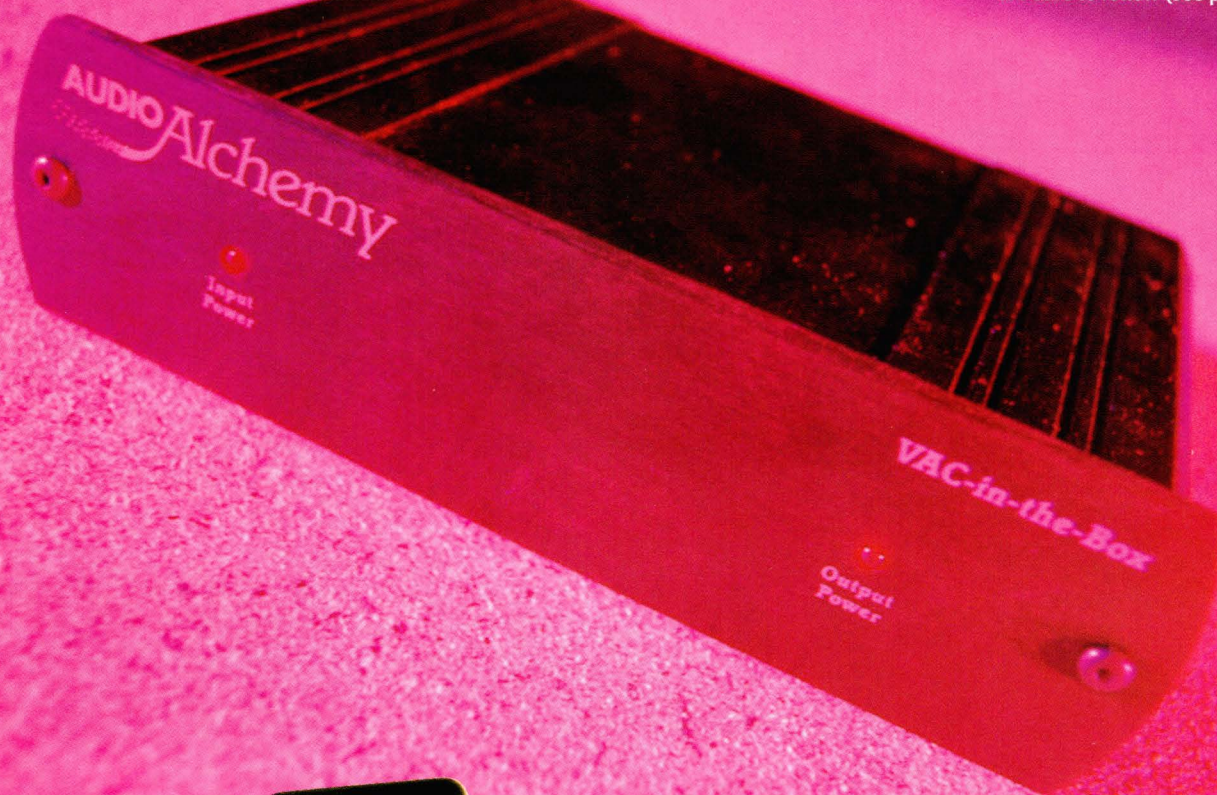
The *VITB* showed itself to be a prime candidate for use with the growing number of high quality amplifier systems that don't incorporate a decent phono stage. Its major strength was that it didn't make me unduly aware of its presence. It simply got on with playing music in a manner that was extremely palatable. Its musical coherence was noteworthy, but in the high resolution system I used to test it, I initially detected some veiling of subtle detail. However, this diminished on a daily basis, suggesting that the circuit takes quite some time to reach its optimum performance.

Once it had a few records under its belt, the presentation



Hard-core cartridges don't come much better than the new Lyra *Clavis DC*.

Pocket a *VAC-in-the-box* today and great vinyl sounds are sure to follow (see p12).



Be clear of disc with a gadget that really works — Bedini's Clarifier (p15).



grew to demonstrate a vitality that really did justice to vinyl. Its enhanced speed, bandwidth and lack of obvious coloration left it sounding open, detailed, tonally full-blooded and responsive to timing accents and changes.

Over the past few years there have been several outboard phono stages launched, and this inexpensive unit, which sells for a modest £249.95, deserves to be auditioned alongside any of those I've heard.

The ease with which the VITB can be tuned to different cartridges makes it even more appealing to the quality-conscious audiophile on a budget. Its compactness

conveniently lends it to a tweak that anyone chasing optimum performance might like to try: mounting the VITB as close to the turntable as you can and reducing the length of the tone-arm's output cable as much as is

practically possible. If it works for Roksan's *Artaxerxes* and Naim's *Prefix*, it's likely to benefit the VITB as well.

Teac's jewellery — not!

While the *VAC-in-the-Box* defines discreet, dainty dinkiness, the new Teac *T-1* and *D-T1* combination is brazenly bulky and butch. Cosmetically, this CD player and DAC have an almost professional look — neither

would seem out of place in a studio rack. Their no-frills, macho minimalism conveys a strong impression of equipment that genuinely means business.

The £499.95 *T-1* transport uses Teac's VRDS (Vibration-Free Rigid Disc Clamping System) to get things off to a secure start. By minimising vibration induced in the CD as it rotates, to give the laser an easier time tracking the disc, the system aims to reduce errors in the disc reading process. The transport's substantial build also exerts a significant influence in this respect. Physically abusing the player while it was working — feeding in more energy than any structure or airborne vibration would — didn't perturb it. The disc continued playing without any glitches occurring.

The matching £449.95 *D-T1* DAC is a four-input (two coaxial, two optical) converter operating at 32kHz, 44.1kHz and 48kHz sampling rates, which makes it

suitable for use with other digital sources such as DAT. I used it solely with compact disc, linking it to the *T-1* with a Sterling *Silverline* coaxial lead, and feeding my regular active SBL system, which takes no prisoners — especially where digital sources are concerned.

The Teac combination didn't disgrace itself. In fact, it sounded extremely confident, thrusting music forward with commendable vigour yet resisting the temptation to sound artificially bright or to exaggerate detail. A case in point was its portrayal of Nirvana's *Unplugged* CD, where there's plenty of spare rope to hang a ragged-sounding player. The *T-1* and *D-T1* provided a composed, poised performance without smoothing off too many of the unpolished edges of Kurt Cobain's singing or acoustic guitar playing. Leading edges rang out smartly without being overplayed or unduly

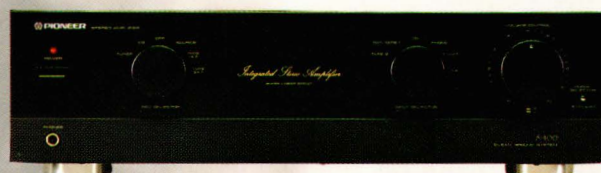
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conspicuous. Cobain's voice was equally well rendered, sounding characteristically raw and emotionally persuasive. Krist Novoselic's bass had abundant power and a welcome fullness without being overblown or appearing less well defined than it ought. About the only thing that troubled me slightly was the Teac's portrayal of timing, which seemed a little relaxed in slower tracks.

This 'problem' went away after playing a few more discs, which suggested that the player needs more than merely 'being left plugged in' for a few days to warm-up thoroughly – it needs to be working.

Once the Teac had shaken off its initial sleepiness it showed that it knew how to groove. Rage Against The Machine's *Killing In The Name Of*, for instance, certainly wanted for little in the propulsion department. The Teac's rendering of this disc blended restraint with in-your-faceness in fitting proportions. It also sounded way cool at the frequency extremes, showing great finesse handling Timmy C's strident bass and Brad Wilk's exuberant drilling round the drum kit. Its management of major dynamic swings agreeably fuelled the music's angst while its portrayal of micro dynamics kept the various elements in the mix in a believable perspective.

The combination was also pleasing with female vocal discs that regularly trip up digital media. Des'ree's *I Ain't Movin'* showed that the Teac had no problems allowing a singer to sound natural and communicative. Its timing also had a soulful, syncopated swagger that suited the music perfectly.

I really enjoyed using this relatively inexpensive combination. It's competitively priced, delivers the musical goods, is unusually good looking

and isn't weighed down with the annoying male jewellery adornments that put me right off mainstream CD players.

A gadget that works

Wanna laugh? You take this hand held, battery powered device, stick a compact disc label-side up on its spindle, then push the go button. You let the disc spin for five or six seconds, during which the device performs a mystical clarifying process. You then stick the purified disc in your player and listen. Wanna laugh even more? It actually seems to work.

I'm normally wary of gadgets like this, but because Pear Audio's level-headed principal, John Burns, suggested I try it, I temporarily put my bullshit detector on the shelf. Its inventor, John Bedini, is certainly worthy of respect, having designed one of the few power amplifiers that could drive early Shahinian loudspeakers without distress.

His £60 *Clarifier* emits an electromagnetic beam that purports somehow to 'align' the CD's structure so that a player's

laser can shine more directly on the disc's pits and avoid 'laser splatter', whatever that is. That probably sounds like pseudo scientific claptrap to you, as it did to me, but there's no arguing that the device definitely improved the sound of most CDs. Its effects varied from disc to disc, ranging from 'I can detect a subtle improvement' to 'dang me, if it isn't a genuine contribution to sound quality!'

Discs generally seem to have more presence after 'clarification', the music breaking free from the speakers more effectively, stereo imagery increasing in depth, and detail appearing better defined and more starkly located. Even clean-sounding discs with readily discernible acoustics and obvious detailing seemed to gain an enhanced transparency, but discs that originally sounded a little indistinct benefited the most.

On CDs where vocals tended to smear with guitar lines, the two elements became markedly better separated. Ambience information became more apparent and bass lines that

Full of purpose at a budget price, Teac's T-1 and D-T1 combo is free from male jewellery (p13).



were a little fuzzy around the edges took on a heightened sharpness and, er, clarity.

The bottom line is this. I don't know how the *Clarifier* works and I care even less. It does what it claims to do. If you're looking for an alternative to green ink and freezing to achieve better sound from your CDs, it's certainly worth trying.

Luxman comeback

The Luxman name still retains a certain cachet, even though the company hasn't had a high profile in the UK for many years. Its products were always viewed as classy, and the tidy, well thought out quality is evident in the 300 Series models that Luxman's new importers, RAM, are using in an attempt to re-establish the brand in the UK.

As well as looking very business-like, the D-322 CD player, which sells for an economical £199.95, also turns out to be a very acceptable machine on audition. Okay, its performance isn't leading edge, but you'd hardly expect that from a sub-£200 player. It is, nonetheless, a fiercely



Help celebrate the comeback of Luxman (with help from Revolver's speakers). See p15.

competitive design that I can imagine becoming very popular. This is a cheap player that doesn't sound like one, even when it's playing in a system that's way out of its league.

There's no magic involved: instead, Luxman's designers have tailored its performance to achieve a balance that's informative and perky but ever so slightly on the warm, friendly side of neutral. The result is a player whose sound is easy on the ear but never bland.

The Luxman D-322 copes admirably with music's fundamentals. Its timing is secure and purposeful, which means that even slow-burning tracks maintain their momentum and the listener's interest. It's also a very tuneful machine whose intonation usefully extends to the bottom of its bandwidth: there's no vagueness on bass guitar, something that regularly irks me with budget CDs.

At the top of the spectrum, the D-322 sounds refined and informative. It doesn't have the resolution of first division CD players but its treble is easily on a par with that of similar high quality budget hardware. It's well — but not explicitly — detailed and combines

controlled dynamics with a good recreation of instrumental texture. It might surprise some readers to find that the player uses a multi-bit DAC, because these, according to accepted wisdom, don't perform well in inexpensive players. Well, bang goes another theory.

The D-322, in common with most budget players, is a bit sensitive to external disturbance. Rap its case while it's playing and it'll skip. However, it does so politely: there are no nasty splats when it mistracks, which consolidates this accommodating, fully featured machine's user-friendly character.

After checking out the D-322 on my regular system, I partnered it with another 300 Series component and a pair of £149 Revolver *Colt* loudspeakers to see what sort of starter system distributors RAM could offer.

The A-312 integrated amplifier, which like the CD player sells for £199.95, has a typical mainstream line-up of facilities, including switching for two sets of speakers (also convenient for biwiring), a headphone socket, balance and tone controls, and a man-sized volume control knob. Rated at 40Watts with healthy current

delivery claimed into four Ohm impedance loads, it's more than powerful enough to drive speakers like the *Colts*. The amplifier also has a CD-Direct switch that bypasses its control and switching circuits but not, perversely, its tone controls.

Nonetheless, connected to the *Colts* it delivers an easy-to-enjoy, vibrant performance with a wide range of music. Much of the fun quotient is down to the speakers, which balance the slightly warm character of the electronics. This system leaves the excitement in music intact without giving your ears the sort of syringing that's common with real world hi-fi. It's also respectably well endowed in the bass, where it sounds punchy and tuneful. That's not bad going for a system which, even accounting for cables and stands, will only deprive buyers of a little over £600.

Cables to Talk about

For most of the Sessions listening tests, I used two of Cable Talk's revised range of interconnects, the new *Studio 2* (£64.95 per metre) and *Monitor 2* (£49.95 per metre) leads.

Both new cables use four cores per channel. Three are foil-wrapped, high purity copper

cores for signal transmission and the fourth wire acts as an RF drain. All the signal-carrying cores are individually sexed so that directioning is maintained through both return and signal wires. The cables are marked to indicate which way around you should connect them.

The primary differences between the two cables are the strand sizes in their conductors and the connectors. *Studio 2* uses 0.25mm filaments and copper plugs while *Monitor 2* uses 0.2mm strands and brass plugs.

Monitor 2 sounds more neutral and detailed than its predecessor, which was a leading contender in — and above — its price bracket. I'd rate it even more highly in its new guise: the extra detail it releases comes without any forwardness or brashness.

It demonstrates a well-judged balance between energy and refinement. However, if you can afford it, and your system warrants it, the new *Studio 2* definitely merits the additional expense. It has a similar overall balance, but its top end is a fraction smoother and its bass tighter, fuller and better focused. We're not talking night and day, but these subtle improvements make *Studio 2*'s performance more cogent and satisfying in a revealing system.

Cable Talk has a reputation for high performance, no-nonsense cables at sensible prices. These new interconnects do nothing to tarnish the company's image. Just don't let their reasonable prices dissuade you from trying them in a sophisticated system — their performance easily withstands close scrutiny.

h/k's zesty little beast

harman/kardon's £190 HK610 integrated line-level amplifier, introduced as the entry-level model in a five-strong range



Get the Zest of finest H-K amplification right here.

Death Metal comes to Mitcham, thanks to the Rockin' Rogers LS1 speakers (see below).

earlier this year, is an interesting product. Its assured appraisal of music supports the company's decision to drop some high-end circuit tweaks into what's essentially a mainstream design.

That it's aimed at listeners who probably don't have 'I love my hi-fi' tattooed across their forehead, explains the 610's not-strictly-audiophile features, such as non-defeatable tone controls and EC regulation-friendly screw-down speaker terminations. However, as this amp's performance is firmly in the Stormin' Norman camp, I'm prepared to overlook that.

The 610 breaks with tradition by not having an inductor in line with the speaker terminals — a feature normally seen on decidedly specialist power amplifiers. The removal of this component can work wonders when you're after improved accuracy and control, but most designers avoid it because they prefer their amps to be unconditionally stable — that's one reason why specialists like Naim recommend avoiding trick speaker cables.

Harman claims its revised, minimalist, star-earthed circuitry is sufficiently stable to avoid such problems, and the amplifier certainly showed no signs of impending melt-down, even at high playback levels through a variety of speakers.

Whatever is responsible for the amplifier's performance, the sense of grip and control that it displays truly endeared the 610 to me. Its bass was unusually articulate, its midband strikingly open and its treble more poised and refined than it ought to be in a such an inexpensive design.

This noteworthy clarity and precision didn't, however, make



its presentation unwelcomingly 'hi-fi'. This baby dished out detail like a good 'un but it also boogied and involved me in the music. Even Jah Wobble's convoluted, bass-guitar-led polyrhythmic excesses and Zappa's complex orchestrations didn't trip it up. The 610 hung onto every strand tenaciously, refusing to let itself be embarrassed by music that regularly shows up more expensive tackle.

In its standard form, the HK610 is line-level only, but vinyl users aren't excluded. They can buy an optional plug-in phono module for £30. The only people I'd advise to avoid the HK610 are those who want an amplifier to provide background entertainment — its dynamics, forceful portrayal of timing information and sheer zest make its presentation impossible to ignore.

Rockin' Rogers

I'd always thought that Rogers speakers were fine for listening to classical music but a bit too tame for rock and roll. That's a notion I have to re-evaluate: I've just played Nirvana's *Unplugged* all the way through on the new LS1 and thoroughly enjoyed it.

My experience with such albums on other models from this maker usually left me wanting firmer, quicker bass and a more animated, less genteel attitude towards the Devil's music. Either somebody at the factory has been eavesdropping on my thoughts or they've discovered Death Metal in Mitcham.

Talking 'bout a Cable revolution? Then *Monitor* your *Studio* on page 16.



The £199 LS1 is a compact, bookshelf two-way that seemed as easy to drive as it was to accommodate — recommended placement is on tall stands about six inches away from a load-bearing rear wall.

Even with a six Ohm impedance and a lowish 85dB sensitivity rating, the Harman HK610 integrated had no trouble driving it to adequate levels in a smallish room. It's not really a speaker for decibel freaks — maximum sound pressure level is an adequate but not exactly neighbour-harassing 99dB.

Nonetheless, the LS1 managed to cope with several albums that unfailingly sound mundane on speakers lacking verve. Jah Wobble's athletic *Yoga Of The Night-club* came across in an appropriately funky manner, while the LS1's seductive way with vocals even made Dolores O'Dubious-Intonation's guest vocals on *The Sun Does Rise* appear related to the melody.

While the speaker's bass wasn't particularly extended, it was articulate and quite agile. The way the speaker kept a grip

on Jah Wobble's intricate mixes also suggested that it didn't have any major time-domain irregularities. Such problems disturb the cogency of much of the music on this disc, but the LS1 had all the constituent parts toeing the line properly.

Where the LS1 shines most brightly, though, is with vocal music. This speaker could have been developed solely to cater for record collections entirely made up of discs by female singers. Des'ree's *I Ain't Movin'* and Aimee Mann's *Whatever* spent an inordinate amount of time in the CD player while I lived with this speaker. If you're a sentimental old soul, grab a box of Kleenex and settle down in front of the LS1s with Mann's *Stupid Thing* — you'll be in your tear-drenched element.

Cubes from Coles

And now for something completely different. The 35Watt *Cumulus 1* amplifier by Coles Electroacoustics is minimalist in the extreme.

Housed in a cube-shaped box, formed from metal front and

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Dare to be different with Coles amps and speakers (see 'Cubes from Coles' — this page).

rear panels inside a Medite wrap, it has one set of speaker outputs — via spring clips — and one line-level input, which, contrary to conventional styling practice, appears on the fascia.

Apart from the two phono sockets, there are just three controls: an on/off switch, another to alter the impedance setting, and a volume control. Inside, the *Cumulus 1* uses single stage amplification and active bass equalisation to provide the kind of sound quality that, according to the leaflet, "is way beyond that possible by more complicated amplifiers".

Matching its distinctive appearance are the *Cubicon 2* speakers. These compact, vertically elongated cubes have forward-facing tweeters and upward-firing mid-bass drivers. Their spring-clip terminals are attached to their bases, and the speakers sit on rubber feet.

Describing the *Cubicons* is the easy part; once I discovered their prices I had real trouble putting these products into a proper context. I asked someone to estimate their cost: they thought the speakers would be about £99. Wrong! Coles told me they're £250 a pair. The amplifier "probably costs a little more". I'm told it sells for £495. The prices put this amplifier

in the same ball-park as the attractively styled and comprehensively equipped *Arcam Delta 290*, and the speakers alongside models such as the *Royd Minstrel* and *Pioneer S-4UK*. Feature for feature, it is hard even to begin comparisons between the Coles products and others of similar cost.

Disregarding sound quality altogether, I'd volunteer to undergo cruel medical experiments before paying these prices for equipment this poorly specified, especially when fitted with spring-clip terminations.

Nonetheless, I've encountered stuff before that didn't look very promising yet delivered a surprising performance, so I plugged in my Naim CDS CD player, and started hit the Coles combo with some tunes from Skip 'Little Axe' McDonald's *The Wolf That House Built*.

Initially it sounded rather cloying and bland: it didn't have the measure of the music's cool timing groove or exploit the dynamics of tracks such as *Dayton*, but I persevered. After a longer warm-up, the presentation began to open out and show increased vitality.

Unfortunately the sound never progressed much beyond being palatable and inoffensive. The system still sounded 'nice'

when it should have sounded dirty. It didn't deliver enough drama or contrast, particularly with rock music. It didn't have that 'jump factor' — the eager response to rim-shots or a slapped bass guitar — that promotes excitement and a desire to get involved with the music, whatever style or genre.

I don't relish being negative about products, especially when the manufacturer has clearly elected to plough its own furrow — I'm all in favour of innovative approaches. However, I think this company really needs to take a closer look at competing products in the British specialist hi-fi market if it wants to tempt discerning audiophiles into parting with their cash.

Path Premier, Desborough Park Ind. Est., Desborough Park Road, High Wycombe, Bucks HP12 3BG. ☎ (01494) 441736.

Teac (UK) Ltd, 5 Marlin House, The Croxley Centre, Watford, Herts WD1 8YA. ☎ (01923) 819630.

Pear Audio, 3 Northumberland Mews, Alnmouth, Alnwick, Northumberland, NE66 2RS. ☎ (01665) 830862.

RAM Projects, Unit 27, Stretford Motorway Estate, Barton Dock Road, Stretford, Manchester, M32 0ZH. ☎ 0161-973 0505.

Cable Talk, PO Box 413, Woking, Surrey GU22 8YZ. ☎ (01483) 750667.

Harman Audio, Unit 2, Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. ☎ 0181-207 5050.

Swisstone Electronics Ltd, 310 Commonsides East, Mitcham, Surrey CR4 1HR. ☎ 0181-640 2172.

Coles Electroacoustics Ltd, Pindar Rd, Hoddesdon, Herts EN11 0BZ. ☎ (01992) 466685.

Record review

Malcolm Arnold
Symphonies 1 and 2
LSO/Richard Hickox
Chandos CHAN 9335

After many years of neglect, it's marvellous to find the music of Malcolm Arnold being performed and recorded. Hickox is taping all the symphonies for Chandos and one could hardly wish for more committed advocacy.

He treats the music with great seriousness, yet captures its changes of mood and good-natured whimsy.

Arnold's first symphony is an impressive piece. The composer made a memorable recording of the work for EMI in

1980, but Hickox sets noticeably faster tempi in all three movements, giving the music greater fluency. This new Chandos edition is even finer than the recent Conifer recording of the second symphony with Vernon Handley in February.

Hickox has a way of teasing the music into life, though the more robust passages have plenty of weight and thrust. Hickox takes almost 14 minutes over the slow movement (a full minute longer than Handley), giving it a gloriously expansive reading that has real pathos and atmosphere, though Handley is a shade more intense.

Chandos have provided excellent engineering that sets the orchestra in a lively but spacious acoustic, allowing plenty of room for climaxes to expand without becoming over-resonant.

Tonally, the upper strings have a nice glossy sheen, and the loud passages real impact. The massive funereal outburst in the second symphony's slow movement (track 6, 7m 12s) is grandly impressive yet clarity is excellent, allowing detail to tell effortlessly.

Jimmy Hughes



EAD's HDCD: QED?

Jason Kennedy takes an exclusive listen to the first US High Definition Compatible Digital CD player to reach these shores, courtesy of Enlightened Audio Design. Does it deliver?

It's been over two years since HDCD made its debut on the audio scene. At the time there were demonstrations for the American press and a couple of discs from Reference Recordings. It went down very well; I think it was Harry Pearson (Editor of *The Absolute Sound* and then a noted pro-analogue campaigner) who said 'turn us over, we're done', referring to the fact that with HDCD, CD had finally come of age.

Since then Pacific Microsonics, the company behind High Definition Compatible Digital, has developed the

encoding and decoding chips for commercial use. It's the latter that have reached the market first, bringing us the EAD T-1000 transport and DSP-1000 HDCD-decoder-equipped digital to analogue converter.

This American combination weighs in at £1,200 for the T-1000 and £1,495 for the DSP-1000 in its HDCD guise, but without the HDCD chip the price shrinks to £995.

The T-1000 is based around a Pioneer Stable-Platter transport mechanism, an increasingly popular device among



high-end manufacturers these days. Its controls are pretty basic on the machine, backed up by a badged remote that covers the usual operations but nothing fancy; if you want A-B repeat or FTS look elsewhere. Output wise it's also pretty basic, although in the American style, with trendy AT&T connectors rather than a Toslink. The co-ax, on the other hand, is yer regular RCA phono.

The dual differential 20-bit (Burr Brown) equipped DSP-1000 isn't exactly crammed with external features either: it adds a Toslink socket to those on the transport and has three switches and a couple of lights on its brushed ally fascia. There are, however, a couple of interesting features on the inside. Most notably Digital Flywheel re-clocking circuitry, said to be the electronic equivalent of a massive, er, flywheel that 'smoothes out instantaneous time based fluctuations' (or jitter

that as you read this there are record companies in the 'States beginning to use the encoding chips to produce a variety of software, including re-issues of Neil Young classics. For the purpose of this review, however, I used a couple of Dick Hyman jazz recordings and about as much of the Turtle Creek Chorale (*Testament*) as I could take (about one and a half tracks!). Luckily Hyman's *Age of Swing* disc is musically quite entertaining and, as ever with Reference, a decent recording with or without HDCD decoding.

For the purpose of assessing whether all this technology assists in resolution of music I compared the EAD components with a fully Trichord modified Pioneer PD-S503 transport, Trichord Pulsar Series One DAC and external power supply, and a Wadia 23 player. Most of the listening was carried out with Audio Innovations L1 and Series 800 Anniversary amplification through Dali 104MS loudspeakers. The cables were Audio Note, Trichord and Precious Metals (the excellent *Silver Digital 300* interconnect) with power leads from XLO and RATA, and equipments supports by Mana.

From the EAD's point of view the listening started off well, I used an HDCD disc and moved a step at a time from the Trichord components over to the EAD. The DSP-1000 produced coherent, focused music that sounded tidy and natural with no hint of glare or aggression; the only apparent limitation was in bandwidth. Adding the T-1000 transport seemed to open up the midband and high frequencies, letting some daylight in. The timing, which was already good, didn't seem to suffer and all seemed to be groovy.

Then it occurred to me that the depth that had been there with the Trichord PD-S503 was not in evidence. So I went back to check and sure enough back went the stage. Something else came back as well, something that I hadn't noticed had gone; grip, that sense of solidity and perspective that serious source components can extract from decent recordings. It also made the T-1000 (wasn't that the bad android in *Terminator 2*?) sound a little forward in the aforementioned daylight domain.

I went on to non-HDCD discs with the EAD. They sounded pretty good, nicely balanced and coherent. But comparisons did them no favours, the opposition came up with greater bass extension and generally higher resolution. The effect was to make the EAD sound very composed but a tad grey and spatially compressed.

In the grand scheme of things, the

HDCD in practice

HDCD was developed to address sources of distortion in digital audio, including those introduced in analogue to digital and digital to analogue conversion and those inherent in the limitations of the 44.1kHz, 16-bit standard. What HDCD does is use DSP (digital signal processing) techniques to determine which aspects of the music signal beyond the range of conventional CD are perceptually important, i.e. the bits of the original signal that can't be squeezed into the CD format but are psycho-acoustically important.

This information is encoded onto the disc by two methods. Part of it is added directly to the PCM (pulse code modulated) signal — the standard digital bitstream that all CD players process — by "optimising utilisation of its linear bits". The rest is encoded in a hidden control channel contained within the PCM signal. So the recording should sound better when it's played back on a conventional CD player. HDCDs are fully compatible with existing players. When a disc is played on a machine with HDCD decoding, the information in the hidden control channel is extracted and a high resolution signal is reconstructed.

In contrast with Sony's PASC system, that uses data compression techniques to remove the 'less important' bits of the signal and squeeze the rest onto Mini Disc, Pacific Microsonics expands the potential of CD without losing compatibility.

combo produces decent enough soundstages and plays music with a fluidity that evades most compact disc players, but in the context of its price the lack of resolution and to an extent dynamics is not highly competitive.

The trouble with being lively

The 1000 combo, or more specifically the transport, tended to get into trouble with very lively material; some of Trevor Pinnock's Vivaldi pieces for instance proved too much for them.

Even HDCD discs, which sounded involving, coherent and dynamic on the EADs, seemed to gain life, depth and a bass player on the Trichord duo.

You can't damn a system on the basis of one implementation and I'm keen to hear what other manufacturers have done with the technology, but this particular set up didn't exactly get me petitioning record companies to get HDCD encoders into their mastering facilities.

HDCD is not a panacea, just as putting OZ wheels on your Xedos won't make it a contender in the touring car championships. Neither should it be expected that a clever decoder is going to transform what is, in the States at least, a medium price DAC.

I guess I was expecting quite a lot from both HDCD and EAD on this one. I'd heard great things about both in the past and wanted to get an excellent result. As it stands the price to performance ratio of this particular EAD combination does not put it in the Premier league of audiophile bargains.

The EAD T-1000 transport and DSP-1000 processor, yesterday.

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Norwegian Blue

Alan Sircom admires the beautiful plumage of the latest Norwegian amps from Electrocompaniet.

Back in the days when punk was still shocking, the amplifier that was winning over the ears of serious listeners around the world bore the name Electrocompaniet. At the time, the original 25 Watt power amplifier was considered so threatening to its competitors that, in a covert attempt to sabotage it, a well-known rival Norwegian manufacturer submitted the Electrocompaniet amp to a popular underground magazine of the time, *The Audio Critic*.

However, instead of destroying the amplifier's reputation, *The Audio Critic* praised it to such an extent that the tiny Electrocompaniet had great difficulty keeping up with the overwhelming demand. While this may sound an ideal situation, it can potentially spell the death knell for a small company.

Fortunately, Electrocompaniet survived and has remained small and dedicated to making high-end electronics from its base in Skårer, just outside of Oslo. The company is so small, in fact, that the entire staff could just about make up a Nordic rugby team.

Electrocompaniet is now back in the UK with two preamps, three power amplifiers and a mains cable, in addition to the £2,100 *ECI-1* integrated amplifier and £535 *ECP-1* phono stage under test. All of the *Ampliwire* amplifiers can be supplied with a Larvikite blue-stone front, featuring gold knobs and relief on the front panel. Normally, they are finished in a less dramatic but more universally-acceptable gloss black. In Larvikite, the price is raised to £2,350 and £699 respectively.

Feelin' hot, hot, hot

Larvikite or not, the *ECI-1* is a 100 Watt line integrated fully in Class A. That means it gets hot — damn hot. As this is an amplifier which demands a run-in of about 1,000 hours and needs a good hour to warm up before every session, a fair bit of electricity is consumed and a lot of heat gets dissipated before the amp even comes on song. Even the little *ECP-1* phono stage runs slightly hot. By valve amplifier standards, however, it's a refrigerator.

The Norwegian integrated amplifier is also seriously heavy. Inside the casing, it's easy to see where the weight comes from, as it has the sort of power supply found in big, bold power amplifiers. It is also packed full of high-quality componentry and dark-blue PCBs. Not to mention the fully-buffered active preamplifier stage.

Healthy balance

The *ECI-1* offers a healthy balance between the sort of stark, yet rhythmic qualities of a well-made transistor amplifier and the warmth and richness of valve amps. Ultimately, this middle path will appeal to those who crave the transparency and dynamics of tubes but can't live without trannie grunt.

There is also one factor that is normally associated with beefy pre-power amplifiers — bass. By virtue of the sort of small transformers and power supplies associated with integrated amplifiers, deep stormtrooper bass is a rarity. By comparison, the *ECI-1* is a bass hound, grabbing the bottom end of a speaker cone and adding an octave of extension. While this coats bass lines from groups like Funkadelic in more funk than you might have thought possible from an integrated amplifier, it's more noticeable when reproducing timpani, giving them the weight and impact they deserve.

This firm foundation of bass isn't compromised by the remainder of the frequency range. The *ECI-1* has the same power and clarity throughout its tonal range. Once you've acclimatised to the powerful bass, the next most impressive aspect of the amplifier is the lack of artificiality in the midrange and treble.

Stone me! No more pining for the fjords thanks to the new integrated from Electrocompaniet.

If you play a dry and 'toppy' sounding recording, like Leftfield's *Leftism*, this keeps the recording as detailed as ever, without lapsing into brightness or spit.

At its very worst, the *ECI-1* reveals a touch of grain to the upper mid-range, especially when it's still cool. This is never strong enough to be off-putting and many valve amp fans will probably find it appealing, as it's about the closest you can get to pentode sound from a solid-state amp. Nevertheless, if you are after an almost sterile, grain-free performance, this may well not be the amp for you.

Each aspect of the amplifier's performance — including imagery, rhythm, dynamics, coherence — is given appropriate priority, without being underplayed or exaggerated. This makes it difficult to single out tracks that worked well (or otherwise) on the Electrocompaniet, as it was gracefully competent on almost any kind of music you could throw at it, no matter how difficult.

In all, this is the sort of amplifier that is hard to pin down. The performance of both the *ECI-1* and *ECP-1* is seriously good in a transparent manner; you simply turn the amp on and forget about it while you're playing music. As such, don't expect to find this amplifier leaping off the dealer's shelves screaming 'Buy Me'. It is a subtle and sophisticated amp that will still be in use when the more obvious amplifiers are long gone. For that reason, I don't expect to see many second-hand examples around.

The *ECI-1* is one of the more important (and most expensive) integrated amps out in hi-fi land. It will not undermine the performance of a well-designed pre/power combo but there are only a handful of integrated models that come close to it. Likewise, the *ECP-1* is only outperformed by a very select handful of phono stages, all of which make it appear excellent value.

If you think back to that fourth year geography lesson about Norwegian exports, oil, paper, wood and fish spring to mind (you'd get bonus points if you mentioned trolls and thick woolly sweaters). Perhaps it's worth adding 'god lât' — good sound — from integrated Electrocompaniet amplifiers to that list. Norway has only won the Eurovision Song Contest once, but they can *Let It Swing* on good amplification.

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Leaving no vinyl unspun in the never-ending search for fine audio, what amp suits the Rega?

Focused on phono

Q I remain an analogue addict despite the advances and improvements in CD sound, and want a new amplifier to go with my Rega Planar 3 turntable and its MM cartridge. I noted your review team's disappointment with the Pioneer A-400X's MM phono input in issue 138, though the A-

400's phono stage was favourably received in issue 92. Would Tom Evans's £141 modification to the A-400 be worth considering?

B Skelton, Buckinghamshire

A Speaking personally, I felt criticisms of the A-400X's phono stage in the issue 138's group test were a little harsh. I find the A-400X's phono stage is very acceptable indeed, and it should be quite good enough for your Rega/MM combination. NAD's 306 also has an extremely good phono stage. It is much better than average, though the full benefit is perhaps only realised fully when MC cartridges are employed. Evans's Pioneer mod is certainly worth it, though it makes the amp pricey.

This is an ex part

Q My turntable is an Acoustic Research Legend with Linn arm and Ortofon cartridge. I need a new drive belt, but unfortunately, AR ceased trading some time back. Any suggestions?

T Wakefield, Middlesex

A Manticore (01585 379309) carries spares for a number of turntables no longer in production, including Ariston and Logic, but

Query of the month

Q Please help me. About six years ago, I was admitted to the Betty Bose Clinic for Hi-Fi junkies, having been hooked on one of the most powerful drugs known to man – hi-fi. I was suffering from endless bad trips to dealer dems, reading countless magazine articles, and finally my wife left me – though I did get to keep the hi-fi in our separation agreement. On release from the rehab clinic I no longer cared if I listened to Binatone or B&O (*is there any difference? Only joking – JMH*). However, I soon lapsed into my old ways, having obtained a pair of Naim SBLs. So please help a poor miserable wretch and advise me on some pukka up-to-date speaker cables to replace my ten year old Naim cable. I also have a Naim 32/160 pre/power combo.

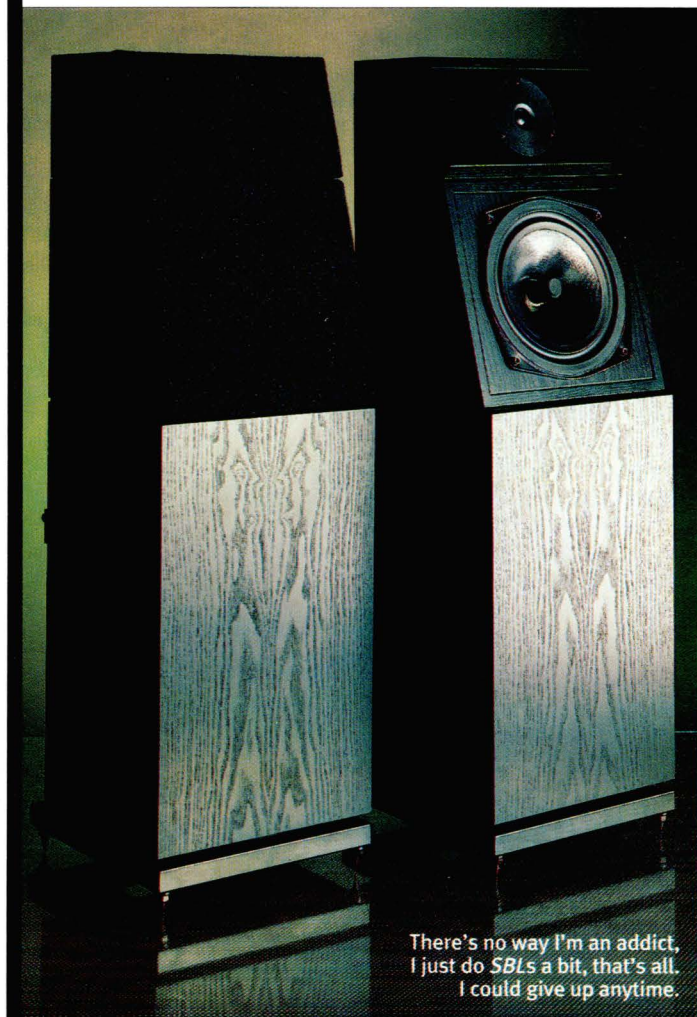
M Forecast, London

A There are far worse things to give your life to than hi-fi and music, so welcome back! Naim amps are very cable sensitive, and you must avoid anything with a high capacitance and excessively low resistance. With your amp, it used to be safest to stick with Naim cable. Your old cable is probably Naim's NAC-A4, so why not investigate NAC-A5? Or alternatively, check out Chord's Flatline which sounds excellent, works well with Naim amps, and might tame the coldness which SBLs can be prone to.

Query of the month



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



There's no way I'm an addict. I just do SBLs a bit, that's all. I could give up anytime.



It's time to belt-up that *Legend-ary* AR turntable — but with who's belt?

unfortunately not AR. Apparently, AR spares were being handled by a company called Elna, but they seem to have gone. A Linn or Thorens belt is often a good general replacement for many turntables, and might prove satisfactory for the Legend if memory doesn't play me false. Many decks evolved directly from the original AR turntable and copied its use of an AC synchronous motor driving a sub platter — an example is the Thorens TD-150. Therefore, the dimensions and relative positions of items like the motor and sub platter are often quite similar on many suspended turntables.

They don't get along

☉ I recently purchased a Sony CDP-715E CD player after reading the review in the December '94 *Choice*. Generally, I'm very pleased with it, but I find some discs now sound rather harsh with a treble that's almost physically painful. My old Kenwood sounded much smoother. Is this due to some incompatibility between the new Sony and my pretty ancient Marantz PM-200 amplifier and B&W DM-5 speakers, or could there be a fault with the CD player itself?

J Speak, W. Yorkshire

Ⓐ While it's not impossible that your Sony is faulty, it seems much more likely that its crisp, lively sound is proving too energetic for your current amp and speakers. Try making sure all your connections are clean and tight, and check the tightness of all screws fixing the drive units to the front baffle. New speaker cables might be needed;

Chord's Flatline is very clean and well-balanced, and worth trying. If a new amp is needed, audition Pioneer's A-400X and, if you don't use vinyl, the Audio Innovations Alto. Arcam Delta Two loudspeakers give a rich, full sound that should produce more tonal bloom and weight than your B&Ws.

Power hungry bass

☉ I have an Arcam Alpha 6 amp, Rotel 965BX CD, Pioneer CT-95 cassette, and Rega Kyte speakers on stands. Interconnects are Van den Hul The First, and Straight Wire Flex 4. I'm generally happy with the sound; it's detailed but rather bright, and there's a lack of bass. I plan to keep the Rotel but want to upgrade my amp and speakers. I was thinking of a Copland CSA-14 amp with perhaps Sonus Fabers *Minima Amators*, or the UKD *Callas*. I'd

Pioneer's A-400X — a perfect partner for Sony's super CD player and ageing B&W speakers?



like to keep the detail, but want more bass and less brightness.

A Rombos, via the Internet

Ⓐ The Copland CSA-14 is a very nice amp, and matches well with Sonus Fabers *Minima Amators*. However, they are rather power hungry and take quite a bit of

driving, especially if you are after high volumes in a large room.

If you are considering changing your amp and speakers, though, you should first consider improving the CD source first. Try to get a listen to a decent player in the £1,000+ class, like the Meridian 508. This should add refinement and bass.

Will a Copland CSA-14 amp be able to drive Sonus Fabers yet still give good bass?

The German connection

☉ I am looking for an amplifier to partner my Mission 753 speakers, and after reading various reviews in *Hi-Fi Choice*, I've shortlisted several including the Mission Cyrus III. However, I'm concerned that anything I buy for use here in Germany might not work properly in the UK with its different mains voltage.

M Price, Germany

Ⓐ Now that the UK mains voltage has been lowered slightly to bring it into closer proximity to that of Europe, any difference should be minimal. I checked with Mission, who told me that the German version of the Cyrus amplifier is exactly the same as the one sold in the UK.

A fresh start

☉ I intend to buy a new system in a month or so, and while I feel sure about the CD player I'm still uncertain about which amplifier and

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loudspeakers to go for. I've considered the Arcam Alpha 5, Creek 4140 and Rotel RA-930AX amplifiers, and looked at Epos ES-11, Vandersteen 1B and Celestion 3 loudspeakers. What would your recommendations be for the best match?

J Yusay, Philippines

A You're heading in the right direction and have shortlisted some good components. There are, of course, other amps and speakers that might be added to your shortlist, but the thing to do is go and listen to some combinations so you can decide for yourself. If you like a rich/warm sound, try the Rogers LS2a/2 and Arcam's Delta Two — the latter delivers excellent bass for its size.

Clocked warranty

Q I've recently read a lot about Trichord's Clock 2 CD player modification and the way it improves clarity and detail. However, how does it affect the manufacturer's after-sales warranty? If I had my player clocked and it broke down, where would I stand?

M Ackroyd, W. Yorkshire

A Strictly speaking, any unauthorised modification carried out by yourself or a third party without the express approval of the manufacturer will invalidate the warranty. Trichord themselves offer a guarantee, so if anything went wrong as a result of their work, you could get in touch with them. Many of those interested in Clock 2 probably have CD players that are now a few years old (and thus out of warranty), in which case this problem doesn't arise. If in doubt, wait a year until your guarantee period runs out before having your CD player Clock 2 modified!

Pre or power

Q I have a pair of Snell K/II's driven by an Audiolab 8000A ('94 model), and although there is no sense of strain I feel I could improve my sound by adding either a preamplifier or a power amp. Is this likely to be worthwhile, and if so which should I go for; preamp or power amp? If I buy a new power amp, should the existing power amp in the Audiolab 8000A be disconnected or left idling?

S Conesa, Spain

A Adding an Audiolab 8000P to your 8000A should improve tightness, drive and control, giving a firmer, cleaner sound. The 8000A's own power amp could be left idling, but as the speaker in question permits bi-wiring, it would be better to use both power amps — try using the 8000A for treble and the 8000P on the bass.

Which one on top?

Q Whenever I see glossy pictures of pairings such as the Audiolab 8000C/8000P or Meridian's 500/563, the individual items are always stacked one on top of the other. Aesthetically it looks great, but isn't there a need for physical separation? Would it be better to position each component on its

own shelf or stand, or is it okay to stack? If the latter, which box should be on top?

D Newall, Bristol

A Most hi-fi components — except the turntable — will stack without serious compromise, but you may find that hum levels increase on phono if a preamp is placed on a power amp. Also, many CD players and DACs emit fairly large amounts of high frequency noise which can lead to poorer quality sound from other sources.

Most hi-fi components sound best when placed on their own individual support platform. However, not everyone has the space or cash for such extravagance! If one of the items to be stacked produces heat it's probably best to have it on top.



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OK, so you've got that high-end CD transport and DAC, ultra-expensive amplifier set-up and the most drop-dead gorgeous pair of speakers on God's earth. How are you going to connect your system together without some cables? And not just any cables, oh no. We are talking that top banana, dog's cojones, radically good sort of wire that transforms your system into a Robo-Terminator-Kill-o-zap-Stormtrooper-from-the-planet-Death kind of system. This month, *Hi-Fi Choice* is offering the creme de la creme of cabledom; Precious Metals cables made by the Kin Company in the UK, which produces a wide range of analogue and digital connections. Promising to make the trip from source to speaker as accurate as possible, the manufacturer claims that with Precious Metals, 'you hear the music, not the wire'.

All Precious Metals cables are silver alloy, multi-stranded, Teflon-coated and non-directional. The alloys' composition is a secret — it's been developed for neutrality and clarity. By using a silver alloy, the purity of sound is maintained without the expense of pure silver or the graininess of copper. Sound degradation is minimised by means of some nifty gold-plated solderless plugs, making the connection between cable and plug direct. Worried about fitting speaker cables under the carpet? Fear not — Precious Metals offers FlatWeave technology, allowing a greater number of conductors to be used in flat profile.

The first lucky winner will be supplied enough Precious Metals cable to re-wire a top flight audio and video system. The first name out of the single-ended, directly-heated, output transformerless hat could re-wire an entire audio-video system with **100-series** co-axial analogue, digital and video interconnects and eight-conductor **108** speaker cable, worth up to £3,085. The second winner will be able to cable an entire audio system with the aforementioned **100-series** analogue interconnects and **108** speaker cable, worth up to £820. Finally, five runners up will each receive a pair of the coaxial **Silver Signal 75** interconnects, worth £75 a set.

Just answer the five questions correctly for a chance to get totally wired.



COMPETITION RULES

The Editor's decision is final and no correspondence will be entered into. All winners will be notified by post. The competition is not open to employees of Dennis Publishing Ltd, Picture The Sound, their suppliers, agents or associates. We regret that the competition is open to UK residents only. No cash alternative will be offered. The act of entering the competition will be taken as acceptance of the rules. You must notify us if you do not wish to be informed of any special offers or promotions. For a list of winners, write enclosing an SAE to *Hi-Fi Choice*, Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ.

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You will be asked to state your answers to the five questions below. Winners will be picked at random

THE QUESTIONS

3. What material — found in spacecraft and cooking utensils — is used in the coating of Precious Metals cables?

- a) Teflon
- b) Rayon
- c) Nylon
- d) Klingon

1. Which UK-based company manufactures Precious Metals cables?

- a) King Co
- b) Kin Company
- c) Kinky Co
- d) Kin-L Company

4. How many conductors are used in the 108 speaker cable?

- a) 108
- b) eight
- c) 100
- d) three

2. What is the Precious Metal used in the company's cables?

- a) Brass
- b) Bronze
- c) Silver
- d) Gold

5. What is the name of Precious Metals' under carpet cable?

- a) ThinWeave
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There is much obsession at the ends of the branches of the audiophile tree, but what exactly has that got to do with the price of Blu-tack? Discuss.

write on!



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

Accept no substitutes

I consider your Directory very reliable and would need conformation from you that when you recommend a model which is no longer available, another model can be substituted. For example, Pioneer's A400 amplifier is not available in France, so they recommend the A403R in its place, Rotel suggest the RA935BX in place of the

RA930BX and Denon suggest the PM480 instead of the PM450. Are they similar models? Would you rate them as highly as the originals?

Jean J Roulmann
By Facsimile

Sadly, there is often no commonality between one outstanding model in a range and its kinfolk. The Pioneer A-400 and A-400X amps are a perfect example; few other amps in the Pioneer range come close to these superb performers. Although many models have only the slightest cosmetic changes, especially from country to country, we can only Recommend products that we have tested. Alan Sircom, Reviews Editor

High end, low budget

'High-end hi-fi' is a phrase often spoken and read about, especially in yours and other magazine titles. Systems costing £10,000 — if only! I am all for the best sound possible, but £60,000 — I wish.

So it was with joy that I read in issue 137 that your blind listening panel had found a 'Solid Gold Best Buy' of a CD player that didn't have a four figure price tag. I had been wanting to upgrade my ageing CD player, now some seven years old, for some time, so off I went to the store — with Choice in hand and cash in pocket — to make a purchase.

Talk about pen being mightier than the sword! All the hi-fi shops in my area had sold out of the CDP-715E. Some said it was because of the article and the public's response to it. So, after a six-week wait, I finally found one and boy was it worth the wait. The musicality of the 715 was just as you had said it was. I don't know how Sony did it, but it was a revelation to me.

My system has been born again, the sound is now quite wonderful and this is simply the way it is supposed to be, not how many thousands have been spent. So, a big thank you for caring for both ends of the market, you really can have high end sound at a low-end price, if you are prepared to look. In this case, perhaps all that glitters is gold, after all.

PA Boyd
St Annes, Lancs

Scope for disaster

On page 33 of issue 140, under the title Room for Improvement, your clinician JMH recommends modifying the internal damping of Spendor BC1s, by the substitution of the latter's acoustic foam for Deflex damping panels.

I feel he should perhaps have pointed out that the BC1 in fact has three layers of damping, with a bitumen compound and heavy felt pads underneath the foam to damp the thin-wall cabinet panels. On no account should any attempt be made to remove this two-stage mass damping combination, which is not easily reversible and could be very messy.

Which in turn raises the question whether Deflex is really such a good idea here. As I understand it these panels have a dual acoustic/mass damping role, whereas the vast majority of commercial

Write On fan

I'm rather concerned about descriptions such as 'a wide and deep soundstage', in your magazine. The reason being your full review sessions are performed 'blind'. Is it then possible for your blind panel to make out whether the presentation was in front or behind the speakers, regardless of how good the layering is?

I trust, however, your mag will always have the guts to tell the whole truth, with the most objective and neutral reference point possible.

Keep it up with those stunning 3D graphics.

Henry Fan
Oslo, Norway

Blind tests of everything other than loudspeakers have the speakers visible, only the sources and electronics are hidden from view. In the case of loudspeakers, while listeners cannot accurately determine the position of the speakers, if a speaker is perceived to project a soundstage past the masking cloth or behind the rear wall of the listening room, it can be taken as having good image depth. Alan Sircom, Reviews Editor.

speakers only include some form of acoustic damping. The addition of some panel damping probably explains part of the improvement that some observers have noted when fitting Deflex panels. But fitting them on top of the mass-damping pads which are already part of the BC1's very subtle (and successful) enclosure design seems very unlikely to offer any comparable advantage, and might even unbalance the delicate compromise achieved by the manufacturer.

Paul Messenger
Kent

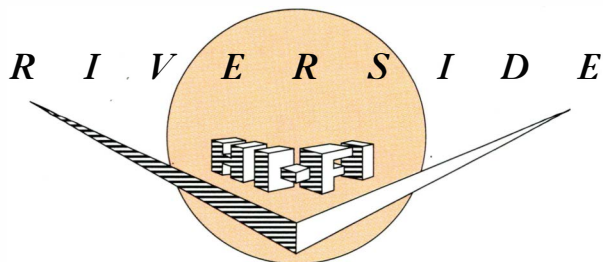
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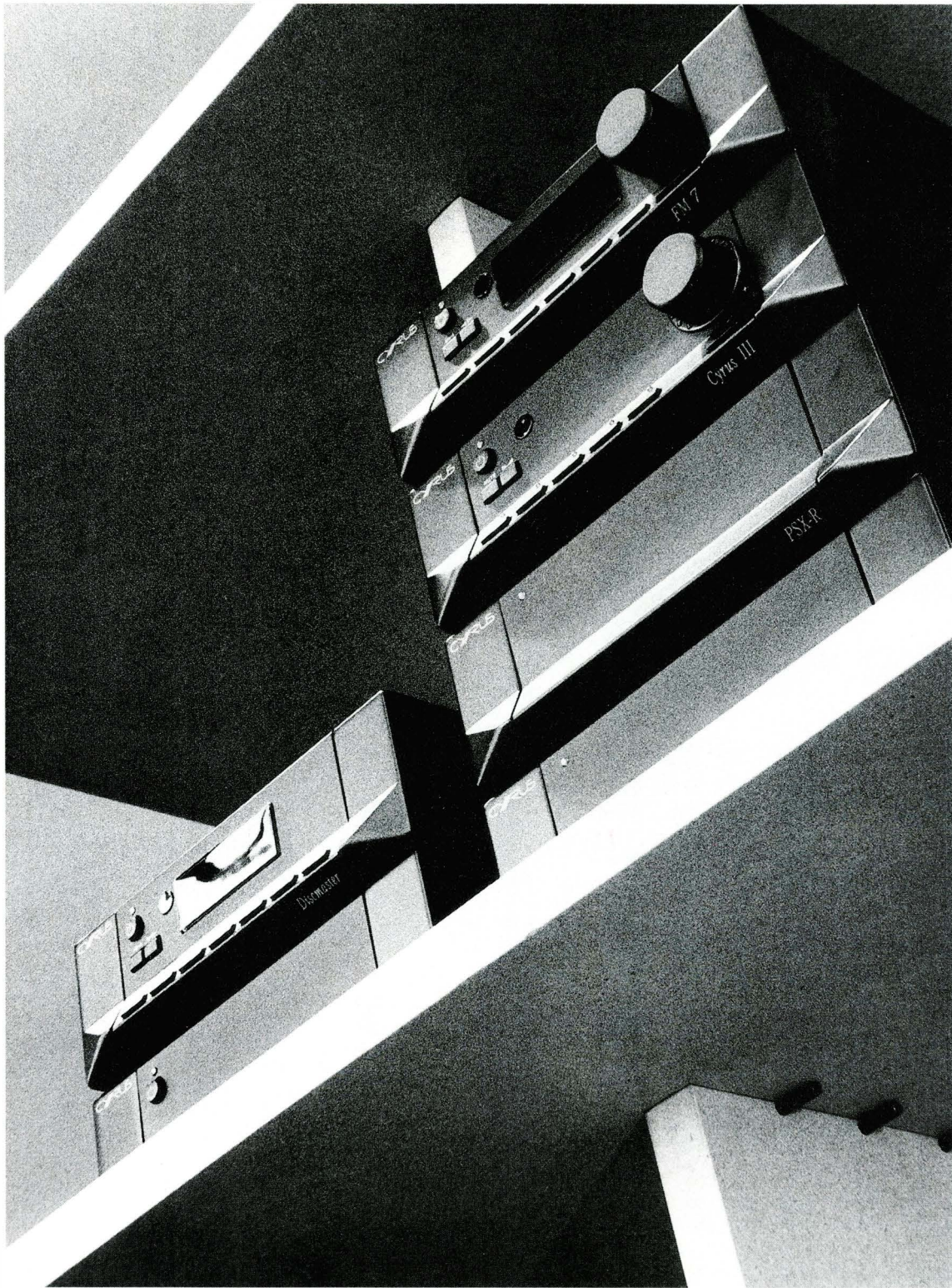
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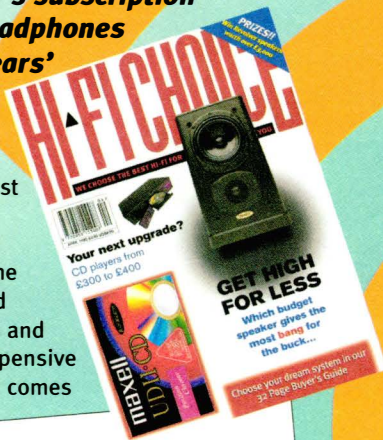
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20th century fox

If Nostradamus had been an audiophile, we might have known more about the future of CD formats at this point...

When Philips first demonstrated CD, back in the late seventies, it was a 14-bit system with only an hour's capacity. A few of us kicked up a lot of dust, arguing that there was not enough headroom for the future. But in general, the music industry neither understood nor cared about the issues.

Fortunately, Philips went on to team up with Sony, and the Japanese company pushed the specification up to 16-bits and well over an hour's play, by slightly increasing the size of the disc.

Exactly the same thing is now happening with high density CD. The people and the companies who hold the power to shape the future do not understand the issues involved.

The only hope is to keep up the pressure on Toshiba, as well as camp-followers Time-Warner, Panasonic, Thomson, Pioneer and Hitachi. I have listed ten basic questions which they should be answering.

Note that this list skips the obvious one: where will Toshiba's team put the label on their double sided CD? It also skirts the question of how Toshiba, with almost no presence in the audio and video market (except Dolby surround TV sets) will sell to the public. This also goes for Thomson, with its Ferguson brand an almost forgotten name.

1) So far, all emphasis has been on video and computer applications, with the promise of multi-channel surround sound from Dolby AC-3 or a similar system. All these systems rely on digital audio compression, often much heavier than that used for DCC or MiniDisc. So what plans or proposals does Toshiba have for putting uncompressed audio on the new HD disc?

2) Given that the Toshiba disc boasts higher density recording than the rival Philips/Sony system, and much higher density than an ordinary CD, how will

the new disc cope with users' finger marks? Let's try touching a disc and see what happens (Philips and Sony should let us do some touching, too).

3) Toshiba's system relies on a visible red laser. Last year, Toshiba announced the first samples of a red laser, at \$140 each. Yes — each! How does this stack up with the \$500 price promise for Toshiba's player? (Philips admits it knows of no mass-produced red lasers and has so far refrained from quoting any likely player price).

4) Any new high-density player will need MPEG-2 decoder chips for audio and video, along with at least 16 megabits of RAM memory, a buffer memory for variable-speed data read-out, and whatever extra surround sound decoding is necessary. All this adds a raw cost in decoding chips of around \$150. Add to this the cost of the red laser (see above), the CD turntable, high-precision lens, power supply, casing, and so on. Can Toshiba really still promise a \$500 player on the market some time next year?

5) If the finger-print problem drives Toshiba into sealing the disc inside a protective caddy (which could conveniently carry the label), how does Toshiba plan to make a player that will also play today's existing CDs?

6) And if Toshiba's discs are in caddies, how can Toshiba build a juke-box disc changer for audio discs, CD-ROMs or video discs?

7) Toshiba's double sided disc is made from two half thickness pressings glued together to give them strength. The lens will have a large numerical aperture for very tight focusing. So how will Toshiba make a read-out laser that also plays today's full-thickness CDs? It's worth bearing in mind that the plastics from which any CD is pressed also happens to function as an integral part of the optical system of a CD player.

8) If the player is designed to play both sides automatically, how long will it take to move the laser from one side to the other, and stop and reverse the direction of disc rotation? Toshiba may also encounter a problem when making a player of this type

which is small enough to fit in standard size computer or car dash slots.

9) How much will the disc mastering plants have to pay to install the new ultra-violet laser cutting equipment, which they will need in order to master the super-small pits?

10) How much will it cost pressing plants to install the new equipment needed to make discs in pairs and glue matched pairs together? And how much will it cost pressing plants to modify their moulds to cope with the high temperature plastics needed for pressing the half thickness discs?

Time for answers

More questions rear their heads every day, but those will do for a start. It may well be that Toshiba's team has good answers to all these questions. If so, let's hear them. Is it just a coincidence that Toshiba recently, and at the last minute, pulled out of a seminar in California where they had been billed to answer questions on issues like these put by an industry audience? Is it also a mere coincidence that record company WEA has still not opened up its disc pressing plant in Oliphant, to show the US press how easy it is to make new double-sided, high-density CDs?

Bear in mind that the prime hyper behind the Toshiba disc is WEA's parent company, Time-Warner. It was Time-Warner who last year joined a British consortium to bid for the license to run Britain's fifth TV channel. This is guaranteed to cause interference to existing TV sets if they are already connected to a video recorder or satellite receiver by aerial lead tuned to a frequency close to Channel Five. And millions of sets are presently connected in this way.

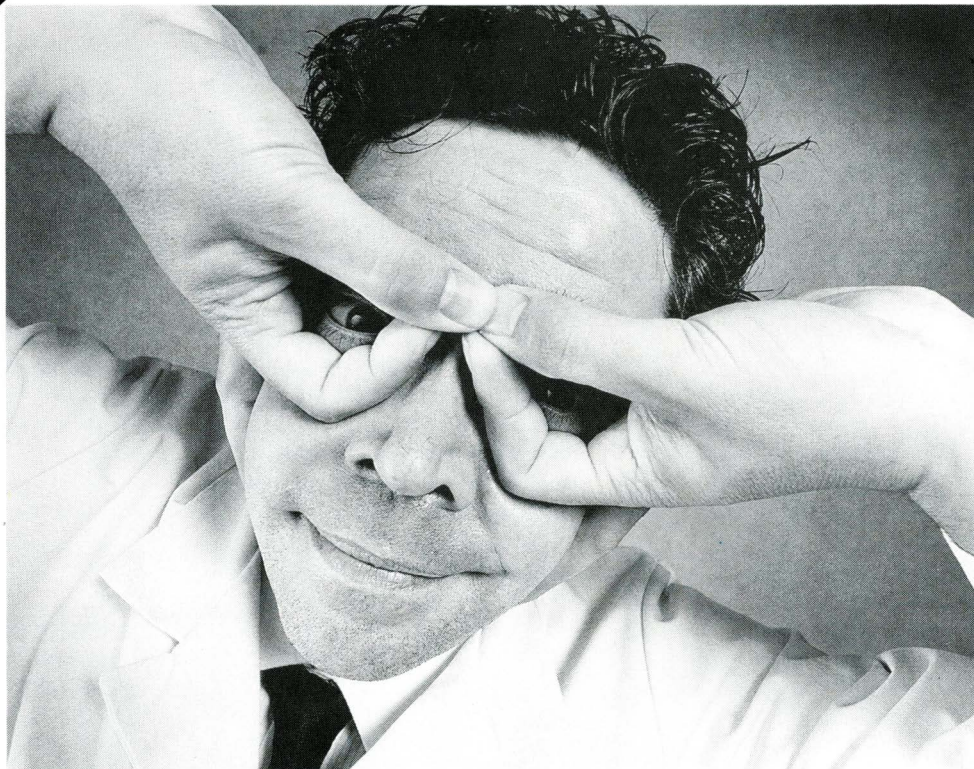
Time-Warner's publicity machine swung into action with reassurances that the problem of interference had been solved. When challenged, Time-Warner's reassurances evaporated. The last I heard was that Time-Warner has now pulled out of the bid to run Channel Five in the UK.

So, when Toshiba finally briefs the European press and trade on high density CD, let's hope that Time-Warner and Thomson/Ferguson are there, too. That way, we are more likely to get a fix on whether the people who are committing us to a new CD system for the next century have any real understanding of the issues involved.

Will the disc format of tomorrow be developed in the interest of corporate marketing or good sound? We still don't know...



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Radiohead

Despite the computerisation of radio, Mister DJ stills saves our lives. Kevin Hilton visits BRITS '95 to find out how.

New technology has forced some significant changes in the way radio works, but among all the automation and computerised play-lists, one piece of wet-ware lives on – the disc jockey.

The DJ no longer sits between the twin decks of power, spinning the platters that matter. He or she still plays music, but it now tends to come on small and shiny discs or computer files rather than 120g of black plastic with a hole in the middle.

Despite the best efforts of vinyl purists, the compact disc is all powerful in radio, and it is now being joined by MiniDisc and hard disc-based recording/editing/storage systems. The early digital audio workstations (DAWs) were notorious for falling over, to the point where they spawned a rib-tickling gag, which can be updated as: "What's the difference between a DAW and Barings Bank? Barings only crashes once." However, reliability has improved, system capacity is increasing with each new upgrade, and engineers and producers have now become confident enough to try out new technology on complex events.

The latest was this year's BRIT Awards, the self-congratulatory record industry schmooze-fest which, despite all efforts, is still notorious for the 1989 ceremony presided over by Samantha Fox and Mick Fleetwood. (A colleague of mine at the time observed that the TV presentation could have been edited down and released as *Spinal Tap 2*.) Perhaps unsurprisingly, the organisers are still sensitive about this matter and now pre-record for later TV transmission. Radio, however, has the flexibility for live work, and BBC Radio 1 FM broadcast a two-hour show direct from Alexandra Palace.

As part of the Corporation's Producer's Choice scheme, the broadcast was sub-contracted to an independent company, Wise Buddah, run by DJ Mark Goodier, who anchored the show, and producer/technician/musician Bill Padley. Founded in April 1994 to produce the One FM show *Hit Parade*, Wise Buddah operates out of a small studio near Broadcasting House in London's West End, and has since worked on R1 Christmas Shows, Goodier's own

evening sequence, and the Mercury Music Awards.

Both Goodier and Padley are self-confessed techno-freaks, but they see it as a means, preferring to put the emphasis on editorial content rather than technology. Although their studio features a trusty PR99 quarter-inch analogue tape machine, Goodier and Padley are dedicated to digital, using the latest Denon CD players and MD play-record units, as well as two DigiDesign *Pro Tools* DAWs. The plan for the BRITS was to work entirely from compact/MiniDisc and hard disk.

"This is the only analogue bit up here!" quipped Goodier from his DJ booth, indicating himself. "Don't worry," said Padley, "we'll fit him with a direct input."

In the run-up to the broadcast, the Wise Buddah team, augmented by co-presenters Andrew Collins and Stuart Maconie, recorded interviews and packages onto *Pro Tools*, where they were edited; such systems speed up the process over traditional tape cutting, and allow sequences to be faded in and out without the need for re-dubbing or other recorders. The initial plan was

then to transfer everything to MD, allowing Goodier to have control over all sources in the DJ booth, which had been built in a BBC Radio 'outside broadcast' truck. Due to a mechanical fault (a rogue loose screw inside the MD recorder), everything came straight off the *Pro Tools*.

Although this was not quite the way Wise Buddah had hoped to prove their point, it all worked. In addition to the pre-recorded interviews, stars including Sting and M People came into the studio for live interviews, while a wireless back-pack was heavily used around the site, most notably when Madonna issued a regal declaration that she was ready to be interviewed.

"Mark rushed out to interview her and Richard [Earle, BBC senior sound supervisor] had to play CDs to cover," said Padley. "The interview came direct onto *Pro Tools*. I chopped it down from five minutes to two and it went on air straight afterwards. There's no way we could have done that on tape."

Live performances, and the all important presentations, came to the radio truck via a circuitous route: feeds from the stage went to the Manor Mobile and the Chrysalis control truck, which in turn sent feeds to a BBC B-type truck, which then relayed a mix to Wise Buddah, who were working in another Corporation van.

"It's a bit of an odd situation, where we're working for the Beeb and then sub-contract them to work for us. But the best people for this job are BBC engineers," explained Padley.

The BBC has run an extensive programme of evaluation, and is using a variety of hard disk-based systems around its various departments. The BRITS '95 was not the first ever use of DAWs (last year's Donnington festival relied heavily on the technology), but as Richard Earle said, "It's probably the first time we've put so much faith in such a system." Bill Padley added, "People are now confident that it won't be a catastrophe."

Listeners were unaware that most of what they were hearing was played from a Macintosh computer, but that's the idea. All they had to contend with was presenter Chris Evans, who announced that he is to take over R1's breakfast show, which will be produced by his own independent company. Now, if they use digital technology, perhaps they could process his voice to make it less annoying. Perhaps.

The only analogue sources employed in the BBC Radio transmission of BRITS '95: Mark Goodier (right) and Bill Padley



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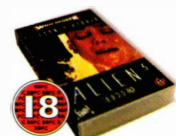
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THE VIRTUAL LABORATORY

New lab tests make us the world's most advanced hi-fi mag — Paul Miller shows how.

Almost everyone today has heard of Virtual Reality — computer software and hardware that generates the impression of an alternative but convincing environment, often referred to as 'cyberspace'. Now, thanks to Virtual Reality techniques, the measurement of hi-fi is about to be transformed forever.

The very latest computerised measurement systems sport things called Virtual Instruments (VIs). These use powerful computer programs to imitate 'real' measurement instruments with familiar front panels containing knobs, dials, buttons, indicators and graphical displays.

Switches may be flicked, buttons pressed and controls turned, using either a mouse or computer keyboard. Behind this 'user interface' lies the programming that executes the commands of that particular instrument. Number-crunching, you'll be pleased to hear, lies beyond the scope of this article.

VIs are just like the real thing, only better. They're better because the instrument can be specifically tailored for each job at hand. VIs can also communicate with real instruments, instructing them to perform sequences of

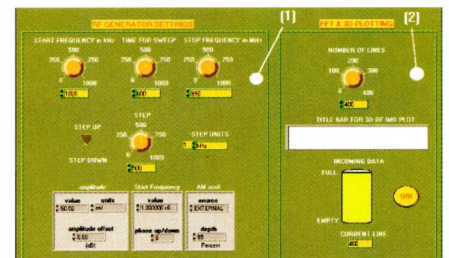
tasks before downloading data for additional processing and storage in the computer.

While technology-led hi-fi companies like Linn Products have adopted similar approaches, the application of VIs does not begin and end with audio. Training sessions for these computer marvels have included teams of people from companies as diverse as Ford's engineering research facility and Matra-Marconi Space systems.

For *Hi-Fi Choice*, 'real instruments' include digital storage oscilloscopes, spectrum analysers and function generators, in addition to a high-resolution data acquisition card now installed in my computer (see 'The Nerve Centre', right). Back in the virtual environment, individual instruments can be represented by a single icon on the screen, for incorporation into progressively more complicated VIs. This modular approach allows limitless numbers of highly complex instruments to be developed and de-debugged very efficiently.

The diagram (below left) illustrates how a single, high-level Virtual Instrument may call upon the programming of many sub-VIs in order to execute a command from its front panel. Each VI is represented by a square icon and the inset

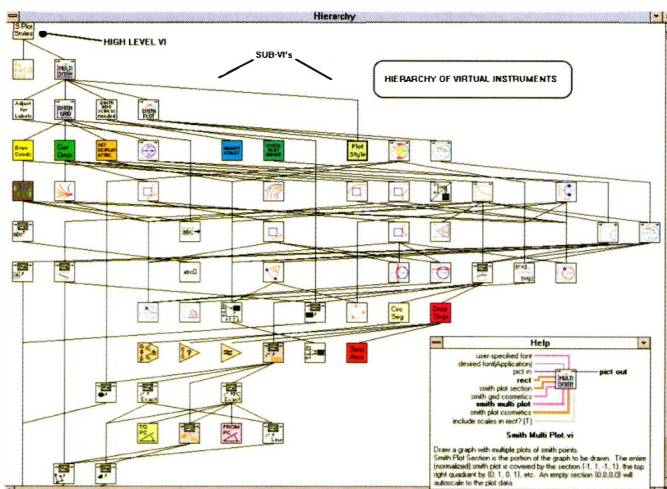
edition of *Hi-Fi Choice*, in connection with our group test of amplifiers.



The panel is divided into two areas — it may look complicated, but it is deceptively easy to understand! The box on the left (1) takes control of an external Hewlett-Packard HP8657B RF signal generator. The computer guides the instrument through a frequency sweep from 1 to 990 MegaHertz, at 0.5MHz (500kHz) intervals, over a period of ten minutes. This sweep is filtered and fed into the amplifier under test. As you can see from the panel, all parameters, including the level, offset, modulation depth and sweep direction are fully adjustable by the user.

Meanwhile, the box to the right (2) controls an HP3561A spectrum analyser, downloading partially-processed data that is derived from the speaker output of the amplifier. The 'number of lines' function refers to the final resolution of the 3D plot, leaving the VI to calculate how many averages may be performed before downloading each line, in sequence, within the desired sweep time. Once complete, the data is stored for future recall and will allow additional comparisons years after the product has left the lab.

Let's step back and find out how to create VIs to produce and analyse signals that might be handled by a hypothetical hi-fi amp. We begin with a simple signal generator, capable of generating sine, square and triangular waveforms whose amplitude (level), and frequency can be selected by the user. The front panel might look something like this:



'help window' shows the data inputs and outputs available.

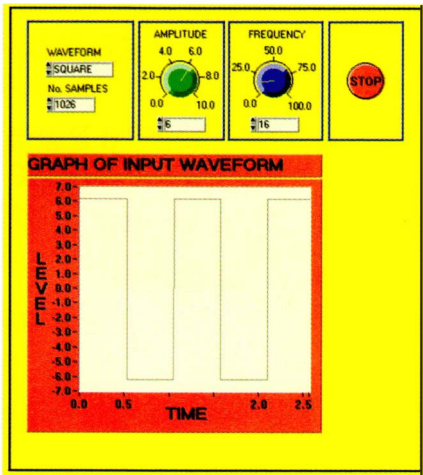
Because instruments can be developed for specific applications, the front panel of a complex VI can be made to look deceptively simple.

As an example, just look at the front panel of the virtual instrument which I designed last month to acquire and process data for the 3D RF susceptibility tests, published in the May

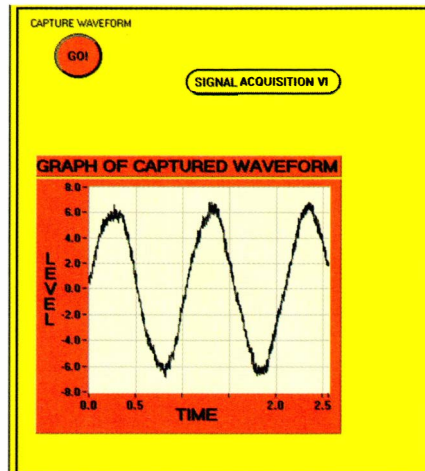
The nerve centre

A computer equipped with 66MHz 486 processor (including maths co-processor) and 8Mbyte of RAM would be a minimum specification for running most VI programs. However, our applications involve the processing of vast quantities of data and demand the most powerful PC technology now available. The current system uses a Gateway 2000 computer, sporting a 90MHz Pentium processor with no less than 32Mbyte of RAM and 2Gbyte of disc storage space.

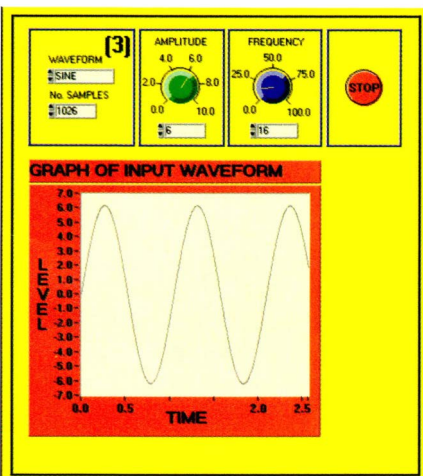
A multi-level 3D dataset for a CD player, for example, currently takes around 30 minutes to acquire, and will include some 6,336 million points of data, which are processed and stored as 192 million points in three 400 x 400 x 400-point arrays.



A square-wave signal has been selected: its level may be adjusted by the green knob and its frequency by the blue knob, while the result appears on an oscilloscope display. The colours decorating the front panel may also be programmed by the user. If we return to the waveform box (3) and select the sine function, a sinewave is produced and shown on the graphic display.

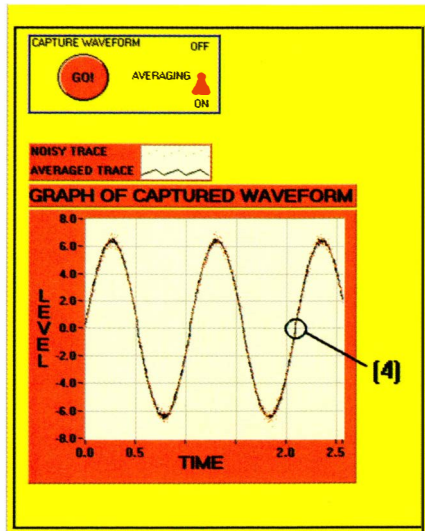


At this stage, the VI processing the amp's output signal has very limited resources, yet the display already shows that the amplifier has not only distorted our pure sinewave but also added a significant quantity of noise. This data is then passed through a simple ten-point averaging program to clean up the appearance of the waveform.



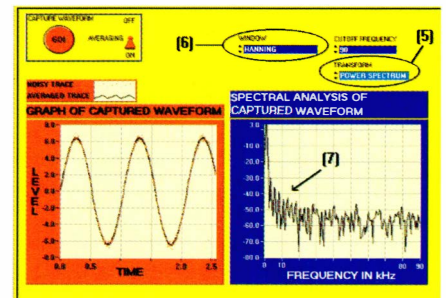
This digitally-generated sinewave is then passed to a 20-bit DAC (Digital-to-Analogue) board within the computer, to provide an accurate analogue sinewave which is then fed into the CD/aux input of our amplifier. Hence the title of our instrument display reads 'Graph of Input Waveform'.

The amplifier's volume control is increased until its output reaches 1 Watt into a 4Ohm speaker load. Its output is then grabbed, either using an external spectrum analyser or via the data acquisition board within the computer, either of which will be under the control of a new VI. This acquisition VI will then convert the amplifier's analogue output into digital data for further processing, displaying the waveform on another graph.



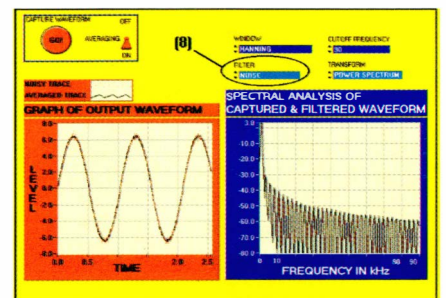
If the averaging function is selected via the toggle switch on the front panel, the display shows two superimposed traces: the averaged waveform (black) above the original noisy waveform (plotted in unconnected red dots). This averaged trace exposes distortion (4) produced by the amplifier.

In order to examine properly the nature of the distortion and noise, the time-based data must be transposed into the frequency domain by using one of many transform programs. This may include the conventional Fast Fourier Transform (FFT), used by most spectrum analysers, or the less common Fast Hartley and Hilbert power and cross-power transforms.



The result is a virtual instrument that offers a choice of transforms (5) together with a selection of specially-named window functions, including Hanning, Flat Top, Hamming, Blackman and Blackman-Harris (6). These smoothing windows are necessary to improve the spectral characteristics of sampled data before performing spectral or Fourier analysis. The resulting amplifier power spectrum is displayed on an adjacent graph, showing a mix of odd-order harmonic distortions, still partially buried in noise (7).

To separate the distortion from this noise, a cross-correlation program is used to compare successive arrays of data, and isolates fixed (distortion) components from random (noise-like) ones. This is akin to time averaging and is distinct from the ten-point Root Mean Square (RMS) averaging initially performed on the noisy waveform. Now the data-acquisition VI is really taking shape!



Not the January Sale

Record Players

Linn LP12 Valhalla with LVII/Ittok Used £479.00. Re-tipped and refurbished moving coil cartridges, **Kiseki, Koetsu** and **Linn**, see sale list. **Rega Planar 2** and **3** turntables with various cartridges, all at minimum of 20% off list price. See sale list for prices and lots more product.

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Micromega Stage 1, 2 and 3 ex-dem as available, 20% off. See sale list.

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Micromega Duo 2.1 / Pro2 transport and Dac, were £4250, now £3449.00

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Quad 66 CD player with remote, used was £500.00 now £279.00

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Audio Research LS3, LS7, D200, VT60 ex demo as available. See sale list

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Neat Petite black textured paint finish used, were £595, now £399.00

Epos ES11 black or walnut veneer were £395, now £315.00

Epos ES14 black ash veneer were £585, now £465.00

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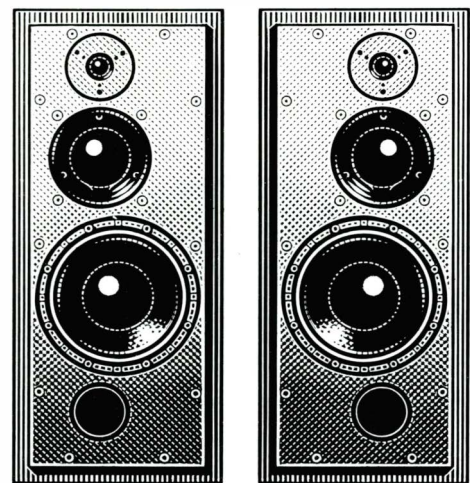
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Measurements — why bother?

Complete and thorough hi-fi reviews contain a mix of observations: subjective (preferably obtained blind) and objective. This mix gives the fullest possible understanding; measurement-only or one-man/sighted-product reviews are, by this definition, incomplete.

Sadly, our even-handed approach continues to attract criticism. Often those who decry the application of objective techniques, whether in the form of blind listening or comprehensive lab reports, do not (or cannot) coordinate such thorough procedures themselves.

Anyone can sit on their butt and proclaim: "Measurements don't mean anything anyway." I have very little patience with this defeatist attitude. After all, the wheel was no great shakes until someone had the bright idea of rounding off its corners.

Sure enough, rudimentary measurements such as power output, noise, simple harmonic distortion and input sensitivities were never conceived to explain the sound of a product. The notion that one amplifier might sound different from another, for example, is a relatively recent innovation in engineering history.

Our understanding of why CD players sound different from one another, of why a loudspeaker is better suited to one room and not another, or why the success of an entire system could hinge on your choice of cables, is patchy at best. But that is no reason to abandon all hope of ever grasping what currently eludes our best efforts.

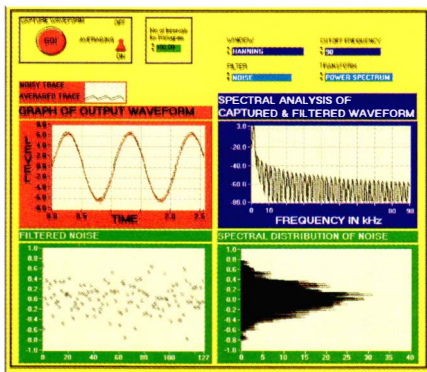
The most thorough reviews always place the collective opinion of a level-matched and cross-correlated blind listening test ahead of any one subjective commentary. This is not a prejudice of subjective writing but an acceptance of the frailty of the human condition which, with the best will in the world, is inevitably influenced by the nature, price and reputation of the product under test.

It also follows that if advanced measurement techniques are to be developed, they must correlate with the collective verdict of such a panel, not the other way around. 'Hearing' what you have just measured is a fallacy, albeit a comforting one, still repeated to this day.

It's my hope that by achieving a 'working correlation' between measured and auditioned performance, we can not only justify our collective opinion but confidently offer solid and reliable advice on system matching and component compatibility for readers. If this goal were striven for rather than derided by other members of the hi-fi press, we would all be better served.

PM

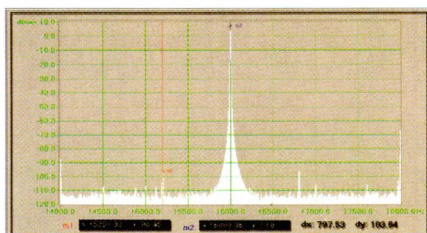
By using front-panel controls, we can invoke the noise filter (8) which makes a dramatic difference to the power spectrum. It clearly reveals the extended odd-order harmonic distortions generated by the amplifier. But what of the noise? All manner of options present themselves, including statistical, regressional, probability and distribution programs. But, for the sake of expedience, a simple scatter plot will suffice.



In its final guise, the acquisition VI uses a scatter plot to map the output of the amplifier's noise while a histogram is used to chart its distribution. The bell-shape of the histogram plot (which is lying on its side) tells us that the spurious noise has a Gaussian-like distribution rather than one that is truly random. If this amplifier were real, it would be destined for the scrap heap!

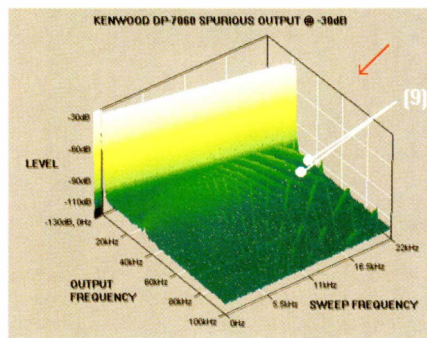
These example VIs employ relatively simple programming techniques, yet they demonstrate that once a signal is in the digital domain, the choice of subsequent processing and analysis is almost without bounds.

Very powerful VIs for Dynamic Signal Analysis have already been developed and, due to the nature of their programming, may easily be updated and modified without expensive hardware changes. The following plot is taken from such a high-level instrument showing discrete 798Hz jitter sidebands at -104dB (red marker) either side of a 16kHz tone (blue marker) derived from a CD player. Few real-world instruments could match this massive 130dB on-screen dynamic range, giving us a potent tool in the analysis of hidden distortions within digital signals.

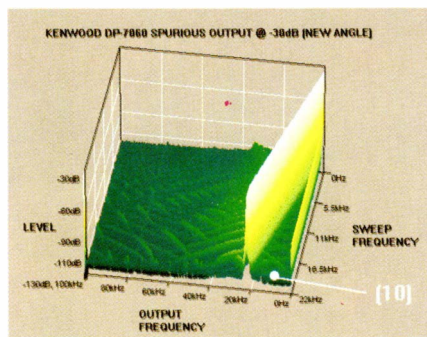


Virtual Instruments: the future

I have already mentioned that stored data may be retrieved at a later date for additional tests or comparative analysis. Datasets for the eight CD players reviewed in issue 141, for example, retain all the information about the player's objective performance at many signal levels and at every frequency. These are not just graphic files but 'live' data that can represent every facet of the player in its absence. Here are some examples of these comprehensive datasets in action.



You may recognise the above as the 3D plot published in issue 141, showing the very high-order stopband patterns (9) from Kenwood's DP-7060 CD player when handling signals at the crucial -30dB level. At the time, I said that these digital artefacts encroached into the audio band, but this is not revealed by the plot viewed from this angle. However, the artefacts become visible when the stored dataset is used to view these distortions from an entirely new angle — the direction of the red arrow.



These sampling patterns are clearly revealed from behind the main 0Hz-22kHz sweep as they criss-cross throughout the audio-band (10). This is probably the first time that 'dirty digits', 'digititis' or 'digital harshness' has been seen as well as heard.

Using the stored datasets, it's possible to view the performance of this player at still lower levels. In this case at -60dB, a region unexplored in previous CD player tests.



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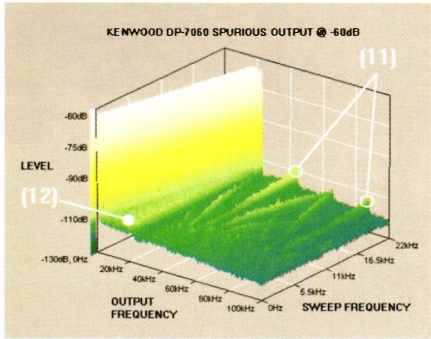
Interconnects Please tick required box	Speaker Cables	Loudspeakers	AV Leads	ADDRESS _____
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A vote of thanks

Despite burning a tanker-load of midnight oil over the last few months, this entire project could never have been pieced together without the help of many like-minded souls. My thanks to Jim Spink (Digital Corporation) for originally suggesting the idea, to Rhonda Wilson (Meridian

Audio) for programming custom CD-R discs, to Brian Paquette (Metric Systems, Texas) for the modified colour-ramp and 3D plotting routines, Mark Taylor (Crystal Semiconductors) for supplying numerous ICs and digital input/output development boards, Mike Martindell (Arcam) for building

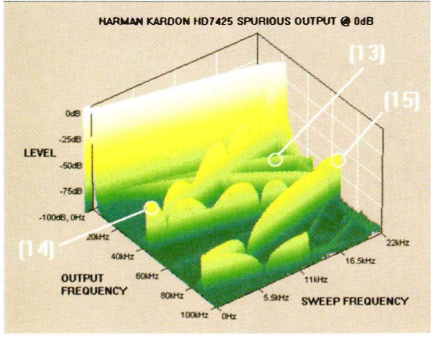
unusual power supplies, and my chums at *Choice* for their encouragement. And last but not the furthest from least, a hearty slap on the back to Tim Fountain of National Instruments who continues to push me, as painlessly as possible, up the steep learning curve of Virtual Instrument technology.



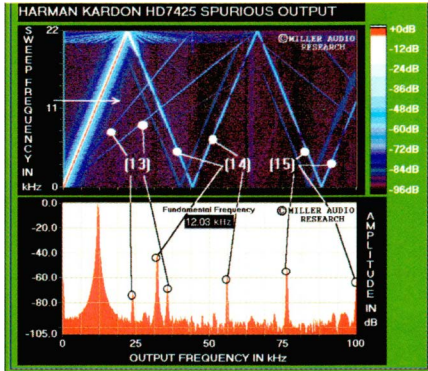
Viewing this data from a slightly different perspective shows that, at a level occupied by real musical subtleties, the player is free of high-order sampling patterns but suffers instead from simple intermodulation distortions derived from the 44.1kHz and 88.2kHz CD sample frequencies (11). The player's audio-band noise floor, meanwhile, can clearly be seen settling out at a respectable -110dB (12).

These new 3D plots are a vital arbiter of performance because they cycle the CD player's oversampling filter, noise-shapers and DAC through a continuous range of levels and frequencies. This reveals changes in noise, dynamic range, distortion and stopband patterns across the entire audio-band — crucial observations that completely escape the single-level, single-frequency distortion plots commonly published.

If the whole image is overwhelming, you can represent the data in another form, or even extract a portion for closer scrutiny.



The peak-level spurious output plot from Harman's *HD7425* (above) displays strong harmonic distortions (13), and sampling images (14 & 15) marching boldly across the 3D plot. Nevertheless, the same data may be interpreted by the intensity-plot VI originally designed for the amplifier tests in May.

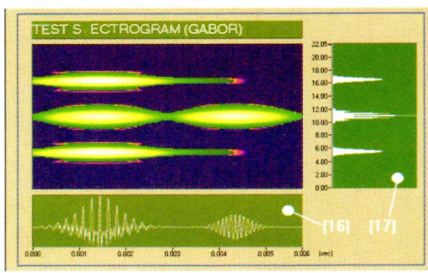


This new Virtual Instrument plots the CD data on a blue intensity graph, but also allows the user to dial up any frequency along the 0Hz-22kHz sweep (highlighted in red). The computer searches through the data before displaying a slice through the intensity plot as close to the requested frequency as possible. I chose 12kHz (indicated by the horizontal arrow on the blue intensity plot), although the black indicator window on the lower plot informs us that a fundamental of 12.03kHz is the closest available match.

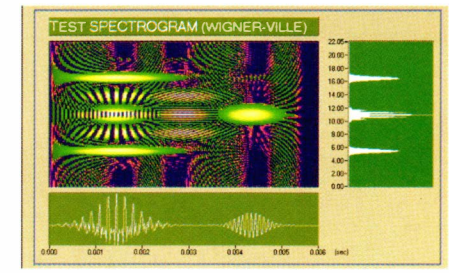
The blue intensity plot shows the mathematical relationship between the original sweep, its distortion harmonics (13) and sampling images (14 & 15) more clearly than the 3D plot. Yet it fails to reveal ripples (modulation) of these images with the clarity of the 3D plot. However, it's now possible to process and review our data from a perspective that suits our needs at the time.

Conventional audio testing is about as far removed from 'real life' as it's possible to get. However, Virtual Instrument programming of the not-too-distant future promises a better understanding of why one piece of equipment sounds different from another.

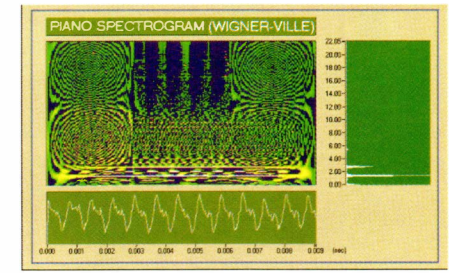
Ideally, we would like to capture the sound of an amplifier or CD player in pictorial form, using images that employ shades of colour to reflect subtle differences in musical timbre, dynamics and detail. Joint Time-Frequency Analysis (JTFA) VIs may make this a reality.



The previous display (the one that looks a little like the Starship Enterprise) is derived from a JTFA instrument which is still being developed. This shows a modulated tone-burst, on both (16), an oscilloscope display (level vs time) and (17), a power spectrum after FFT analysis (level vs frequency). The main display uses a Gabor algorithm to chart continuous changes in time, frequency and level, creating a colour map that's unique to the captured waveform. However, different processing algorithms will create contrasting colour maps of the same data, as shown below.



This JTFA instrument uses an algorithm known as the Wigner-Ville Distribution to interpret the same data. Other processing algorithms, including Short-Time Fourier and Adaptive transforms plus Cone-Shaped and Choi-Williams Distributions are currently being investigated before we launch JTFA in *Hi-Fi Choice*. As a taste of what's to come, below is a JTFA plot using Wigner-Ville transforms to interpret a sample of piano music taken from a test CD player.



I am confident that measurement of all things audio will advance in leaps and bounds from this point onward. There will certainly be some exciting developments in our grand test of CD transports and DACs next month. In addition, *Hi-Fi Choice* is planning a CD containing prime cuts of music as well as unique, user-friendly test signals created using the latest National Instruments VI technology. We have seen the future and it works. Virtually...

THE NEW DEAL

The specialist hi-fi dealer, traditionally the only source of serious sounds, is under attack from High Street chain stores. Simon Davies explains why this is the best news yet for audio buyers.



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There was a time, back in the hi-fi boom of the '70s, when it would have been unthinkable to contemplate buying hi-fi — real hi-fi — from anywhere other than a specialist hi-fi dealer. The emphasis on being able to distinguish between products on the basis of their sound quality rather than features alone demanded a dedicated approach, and a dedicated shop.

Today, the emphasis has changed. Sound quality, versatility, after-sales service and above all price come into the equation as never before. As a

result, High Street stores such as Dixons, Comet, Currys and others are being mentioned in the same breath as the hi-fi specialist, and the specialists are starting to fight back.

Demonstrably better

But what's all the fuss about? What was it that made the specialist dealer a cut above the competition back in the '70s? Well, the introduction of the Linn Sondek LP12 turntable for one thing.

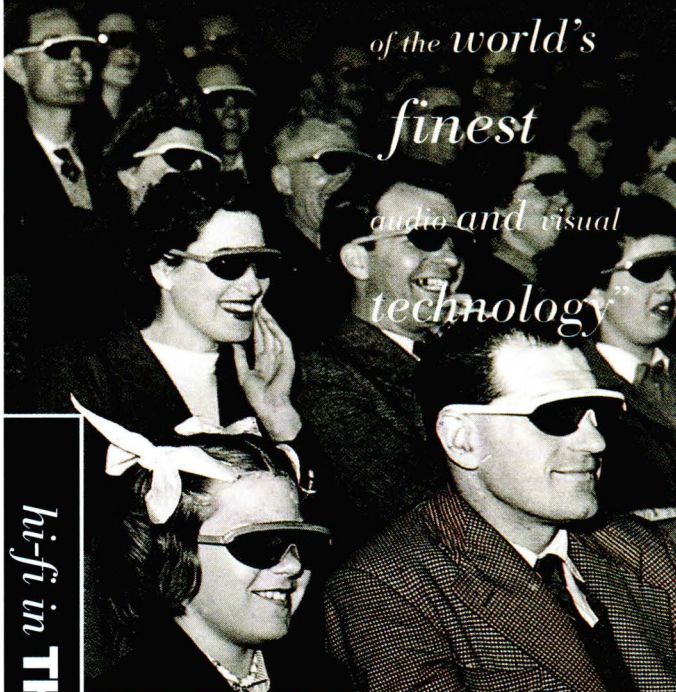
Before the LP12, sales of hi-fi had broken down into two camps: the music centres and packaged systems

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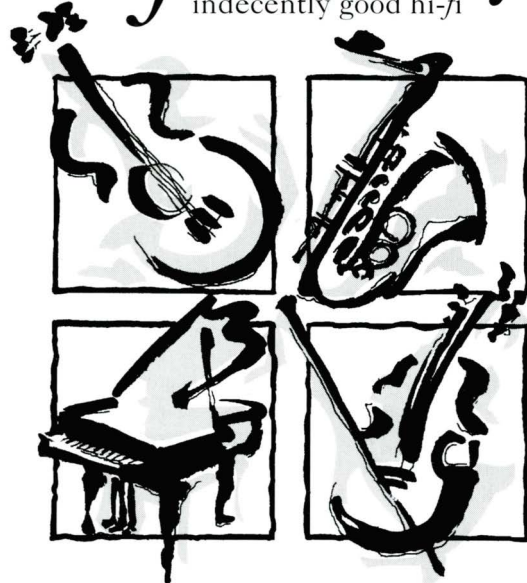
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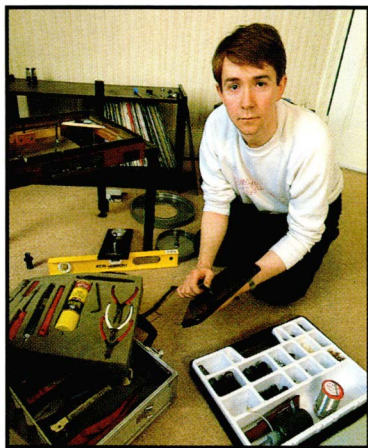
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message over, because a lowering of standards, a lessening of the importance of differentiating between products, spells the end of the specialist dealer. We need to raise standards, not lower them.

“Even the French, with no tradition of specialist retailing, are beginning to develop such a culture. Surely we should be looking to develop our specialist retailing base, not erode it.”

Real hi-fi shops

It’s a rallying cry, taken up perhaps surprisingly by one of the UK’s leading exponents of giving the customer the best possible deal at the lowest possible price — Richer Sounds. Director James Johnson-Flint places the emphasis firmly on good value and quality service.

“Yes, we do pride ourselves on offering competitive prices, but we are just as keen to turn our customers on to real hi-fi — by which I mean separates, which people can upgrade and change as and when funds permit. The more people selling quality separates the better as far as we are concerned. It all serves to raise peoples’ awareness of quality products, and that has to be a good thing for all concerned.

“Even Currys, traditionally seen as a mini and midi system vendor, has started to concentrate more on separate components — and that means word-of-mouth recommendations for hi-fi generally, not just Currys.”

Surely the specialists still have the edge when it comes to customer service? After all, this is the area where stores with prices pared to the bone simply cannot compete with the independent — or is it? Not according to Mr Johnson-Flint.

“Many of our stores, and especially the newer ones, have single-speaker

demonstration rooms featuring specialist hi-fi brands such as Creek and Pink Triangle. Some, like the Bristol branch, have home cinema demonstration areas with a dedicated theme — in this case, Jurassic Park — plus aircraft seats designed to make people feel good while they audition their equipment. We even install complete systems for customers, free of charge. In fact, all the things that a specialist does, we can do too.”

Pole position

A slightly different perspective on the current retailing scene is offered by Capes Patel of Kamla, on London’s Tottenham Court Road. The very nature of his shop’s position, on one of the busiest trading streets in the country, cushions Capes as an independent from some of the problems faced by other specialists. However, he too sees service as the crucial factor.

“High Street locations are all well and good, but you have to be able to offer the level of service that people have come to expect, plus competitive prices, in order to make such sites really work. This is where the specialists still have the edge, for the moment at least.”

Capes can see the UK following the American pattern of retailing, with big, out-of-town stores taking the lion’s share of the business, leaving the specialists to woo customers with select product ranges not available elsewhere, and custom installation services.

“The independent still has the edge in terms of customer care because he or she can spend more time with his or her customers. But the differential is being eroded all the time — just look at the new Richer Sounds stores. They’re big, in good locations, offer plenty of choice at competitive prices and their staff are well-trained. They look after their customers. As a specialist, I’d be looking to develop the installation side of my business in the coming years. The latest home cinema gear in particular needs to be set-up properly if you are to get the best from it. It’s a golden opportunity.”

Steve Daniels agrees: “The top specialists in the US have already made the switch to custom installations. I don’t just mean delivering and unpacking the boxes, either. These guys offer a dedicated service where multi-media or even multi-room systems are installed, such that they become a fixture of the house — carpentry, brickwork, plastering and

all. It’s the way to go for specialists in the UK too, I’m sure.”

Raised expectations

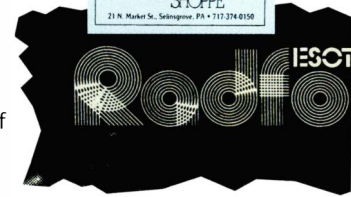
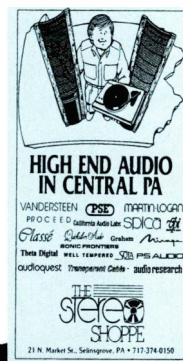
Customer care has never been so important. Expectations have been raised in all areas of retailing, and hi-fi is no exception. The quality of service that marked out the specialist in the past — single speaker demonstration rooms, well-trained staff, after-sales back-up and even installations — is no longer exceptional. Specialist dealers will not win over customers by offering such facilities, but they may lose them if they don’t.

In order to stay one step ahead of the competition, levels of customer care have to be stepped up all the time. For specialist dealers in the UK which are not able to compete with the High Street multiples in terms of price, customer care may well take the form of increasingly sophisticated custom installation services after the American model. Steve Daniels certainly thinks so.

“The specialist has one very real advantage over the big chain store: ‘localness’. If he or she can develop a network of word-of-mouth contacts in his or her locality for good quality work, others who are also prepared to pay for such service will come to them. In the States, this means quality of installation and discretion, not just good service in a store. It’s an area which the UK specialists would do well to address.”

No matter what the activities of mass-market multiples and out-of-town megaplexes, demand for specialist hi-fi retailers will not disappear overnight. The sheer complexity of the latest hi-fi and home cinema gear will see to that. But the type of service provided will almost certainly change.

Hi-fi retailing standards generally have been forced up by the efforts of the very specialists who must now look to specialise still further in order to survive. Such dealers will be fewer in number, yet more skilled than ever before. For those retailers prepared to be pro-active and embrace new technologies and the opportunities they bring, the future is assured. And the increasing focus on ‘customerisation’ means, quite literally, that the hi-fi buying public is in the strongest position ever to request — and get — the equipment they want, at the price they’re prepared to pay, with the level of service that they deem necessary. History will judge it so.





New products are great, but let's not forget the Modern Classics, products which have stood the test of time. Alan Sircom kicks off a new series.

Epos ES14

Now in its ninth year of production, the Epos ES14 has remained virtually unchanged since its launch in 1986. From the start this mid-sized, free-standing, two-way design seemed like something special. Unlike many a speaker from a small manufacturer, it is fitted with custom in-house drivers. The 145mm plastic bass driver uses a short voice coil operating in a long magnet gap, which is more expensive but creates higher flux density than the more common long coil in a short magnet gap.

The ES14 was also a pace-setter, incorporating many developments that would become commonplace nine years later. These include the 25mm aluminium dome tweeter and a simple crossover that utilises the mechanical roll-off of both drive units to minimise component count. Although such improvements seem prosaic today, this was ground-breaking stuff at the time, and many of today's loudspeakers owe a lot to the ES14.

Each speaker weighs a hefty 12kg and is best

used on the open frame stand designed for it, although I have heard a few good-sounding ES14s resting on heavyweight lead-filled stands. It comes supplied with a removable foam bung in the rear-firing port; in theory, this could be used to tune the speaker to optimise its positioning, but I feel that removing the bung destroys the sound of the speaker almost totally. It's far better to experiment with the positioning of the speaker in the room. As with any competent free-space speaker design, careful positioning pays great dividends.

The only real change to the speaker happened on its rear panel. The original speaker was bi-wired, but dealers at the time felt that this was a waste of banana plugs, so the speaker became single wired for many years. However, the latest models have returned to bi-wiring, as the trend for bi-wired speakers grew in the Nineties. Plus ça change...

Robin Marshall, its designer, is reputed to have developed the speaker around the Naim NAP250 power amplifier. It is the sort of speaker that relishes the sort of high-current amplification Naim (among others) excels at. Partner the same speaker with a low-powered

valve amplifier or a massive American design, and you could end up short on synergy.

Perhaps this is one of the reasons for the less than favourable reviews it received in 1986 from the now-defunct *Hi-Fi Answers* magazine. It suggested that the speaker's presentation was not sufficiently romantic and too uncompromising. On the other hand, dealers like Sound Advice in Loughborough and magazines like *Hi-Fi Review* — all well-known Linn/Naim devotees of the time — focused on the ES14's lively, involving, dynamic potential.

It took several years for the word to spread, but ultimately the quality of the ES14 was 'discovered', both at home and abroad.

Today, its sound quality is still a cut above the average in many fundamental areas. Due to its forward presentation, the ES14 is not the most neutral speaker around: the treble spits a bit and the bass lacks drive, but in terms of absolute enjoyment and performance, this is the two-way speaker to beat.

Hi-Fi Choice last tested the Epos ES14 back in September 1991. In that test, it came out firmly Recommended, praised for its fast and detailed mid-range and integrity, and representing good value for money.

Four years on, and the same results still hold true. The tweeter is a little noticeable in the face of opposition from recent designs, yet, as

The Song

you'd expect from a true classic, the *ES14* has a timeless quality that overcomes any minor misgivings. Even today, the grey haired *ES14*—in the right system—can sound more alive and expressive than almost any speaker from the same price band. It works just as well with LP as with CD, and it tackles the latest Massive Attack and Blur albums with the same ease as it handled The The and Scritti Politti.

The *ES14* is still as ruthless a revealer of source and amplification quality. Slot the speakers into a system sporting good Exposure, Linn, Musical Fidelity, Naim or similar amplification and a suitable source, and you will get sound quality to die for.

Linn Sondek LP12

Unlike the Epos *ES14*, which has had only the most minimal changes over its nine-year life, there have been many changes to the *LP12* since its introduction in 1973. So many changes, in fact, that a 1973 deck has none of the same parts as the contemporary model. It is perfectly possible to upgrade a 22-year old *Sondek LP12* to today's standard, although in practice the exercise would prove more costly than a brand new *LP12*. There have been some 24 modifications to the original design, ranging from grommets made of harder, denser

Linn had a sure and steady future.

Prior to Linn, the turntable was considered to be a relatively unimportant part of the audio replay chain. As long as the deck had low wow and flutter its performance was considered to be adequate. Far more attention was paid to the quality of amplifiers and (especially) loudspeakers. Linn Products turned this idea on its head by radically reworking the demonstration process, dragging it up by its bootstraps and showing the audio world that the source was fundamental to the sound quality of a hi-fi system.

In hindsight, this rethink was to the hi-fi industry what Einstein's general theory of relativity was to physics. This one change begat the idea of system hierarchy, stressing the importance of the source and creating systems that had 80 per cent of the budget spent on the source. Things have calmed down since, and you no longer see magazines advising people to put a system together with an *LP12* and a Roberts radio. But Linn taught the audioworld a lesson it has not forgotten.

Nearly 100,000 *LP12* turntables have been sold throughout the world, the majority of which are still in use today. In the early days, the *Sondek LP12* was successfully partnered with Grace arms and Supex cartridges, until

(£3,924), incorporating the *Trampolin* suspended baseboard, *Cirkus* bearing and sub-chassis, *Lingo* power supply, *Ekos* tonearm and *Arkiv* cartridge. But it has an exceptional ease and freedom about its sound quality. The *Trampolin* is a suspended baseboard that effectively isolates the deck from its support. Using a Mana table with the standard base is an alternative approach that has found favour with many *LP12* users.

It has been some time since my equipment table last saw an *LP12*. I used one for many years, but felt that I had 'grown out' of the design and moved over to one of the many alternatives. It therefore comes as all the more surprising to listen to an *LP12* after all these years, and see just how far the deck has progressed. It is still the pinnacle of musicality and timing, yet the deck's performance has now grown closer to that of CD in a positive sense, removing much of that 100Hz bloom but little of the charm commonly associated with the *Sondek*.

The *Lingo* and *Cirkus* upgrades have made the deck that bit drier and cleaner, especially in the lower registers. This makes the bass notes start and stop in a seriously rapid and musical way. Midrange and treble are equally musical and weigh this vitally important prop-

Remains The Same

rubber to an entire plinth.

The most recent change to the *LP12* has been purely cosmetic, but should be well received, nonetheless. Traditionally, the deck was available in three finishes; afro-mosia, walnut and black ash, with three grooves around the plinth on the natural finish models. Now, the *LP12* can be supplied in any of the four standard finishes to match Linn loudspeakers, including the American cherry plinth shown in the picture. This doesn't change its slightly retro look, but turntables are intrinsically retro anyway and it's still an attractive and timeless design.

The earliest *LP12*s were sold in kit form, but it soon occurred to Ivor Tiefenbrun, Linn's MD, that if the *LP12* was set up and periodically reset by factory-trained dealers, the quality of sound could be ensured. That way, if there were any periodic upgrades to the deck, they could simply be incorporated into existing decks far quicker than simply advertising through the hi-fi press.

The basic deck of 1973 was only subtly different from many of the existing turntables of the time, such as the AR, Ariston *RD80* and Thorens *TD160*. But some canny Glaswegian engineering and even cannier (should that be Kannier?) marketing and revolutionary demonstration concepts made sure that the

Linn 'discovered' its own range of arms and cartridges. First came the *Ittok* arm and *Asak* cartridge, followed by a steady stream of arms, moving coil and moving magnet cartridges. Today, the *LP12* owner has the choice of the budget *Akito* or the exotic *Ekos* tonearm, partnered with the *K5*, *K9* or *K18* moving magnet, or *Klyde* or *Arkiv* moving coil cartridges. Outside of the Linn marque, the Naim *Aro* arm is often used with great success in the *LP12*, and a wide variety of cartridges have been seen in some of the best-dressed *Sondeks* around.

Then there is the power supply issue. The original *LP12* had little more than a resistor-capacitor network for its power supply for the first ten years or so. Linn then incorporated a built-in crystal-controlled electronic supply called the *Valhalla* in 1982, and in 1990 the *Lingo* power supply was introduced. This is a highly filtered, dual-phase, direct coupled power supply — more of a digital computer than a power supply — that also allowed the user to electronically change speed for the first time. Several manufacturers designed power supplies for the *LP12* in the '80s and early '90s, including the Avondale, Naim with the *Armageddon* and Pink Triangle's *Pink Linnk*. But most of these have been met with a frosty reception from North of the Border.

The latest top-flight *LP12* is not cheap

erty against high levels of imaging and transparency. If you find these hi-fi aspects of great importance, then the Linn is not the most rewarding deck around, but if you value timing over timbre, there is no better deck.

Every improvement added to the *LP12* over the years has made it a little more transparent, a little more detailed and a little more dynamic. Perhaps this is why the Linn *Sondek LP12* has remained at the zenith of turntable design for so many years; far from sitting on its laurels, the company has pushed the performance ever forward. The latest specification fully-fledged turntable is still at the top of the recommended component tree of *Stereophile* despite being thousands of dollars cheaper than its competitors. This accurately sums up the Linn *LP12*; it will always be one of the great benchmarks in hi-fi. There may be better decks for you and there are many high-end turntables in production, but there is only one *LP12*.

Revisiting both the Epos *ES14* and Linn *LP12*, it's clear that these are no mere 'hangers on'. They are every bit as good as the latest products, and remain the models to beat. The Epos *ES14* is still the benchmark £600 loudspeaker and the Linn *Sondek LP12* sets a standard by which all turntables could be judged.

Epos Acoustics ☎ (01705) 407722

Linn Products ☎ (0141) 644 5111

Exclusive

Special Offers!

for **Hi-Fi Choice** readers

This month we have a selection of interconnect cables to help you make the most of the rest of the separates that make up your hi-fi system.

→ Interconnect cables

Those important cables that could make all the difference to the results your system can give you. There is more than one type of cable available and different cables are needed for different tasks within a hi-fi system.

The first use for interconnects is to enable you to link line-level signals between units, for example to wire the analogue output of your CD player to your amplifier, or to use between preamp and amplifier. We offer three choices of cable intended for this purpose, AudioQuest *Turquoise*, *Ruby* and *Quartz*, so there should be one to suit your budget perfectly.

→ AudioQuest Turquoise

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

Order ref: ZIUP1 – 1 metre £34.95
Order ref: ZIUP2 – 2 metre £40.95



→ AudioQuest Ruby

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

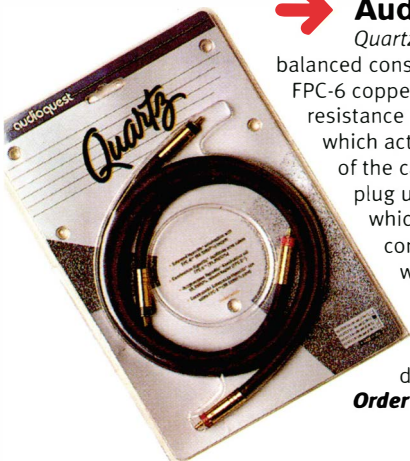
Order ref: ZIRP1 – 1 metre £69.95



→ AudioQuest Quartz

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

Order ref: ZIQP1 – 1 metre £99.95



→ Digital Cable

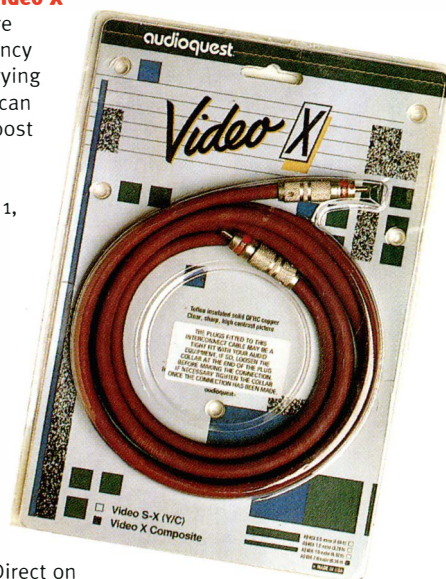
AudioQuest Video X

Video cables, which are designed for high frequency signals, are ideal for carrying digital signals, and they can also be used to give a boost to your AV system.

Video X is available in 1, 2 and 5m lengths.

Order ref: ZIXP1 (1 metre) £29.95
Order ref: ZIXP2 (2 metre) £36.95
Order ref: ZIXP5 (5 metre) £57.95

Hi-Fi Choice (issue 131) featured a handy pocket guide to interconnect cables. This back issue can be bought from Dennis Direct on (01789) 490215.



→ Speaker cables

AudioQuest F-14

An affordable cable that is ideal for audio visual applications where rear channel speaker cable has to be run under carpets or along skirting boards. Earning a Recommended tag in an earlier issue (August 93) AudioQuest *F-14*, a mere 2mm thick, could well be the answer to those tricky cabling dilemmas. Available in white.

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ZL14WR/4	4 metre	£40.60
ZL14WR/5	5 metre	£44.50

If you require longer lengths, please add an additional £3.90 per linear (mono) metre.

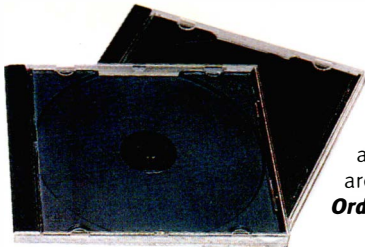
Hi-Fi Choice (issue 133) featured a handy pocket guide to speaker cables. This back issue can be bought from Dennis Direct on (01789) 490215.

If you have any technical queries regarding the cables, please call Arcam on (01223) 440964.

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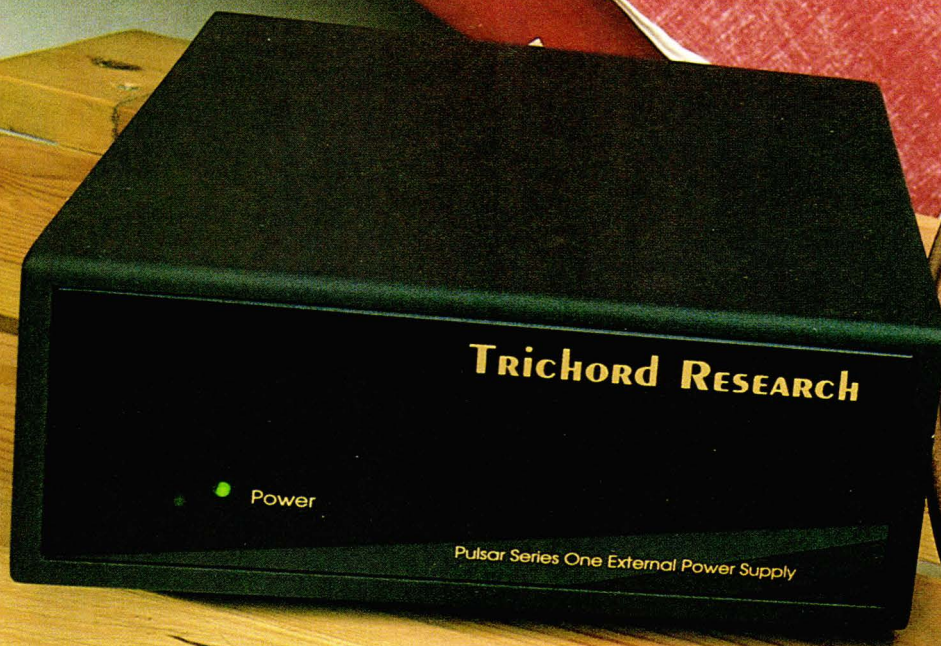
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GET CLOCKIN' WITH A *FULL-ON* TRICHORD CD PLAYER



The big noise on the underground hi-fi circuit for a good while now has been Trichord Research. Connected with some of the finest analogue electronics around — the custom Pioneer A-400 amplifier and Michell range being obvious examples — Trichord has also turned its hand more than successfully to the digital domain. Perhaps you know of someone who has hot-rodded their CD player with the Trichord *Clock 2* modification, or maybe you have ploughed through Jimmy Hughes and Jason Kennedy's rantings about the Trichord modifications and Pulsar DAC. One thing is certain about Trichord: once you've tried it there's no way you can go back to regular CD players.

In our August issue, we plan to provide you with some good reading about the people behind this innovative company. But in the meantime, it could be your turn to listen to the Trichord effect on your CDs simply for the price of a postage stamp.

It all started with Trichord's original *Clock* in 1993. This was effectively a high grade heart transplant for CD players, replacing the existing clock and improving the machine's jitter performance and accuracy. *Clock* was superseded by the current *Clock 2* a year later. This is an even more accurate device that did for many CD players what fuel injection did for sports cars. Since then, a digital interface board has been added to the roster for those who want to turn their players into state-of-the-art CD transports.

What's on offer is nothing less than leading-edge CD replay at its finest. Trichord takes an innocent and humble Pioneer PDS-503

CD player and transforms it into a complete £590 psycho-CD-transport-of-death flagship. The company takes the basic Stable Platter Pioneer unit and adds a *Clock 2*, a digital interface board along with a seriously beefed-up power supply and radically improved mechanical damping. To match the transport, Trichord's £1,395 *Pulsar* DAC uses a novel hybrid architecture that combines the best of bitstream with the finest multi-bit. This is allied to a NPC 5842 24-bit digital filter (as found in the most expensive converters on the market), configured to run at 18 or 20 bits. This is supplied with the optional £449 separate power supply upgrade and even Trichord's pukka 750hm £64 digital and £150 analogue interconnects, making this among the finest digital replay systems available at any cost. The whole caboodle would cost over £2,500, but you can win one of these superb homegrown products simply by answering the five questions on the opposite page.

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Lines open at midnight on Friday May 12th, and remain open until midnight on Friday June 16th, 1995.



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THE QUESTIONS

1. Who makes the exotic filter system in the Pulsar DAC?

- a) Yamaha
- b) NPC
- c) Colin
- d) NBG

2. Which CD transport mechanism is used in the PD-S503 transport?

- a) Stable Platter
- b) Platter Matter
- c) Matter Transport
- d) Transport of delight

3. What is the name of Trichord's latest low jitter upgrade for a CD player?

- a) Clock
- b) Timer One
- c) Clock 2
- d) Jitter Quitter

4. When did Trichord Research first launch into the digital domain?

- a) 1983
- b) 1988
- c) 1993
- d) 1995

5. Which company's amplifiers are Trichord connected with?

- a) NAD
- b) Michell Engineering
- c) Marantz
- d) Naim Audio

Competition Rules

The Editor's decision is final and no correspondence will be entered into. All winners will be notified by post. The competition is not open to employees of Dennis Publishing Ltd, Trichord Research Ltd, their suppliers, agents or associates. We regret that the competition is open to UK residents only. No cash alternative will be offered. The act of entering the competition will be taken as acceptance of the rules. You must notify us if you do not wish to be informed of any special offers or promotions. For a list of winners, write enclosing an SAE to Hi-Fi Choice, Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ.

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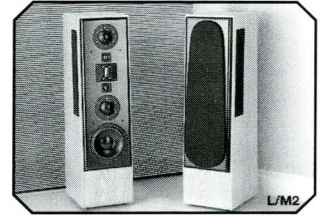
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Six top-class CD transport/DAC combinations come under the hawk-like gaze of Paul Miller and his blind listening panel. How will the best of British from Linn, Pink Triangle and Trichord fare against the might of the US and Japan, represented by CAL, Counterpoint and Teac?

THE PLATTERS THAT MATTER

The high-end turntable just refuses to lie down and play dead. We look at four new up-market decks to see where the state of vinyl art is at. Included are the first full reviews of turntables from acrylic experts DNM and Clearaudio, new boys Rivelin and past master Voyd.

SYSTEM ADDICT

Malcolm Steward meets his match in the guise of a Well-Tempered turntable and arm, Dynavector cartridge and amplifiers and a pair of Shahinian speakers presented by doyen of the flat earth, Pear Audio. How does this multi-thousand-pound system compare to his beloved Naim kit?



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- Sennheiser special — we profile the masters of the headphone.
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- Plus loads, loads more.

The July 1995 issue will appear in midsummer with a hey nonny no on Friday June 9.

ON TEST

speakers



The cast list

AUDIO PHYSIC TEMPO	£2000
AUDIOVECTOR 3X	£1500
EPOS ES25	£1655
JBL L90	£1300
MIRAGE M-890I	£1075
MONITOR AUDIO STUDIO 12	£1000
MOREL 704 II	£1000
MUSICAL TECHNOLOGY EAGLE	£1400
NAIM SBL	£1821
RATA TWO-WAY	£1795
ROGERS LS3/5A + AB1	£1200
TANNOY D500	£1560

The listening days

A dozen speakers are too many to audition in a single day, especially since many of the models are large, heavy floorstanders which need careful installation. Two separate days were therefore scheduled, and particular thanks are due to Jason Kennedy and Russell Kauffman for undertaking the arduous task of changing the speakers between presentations.

The sessions went very well, inasmuch as differences were clearly audible, and even some general agreement seemed to be found much of the time, though personal preferences also played their part. There was some disappointment, however, at the overall standard achieved by what ought to represent something close to the cream of the crop. The good ones shone through, with no question; the shame was that there weren't more good ones, and that the others weren't more convincing all round.

Equipment used was our 'standard' collection of Naim and Linn components supported by Mana tables. Thanks are due to panelists Jason Kennedy, Ken Weller, Russell Kauffman (Morel), Robin Marshall (Spendor), David Inman (van den Hul UK), Richard Dunn (NVA), Derek Hughes (Spendor) and Guy Sergeant (Audio Innovations).

although the environmentally aware might look out for the latest acrylic high gloss as an alternative (see Musical Technology).

The vast majority — ten of our twelve — are floorstanders, which I suspect is as much to do with fashion as performance. Aesthetics play a crucial role when choosing something as costly (and usually obtrusive) as a pair of serious speakers. But the eye of the beholder, and the decor and layout of different rooms means this is not something on which the reviewer easily can pass judgement. If you like the look of something, then do go and check it out. You're the one who'll have to live with it, whether or not it carries a Recommended flag.

It's our job to pick out the likeliest options, and we try to do this as rigorously and consistently as possible. But relatively few speakers these days are truly poor, and there's no way we can guarantee our findings will correlate with your taste, your room or your system. To rely exclusively on the blob-chart-and-flag approach is to accept oversimplification in place of making an intelligent and informed choice.

For continuity's sake, the reviews follow the same outline pattern established over the past several years, with the same room-based measurement regime used to establish the comparative data. The sighted listening tests provided the opportunity to experiment with bi- and tri-wiring alternatives (difficult to accommodate practically in the blind tests), as well as alternative amplification. For the latter, our thanks are due to The Chord Company for the loan of cables and to Audiolab for the fine 8000PPA/Q/zxM amp combo.

Following on from two test groups in the sub-£500 price region (issues 139 and 141), the chance to get to grips with a bunch of £1,000-£2,000 boxes was mouthwatering, in prospect at least. Even the fine print that we would be doing twelve rather than the usual eight models didn't set any alarm bells ringing.

The truth started dawning a week before the listening tests were scheduled. Only four pairs had actually turned up, so panic set in. On the final, final, last possible day the hall was totally blocked by gigantic cardboard containers, with interesting lifestyle repercussions. A quick box count revealed I'd

Making sense of our laboratory tests

Every speaker has a distinct frequency balance (or response), which provides a good indication about the way it will sound. This sonic 'fingerprint' shows which parts of the audio range are emphasised and which are short of relative output level.

In order to simulate relevant 'real world' conditions, the measurements are made of a stereo pair in the actual (fairly large) room in which the listening tests are undertaken, using a far field technique averaged across seven microphone positions (as devised by Martin Colloms). The speakers are sited a metre out from the rear wall; intermediate positions normally produce intermediate degrees of mid-bass reinforcement.

Because the main room modes tend to create unavoidable ups and downs at the low frequency end, it would be unreasonable to expect a perfectly flat and straight line. However, the trace should ideally be as flat and smooth as possible. Gentle variations are preferable to sharp discontinuities; prominences tend to be more irritating than dips; and a gentle high frequency roll-off usually sounds perfectly acceptable.

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

The snag is the impedance. For the same volume control setting, a 4Ohm loudspeaker will actually be drawing twice the current (and hence power) as an 80Ohm design, so to get its sensitivity in true electrical energy conversion efficiency terms, you need to subtract 3dB.

ended up with fifteen pairs, but two complete days of listening tests had been scheduled, so decisions on the final list could be deferred.

Trying to get one's ears and head around so many different high-quality devices in all too brief a period turned out to be gruelling, fascinating and educational. I always prefer longer listening periods, but this time the need was particularly strong, as the diversity of equipment was much wider than normal.

One might question this review's relevance to the real world of budget mass market hi-fi, but for the enthusiast this must be one of the most interesting speaker group tests ever. The £1,000-£2,000 price break is a wide one, but not all that much larger than our normal budget and middle market groups in proportional terms. Tight price grouping might suit today's 'pick a winner' lottery mentality, but the broader spread presented in this issue is better able to address more useful questions. Is a £2,000 speaker better than a £1,000 one, and if so, by how much?

A minimum selling price of £1,000 means that the designer starts off without the usual strict constraints of price and stereotyping, and has considerable freedom to explore his or her creativity. Of course, this is a two-edged sword, as more does not always mean better in loudspeakerland.

Large(ish) cabinets are virtually essential to achieve deep, low bass, especially with a reasonable degree of efficiency. But the large enclosure is also — by definition — a large source of potential colorations. Controlling these adequately invariably involves elaborate and costly engineering. Even the attempt to extend the bass down into the bottom octave and a half takes the designer into dodgy ground, because room interactions play an increasingly unpredictable role.

So widespread and successful has the cult of the two-way (main-driver-plus-tweeter) become, that roughly half our dozen still follow this classic configuration even at the upmarket level. The others opt for the 'two-and-a-half-way' layout where an extra main driver is used to supplement the bass only, or for the full three-way with separate bass and mid-range drivers — or even something half-way in between, with wide driver overlaps. Each approach has advantages and disadvantages, but the bottom line is that the application itself is always more important than the rationale behind it.

The upmarket speaker does have certain obligations, such as a high-quality, luxury finish, usually in real-wood veneer. This is sometimes from sustainable resources,

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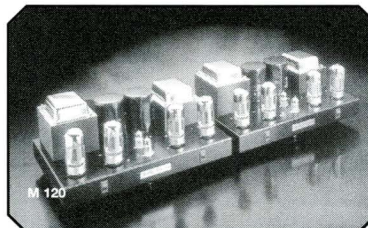


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AUDIO PHYSIC TEMPO

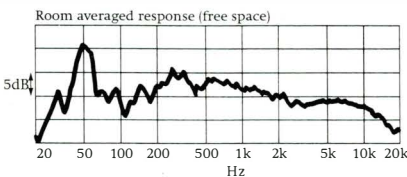
Despite the obvious jokes made at the cabinetmaker's or draughtsman's expense, about the difficulty of making six bits of wood fit together properly, the curious construction and shape of the £2,000 *Tempo* sports a certain elegance and distinctiveness which tends to grow on you.

It's the smallest floorstander from a relatively young German brand called Audio Physic, which also makes the cute *Step* miniature discussed in *Personal Messages*, in issue 134. The latter came with unusual siting recommendations, essentially involving placing the speakers as far as possible from the room walls — rather easier to accomplish with a miniature than this substantial floorstander.

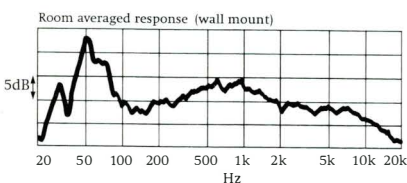
LAB REPORT

The combination of a generous port tuned to 40Hz and a main driver/box fundamental resonance at 55Hz might be helpful in controlling cone excursion, but is presumably also responsible for a suspect bass alignment under our real-room conditions. The 50Hz room mode registered +6dB ref the mid-band datum, while the extension down to 20Hz registers an unexceptional -14dB.

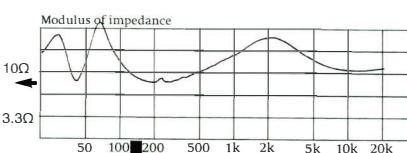
The upper bass and lower mid-band are left a little short of output, but from 250Hz upward everything looks impressively smooth and even. A gentle downtilt is probably close to ideal and minimal crossover perturbation, rolling off somewhat beyond 10kHz. The sensitivity is a rather modest 86dB, although this is perfectly acceptable in the light of a genuine 80Ω impedance, which will be very easy for amplifiers to drive.



Great above 250Hz (middle C), but decidedly uneven below that point measured under far-field in-room conditions.



Close-to-wall siting merely serves to exaggerate the unevenness which is experienced in free space.



Load is very easy to drive, staying at 80Ωms or higher throughout, with port tuned to 40Hz.

Audio Physic comes to the UK via Suffolk-based Aanvil Audio, a brand-new company with strong links to Essex University. And one of the links in this particular case is a special Essex Audio digital equaliser, dedicated to the *Tempo* and claimed to linearise amplitude and phase responses. It costs an extra £650, plus a further £250 for the in-room calibration, but such additional complexity is unfortunately beyond the scope of this review.

The *Tempo* alone is a tall and imposing floorstander, especially since its maker recommends it should be placed as far away from room boundaries as possible. The main styling curiosity is that the front panel (known as a baffle) overhangs the rest of the box by a couple of centimetres. More curious still is that the 25mm thick baffle is made of MDF — precisely shaped and very well finished, but still a particle board — whereas the much less visible sides get the full real wood veneer treatment (cherry making a cheerful alternative to the black ash pictured). Note that a baffle is much more than a face with cut-outs to accommodate the drivers: in fact it performs a vital acoustic loading role which has considerable influence on the forward sound distribution.

Another striking feature is the ten degree backward slant, which serves to time-align the two drivers as well as improve the aesthetics. The two drivers were sufficiently well fixed to prevent full internal inspection, but top-quality build is obvious right down to the classy and properly fixed tempered steel spikes.

Both drivers are high tech devices, the tweeter's 25mm metal dome having a dimpled diamond patterning. The main driver has a cast frame and 125mm doped Kevlar fabric cone with protuberant pole piece. Through the large port it's possible to see the fine gauge internal wiring, which is carefully dressed and separated, plus the so-called 'diffuser' board — an internal brace drilled with 73 different-sized holes, to help break up internal standing waves. Bi-wiring is possible though not encouraged.

Sound Quality

Especially since the *Tempo* is the most expensive model in our group, the listening tests gave rather disappointing results. This seemed due largely to its reproduction of the bass end of things, but there was also a general dissatisfaction with its rather soft and gentle perspective onto the music. The timing was sufficiently suspect to question the appropriateness of this box's name.

Politeness is very much the watchword here, which didn't particularly appeal to a panel hoping for something more up front and involving. It's also true to say that our panel



listening conditions and room layout didn't really make the most of the *Tempo*'s main strengths. Hands-on trials with the speakers further out into the room and a solitary listener up close proved a better demonstration of the speaker's superb imaging capabilities, with the delicate coherent openness, airiness and freedom from boxiness clearly being the prime design objectives.

Conclusion

There's grace and elegance in both the physical and sonic presentation of the *Tempo*, but the design seems a little unbalanced, offering fine mid and treble performance on top of a

mediocre bass end. This is less well founded under real room conditions, which are quite typical of UK rooms. The resultant experience can be satisfying in its way, but ultimately appeals more to the intellect than the emotions.

VERDICT

- ▲ Capable of fine transparency, delicacy and image precision.
- ▼ Poor real-room bass alignment and lazy dynamics lead to an easy-going but quite uninvolved experience.

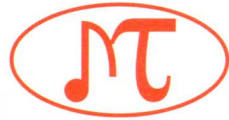
SOUND ★★★★★

VALUE ★★★★★

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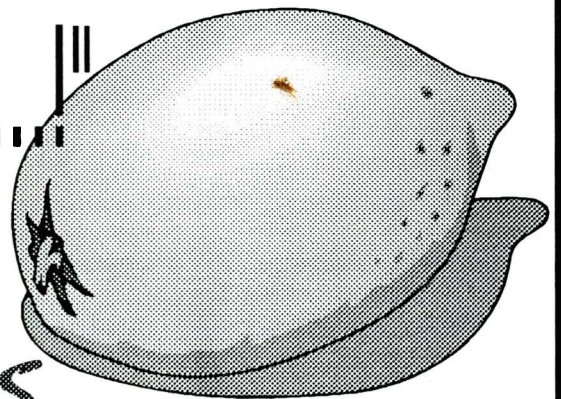
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AUDIOVECTOR 3X

A relative newcomer to the UK, Audiovector represents the more specialist, enthusiast and upmarket face of Denmark's very successful loudspeaker industry. The company has actually been around since the early '70s, and now offers a range of five floorstanding models, with this £1,500 3X representing the middle rung of the ladder.

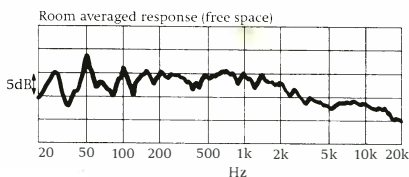
UK distribution is via Salisbury-based cable and connector specialist The Chord Company, not because this range of Danish floorstanders dovetailed so neatly into the corporate marketing strategy, but simply because the Chord people thought the Audiovectors sounded exceptional.

I felt an immediate affinity as soon as I

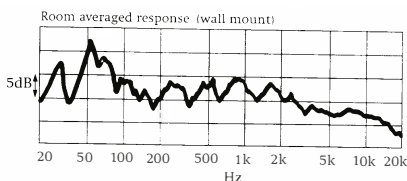
LAB REPORT

Although close-to-wall siting tends to over-emphasise the mid-bass and introduce mid-band unevenness, bringing the 3X out a couple of feet allows it to deliver a most impressively flat bass-to-mid-band balance. The normal 30 and 50Hz room-modes seem much better controlled than usual, although there is a certain amount of local unevenness further up the band. Output falls gently and quite smoothly above 1.5kHz, the broad treble registering -7dB with reference to the broad mid-band, which is a bit on the dim side. The crossover (at 3kHz electrically) is notably seamless and well integrated.

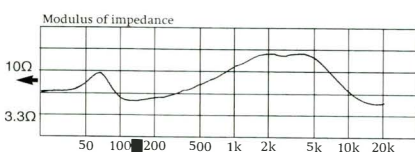
Sensitivity is a healthy enough 88dB/2.83V, which is rather more impressive in view of fine bass extension (-7dB at 20Hz in-room), while the load hovers around 60ohms for much of the range, which is unlikely to cause amplifiers any embarrassment.



Bass-to-mid balance is exceptionally flat with fine ultimate extension, but above 1.5kHz presence and treble are restrained.



Wall proximity only serves to over-exaggerate the mid-bass and introduce mid-band reflection unevenness.



Load dips a little below 60ohms here and there, but is unlikely to cause problems.

opened the Audiovector brochure. It explains how the company places considerable importance on room integrated measurement techniques — and has done since 1972. I've only been playing around with these since 1989, but have found them to be a very powerful and effective tool, which has formed the basis of our measurement regime ever since.

The 3X stands just over a metre tall and presents quite a sober, severe and monolithic appearance, especially in the black finish. Handsome rather than discreet, with real wood on five faces, its build feels exceptionally solid and substantial. Two obvious features stand out. The first is the very chunky plinth, which provides secure and solid accommodation for four meaty spikes, as well as a footprint of sufficient size for stability.

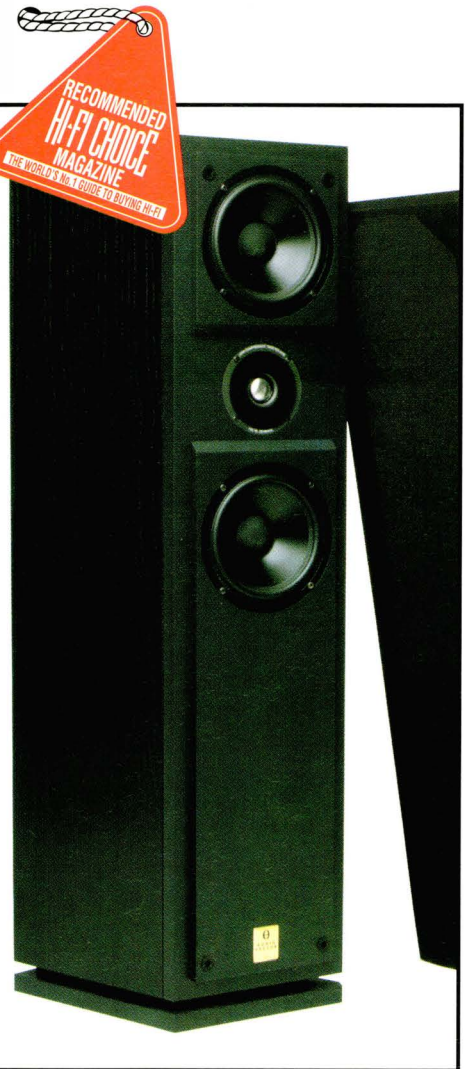
The second and much more striking feature is an unusually angled baffle. Eschewing the normal backward tilt and staying resolutely vertical, the speakers are built as mirror-image cabinet pairs, with the inside face six centimetres narrower than the outer. Besides helping defocus internal reflections and standing waves, this angles the driver axes of the stereo pair so that they intersect close to or in front of listeners. This helps increase the area in which good stereo imaging can be appreciated, while allowing the enclosures to be lined up square with room boundaries.

Two high class cast-frame drivers with 120mm plastic cones are mounted above and below a 25mm metal dome tweeter, which is rather hemmed in — especially with the grille in place. The drivers are nominally identical, but the upper (bass/mid) unit is loaded by a sealed box, while the lower (bass only) has a rear/resistive-ported chamber. Tight but small and rather feeble wood screws secure the drivers into a triple-layer baffle, which is up to 50mm thick in places, built from NRBF — a high density MDF-like board. At least three internal shelf braces keep everything rigid, while internal damping is confined to two large blocks of foam, one behind each driver. Bi-wire terminals feed a complex crossover, tag connected to the drivers.

Sound Quality

Having spent a couple of days prior to the listening tests really enjoying the 3X's delicately understated charms, I was surprised by the mixed reactions of the listening panel. It did reasonably well overall, but not consistently so across the whole panel, perhaps due to that understatement and a lack of up-front and instant 'grab you' appeal.

The upper range presence and treble certainly sounds a little shut-in and dull, as much



because of the position of the tweeter as the measured balance, I suspect. But the 3X still has fine timing and decent bottom-end drive, giving a rare glimpse of genuine authority and solidity, if not quite the ultimate agility. Above all, there's little of the mid-band timesmear all too common elsewhere. The resultant freedom from congestion assisted by a good dynamic range delivers impressive clarity and detail right down into the mix, even though the dynamics themselves are a bit laid back.

Conclusion

Although the panel findings suggest that their sound will not win everyone over, the 3X clearly

stands out from the pack with superior time-coherence, fine dynamic range and an exceptional bass-to-mid balance in-room. In my opinion, it's just about the best all round compromise among our floorstanders.

VERDICT

- ▲ **Superb in-room bass-to-mid balance, alongside fine timing and good dynamic range.**
- ▼ **Top end sounds a bit shut in and restrained; visuals are monolithically severe.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,500

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EPOS ES25

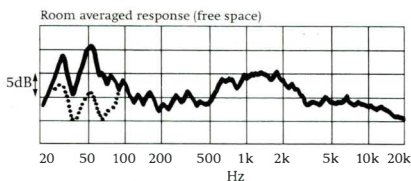
The Epos brand, now owned and operated (with a fair degree of autonomy) by Mordaunt-Short, has built up a strong reputation in a relatively short time as one of the most interesting names for genuine hi-fi and music enthusiasts. There have only been two models to date, the original large, stand-mounted *ES14* and more recent compact *ES11*, both continuing to sell strongly several years after their original introduction.

While it can rightly be pointed out that the *14*'s large stand-mount configuration still makes a great deal of sense as a performance package, marketplace fashion trends have been moving inexorably towards floorstanding models for the past several years, and rumours of floorstanding Epos'es have been rife for some time.

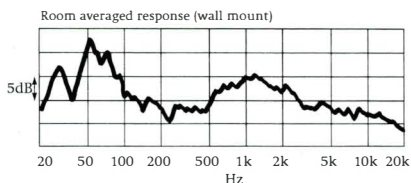
LAB REPORT

In marked contrast to the impressively flat balance of the *ES14*, the *ES25* is a more up-and-down affair. I am glad the broad midband plateau is intentional, though I must question whether sacrificing tonal neutrality to this degree is justifiable.

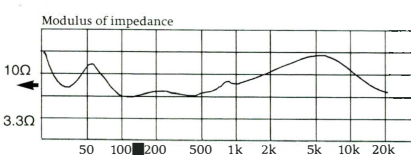
The bottom-end provides plenty of welly, but the main fundamental range (100-600Hz) is suppressed by as much as 5-6dB prior to a broad upper-mid plateau (600Hz-2.5kHz). With such unevenness, the 87dB sensitivity rating is only approximate. Bass extension is a decent -8dB at 20Hz in-room and the load is complex but reasonably benign. Blocking the port removes the midbass excess, but leaves the midband rather more exposed.



Balance is bass rich even when clear of walls. Dotted trace shows the effect of blocking the port.



Don't even think about it...



Quite benign from the amplifier's point of view, holding around 6 Ohms minimum through the upper bass/lower mid.

Coming in at an altogether higher £1,500 and 29kg (compared to £595 and 12kg for the *14*), the new *ES25* is in no way intended to replace the *14*. Rather it can be seen as a logical progression upmarket, to create a model which builds on the established traditions while enhancing the overall performance envelope, as well as bringing the styling up to date.

An accompanying twenty-page white paper sets out in remarkable detail (and a rather twee typeface) all the engineering involved in conception and construction. Which is maybe just as well, as gaining access to the innards is not without difficulties. The styling follows Epos's established minimalism — no grille, and all the naughty bits hidden behind a plastic blanket, ensuring a clean and uncluttered path to the radiused baffle edges, and largely foiling the dismantling reviewer. (I did manage to get the port out, to confirm the claimed 33mm thick baffle and back, 25mm sides, additional internal bracing and damping foam.)

Summarising said twenty pages in a one-page review can do faint justice. Suffice to say, the document makes fascinating reading for those interested in the speaker design process, as well as establishing just how much painstaking care has gone into the development of this new model. The bare outline only is that this is a full three-way design (itself unusual), with a 25mm metal dome tweeter, 110mm plastic cone midband driver and 140mm plastic cone bass unit, supplemented by a large rear port. Simple, mechanically-decoupled networks cross over at 250Hz and 6.5kHz, with gentle slopes and wide overlap. Tri-wiring is encouraged (but not essential) by separated terminal pairs.

Its build is exceptionally solid, and real wood veneer finishes the outside to the highest standards. Hefty spikes seemed to fit securely enough when installed, but their later removal for shipping simply unscrewed the sockets fitted into the wood base, so some improvement in the fixing arrangements would be welcome. Following discussion with Epos regarding the rather bass-heavy balance found in our room measurements, a pair of open-cell foam bungs were supplied as a port-filling option.

Sound Quality

Presented to the somewhat different panels on both listening days, the *ES25* elicited mostly positive but sometimes mixed reactions. Panelists present on both days actually proved quite consistent, but reactions between individuals seemed to differ quite markedly, depending apparently upon the degree of irritation caused by the balance anomalies.



This is not exactly a neutral speaker, and does hype the balance somewhat in search of subjective satisfaction. Whether the end justifies the means must be a matter of personal taste, but in my opinion it just about gets away with it, as the underlying qualities here are nearly all positive. Timing, coherence and overall dynamic range are all good or very good, while focus and detail projection are both entertaining, even though dynamics themselves are a bit limp.

Fitting the supplied bungs in the ports certainly dried out the bass dramatically (see curves), but in so doing left the forward midband sounding even more obviously over-exposed, so is not an ideal option. Tri-wiring brought about a slight but worthwhile overall improvement in space and openness.

Conclusion

Plenty of beautiful speaker for the money, plus a sound quality that's fundamentally inviting and

entertaining, make this new Epos an inviting prospect and definitely one to try. But the lack of strict neutrality alongside modest sensitivity remain obstacles to formal Recommendation in this upmarket price context.

VERDICT

▲ A big beefy sound with loads of detail and plenty of loudness potential.

▼ Balance is not particularly neutral and sensitivity is modest.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,505

✉ Mordaunt-Short Ltd, 3 Ridgeway, Havant, Hants PO9 1JS.

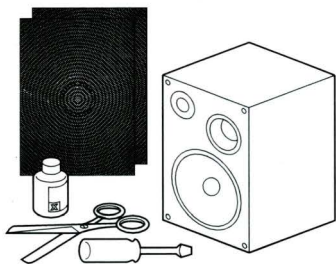
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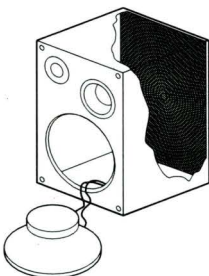
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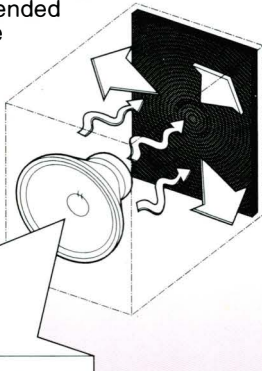
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Audiophile - January 1994

"...the result was sharper imaging, wider dynamics and a more natural sound..."

CHOICE VERDICT

Sound Quality
Value for money
Hi-Fi Choice - January 1994

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SPEAKER CABLES



Silver Sounds 12/2

Reference Imports,
Pineridge, Theobalds
Green, Sandy Cross,
Heathfield, East
Sussex TN21 8BS.
Tel: (01435) 868 004

'amp-end'. Meanwhile even the tight outer jacket is extruded from top quality white Teflon.

Classy conductors and a classy dielectric add up to what our listeners determined was 'a very classy cable'. Tonally accurate and exquisitely detailed, 12/2 opens a very transparent 'window' on the sound. Transients are crystal-clear, free of graininess and smearing just as vocals are rid of sibilance. We simply failed to ascribe 12/2 any intrusive 'character', a superb result and worth every penny of its £30 per metre

Test Results

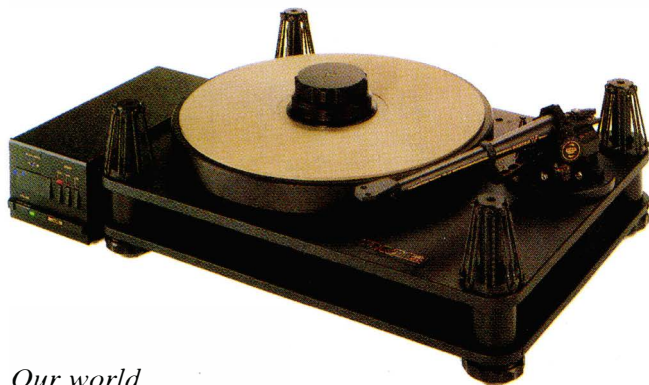
Inductance	2.85pH
Capacitance	915.4pF
Resistance	65.5mohm
Leakage	115Mohm
Q-Factor (@ 1KHz)	>100
Resonant Frequency	3.12MHz
Series Bandpass	3.66KHz
Power Loss	0.071dB
Damping Factor	122.1

After storming through our inter-connect sessions, Silver Sounds was no less triumphant in the speaker stakes. Top-billing was given to 12/2 so-called because its pair of conductors amount to 12 gauge. Inside each Teflon-coated OF-copper strands though, judging by its high 915pF capacitance, each of these filaments must be coated with a light insulating layer.

So, in common with Audio Note's top models, it's reasonable to assume that 12/2 is a genuine Litz cable. Furthermore, 12/2 is also one of the very few speaker leads to be equipped with a braided screen, grounded, on this occasion, at the

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JBL L90

Live '94 was not an ideal place to enjoy quality music reproduction, but Harman's trade suite was tucked well away from the madding whist, and this arcane throwback of a £1,300 JBL *L90* was making some very good musical sounds indeed, filling a large room with little apparent effort.

The phrase 'arcane throwback' is in no way pejorative, and only applies to the speaker's configuration, as all the ingredients are entirely up to date. In tune with our increasingly retro industry, *L90* takes its cues from JBL's classic *Century L100* — that quintessential Diva of the Sixties West Coast sound, the most popular speaker JBL ever made, and, I have to admit, a little before my time.

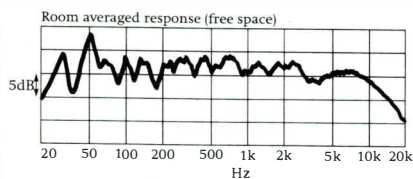
The most striking difference between this



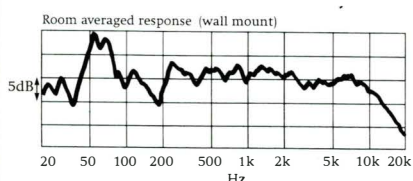
LAB REPORT

Although the amplifier load is quite demanding, especially at high frequencies where the tweeter is struggling a bit to keep up, the fact that this is a genuinely high sensitivity speaker (91dB/W) is more than fair compensation. Once you add genuine deep bass extension (-8dB at 20Hz in-room), alongside a thoroughly impressive overall bass-mid-treble overall in-room balance, there's no disputing that this is an exceptionally impressive package.

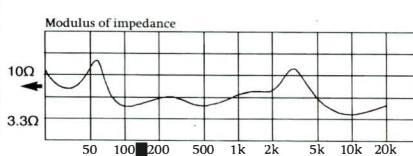
The most obvious areas of criticism are the degree of local unevenness through the midband, which is typical enough of a high sensitivity, paper cone design, plus the slightly early treble roll-off. However, these are minor limitations in an overall context.



Trace is somewhat uneven but holds within fine ± 7 dB limits across the whole audio band, 20Hz-15kHz.



Close-to-wall siting tends to make the bass less even and exaggerate the midbass somewhat, but is subjectively acceptable.



The broad midband is a quite demanding 4-6 Ohms, while treble drops slightly lower, but high sensitivity is fair compensation.

revival of yesteryear and today's norm is a shape far removed from the slimline floorstanders which dominate this group and JBL's own L-series range. A width half as much again as the height makes this a large, horizontal so-called bookshelf model — nominally at least, and in the American sense. (To be fair, JBL recommends proper stand-in-free-space siting, which accords with our practice and findings.)

Other key differences are that this is a full 3-way design, something of a rarity today even at these prices. It also sports a bass driver that we used to call a 12 inch (300mm frame with 250mm pulp paper cone to be more precise), also long out of fashion in favour of slimline baffles and smaller, longer throw drivers.

The net result may be aesthetically assertive in the extreme, but there are significant acoustic implications too in using wide (mirror-imaged) front panels standing 50-60cm or so off the ground. Build is massive, the damped sandwich construction front measuring 38mm thick on my tape measure, while an additional vertical brace between the drivers further stiffens the box, and quite heavy felting lines the sides. Cast chassis, tight bolts and big magnets are the order of the day, with bi-wire terminals feeding a complex (three-way) crossover. The midrange unit has a 95mm plastic cone, while the tweeter uses JBL's familiar 25mm titanium dome with integral pleated surround.

Getting the *L90* into this group review proved a little more fraught than usual. A very well travelled demonstration pair arrived just in time for the listening tests, but a panelist poking around during the lunch break noticed the two bass units felt very different from each another.

One had indeed developed a fault, and we'd already done the auditioning, so pulling the review was an option. However, finding that the *L90* had done well in the listening test, problem notwithstanding, I persevered, and a new pair

was dispatched from JBL's Denmark factory the following week.

Sound Quality

Although the surprisingly positive listening test findings on the original pair of *L90*s must be regarded as suspect, they still pointed accurately enough to this design's strengths.

The overall balance is unusually good right down into the deepest bass, which is always a good start. There's an unmistakable impression here of exceptional headroom and power in reserve. Dynamic shading retains some of the tension and drama of reality, often revealing all too clearly some of the less appealing artifacts of the recording or broadcast studio.

Timing is pretty good too, as can be the stereo imaging if you choose your spot with care. The net result is a bit coloured, with slight 'aw', cuppy midband colorations and 'pinched' voices, while the top end can sound a little brash at times. But the combination of delicacy as well as power makes this a real monitor which is very informative and great fun too.

Conclusion

Adding further credence to theories that future development for hi-fi could well lie in

VERDICT

- ▲ A classic monitor, communicates with gusto and enthusiasm.
- ▼ Can sound a bit crude, untidy and coloured; aesthetically unusual.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,300

✉ Harman Audio UK, Unit 2, Borehamwood Ind Park, Rowley Lane, Borehamwood, Herts WD6 5PZ.
☎ (0181) 207 5050

rediscovering its past, the *L90* flies in the face of fashion and leaves most of the opposition in its wake. Do try before you buy, and use decent stands, but this is definitely one to check out, hence the confident Best Buy rating.

MIRAGE M-890i

Canadian in origin, and closely related to the Energy brand which made an isolated but quite auspicious *Choice* debut six years back in issue 66, the essentially more upmarket Mirage range is a very large one indeed. No fewer than eleven models make up this hi-fi ladder, without going into various additional AV-oriented models. UK distribution is a relatively new phenomenon, via Berkshire dealer Audio Illusion.

Mirage itself is a fairly new name on the scene: 'Conceived in the 80s. Perfected in the 90s' is the hyperbolic claim in the 90i-series brochure, which goes on to discuss the alleged benefits of a mode of operation described as Bi-polar — clearly the Mirage USP (unique selling point). The three 90is are all floorstanders and

stand halfway up the Mirage range, priced from £799 to £1,325, the 890i specifically covered here being the £1,075 middle one.

While the term Bi-polar has a rather nice techno-resonance, it's really nothing more than a variation on the omni-directional theme, which itself has considerable acoustic implications. Each speaker here has four drive units — two identical main/tweeter pairs — mounted back-to-back towards the top of a rear-ported, pillar-shaped enclosure. Since all units operate in-phase, the speaker delivers the same basic frequency balance front and back, and generates plenty of bass and midband output towards the sides as well.

Normal forward-radiating box speakers are omni-directional at low frequencies and progressively more directional towards higher frequencies, whereas panel type speakers are dipolar with front and back out of phase, so output towards the sides cancels out. In essence the omni/bi-pole design will interact the most with the listening room, the panel/dipole the least, while the normal box forward radiator will fall somewhere in between.

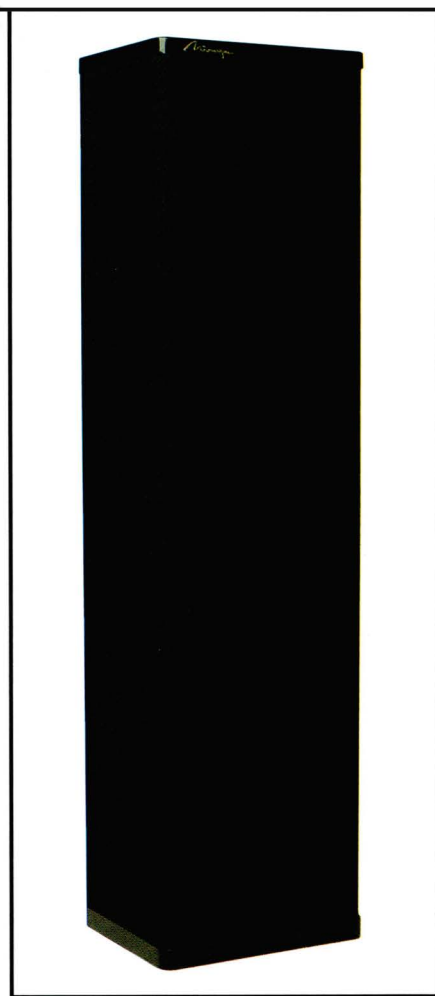
Standing more than a metre high, the slim enclosure is slightly wider than its depth, although the limited footprint is unlikely to prove a handicap because the drivers are operating in balanced mechanical opposition. Small, effective spikes are fitted into decently secured sockets — but don't lose one because normal Euro sizes don't fit the thread. Presentation is decidedly demure, the piano gloss finish only appearing on the top plate and base, while ninety-something per cent of the visible surface is black grille-cloth, which is soft but hardly sexy.

The stiff, solid box is built up from 16mm and 20mm MDF, with extra reinforcement around the drivers and two horizontal braces. Damping is quite heavy up around the drivers and rather lighter around the large folded port. Bi-wire terminals feed two quite complex PCB crossovers. The 25mm silvered dome tweeters are offset slightly from the centre line, to reduce baffle edge diffraction focusing, but there's no attempt at mirror imaging. The main drivers have 100mm plastic cones mounted in pressed steel frames, and all seemed very well assembled.

Sound Quality

Such an obviously 'different' loudspeaker is problematic under blind listening conditions, if only because it's difficult to set a satisfactory equivalent level. This tends to disorient the panel. Most reacted to some degree against the bass-heavy, dull and laid back balance, but nevertheless awarded decent enough overall marks by virtue of the good sense of space and scale and fine midband voicing.

It's certainly not the fastest and most dynamic sound around, and time-smear is in



evidence, but its timing itself is pretty well together and the net effect is quite expressive as well as even-handed. One further relevant factor is that omni and rooms are by nature somewhat unpredictable — further experimentation with positioning or a different room could well affect the findings.

Conclusion

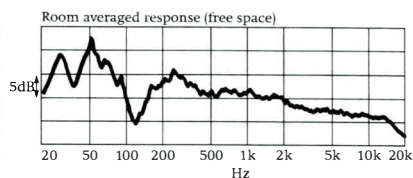
The Mirage *M-890i* is certainly different from the norm, first in the way its bi-polar distribution interacts more strongly with the listening room than more conventional designs, and secondly because of its rich and downtilted balance. The

latter mitigates against formal recommendation, but this remains an interesting and competitively priced speaker, with a distinctive combination of qualities which will suit some tastes and set-ups admirably well.

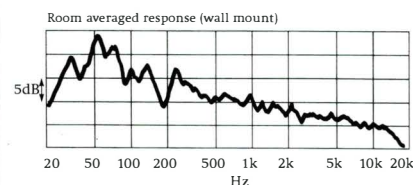
LAB REPORT

Bi-polar omni-directionality may be partly responsible for the decidedly bass heavy balance, but explains the upper bass phase cancellation notch (180Hz close to wall, 120Hz when a metre clear). Optimum siting for an omni is difficult, however, as boundary interaction effects are emphasised.

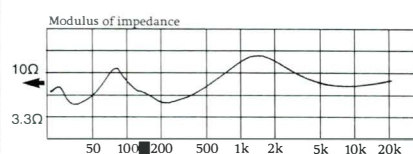
The midrange and treble are downtilted, with quite dramatic implications for the perceived balance. Midband sensitivity is a low 84dB at 1kHz, although the broad bass average is up around 88dB, and in-room bass extension is a useful -6dB at 20Hz (ref 88dB), thanks to a low 35Hz port tuning. The load hovers close to 5 Ohms in the midband, while the electrical crossover point occurs at a lowish 1.5kHz.



Balance is bass rich, while mid-to-treble is smooth but gently down-tilted.



Wall reinforcement only further exaggerates the overall balance down-tilt.



A little demanding at low frequencies, but this shouldn't bother any decent amplifier.

VERDICT

▲ **Fine midband coherence and smoothness alongside the spacious 'in-the-room' omni-type experience.**

▼ **Bass heavy balance leads to a rather lazy and detached experience.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,075

✉ Audio Illusion, 23 Langley Broom, Langley, Berks SL3 8NB.

☎ (01753) 542761

MONITOR AUDIO STUDIO 12

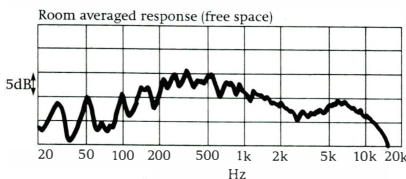
Marketing men refer (rather crassly) to a speaker's WAF, or wife acceptance factor, but if there was a prize for the prettiest speaker in the test group, this very attractive Monitor Audio would be very difficult to beat. The *Studio 12* is an exceedingly neat and compact floorstander in MA's upmarket metal-diaphragm Studio series, priced from £1,000 but carrying a £101 extra loading for the rosewood version pictured and reviewed.

Somewhat less encouraging is the fact that this is also the lightest speaker in our group by a significant margin, even though it's by no means the smallest. Total mass (or density) is never a reliable indicator to quality, but it does provide clues to the amount of engineering content, the thickness of the woodwork et al.

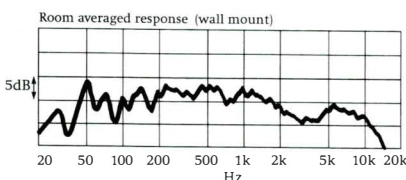
LAB REPORT

Unlike most previous Monitor Audios, the *Studio 12* uses sealed box rather than reflex port loading, resulting in bass alignment which is better suited to wall reinforcement than free-space siting — much in contrast to the MA norm.

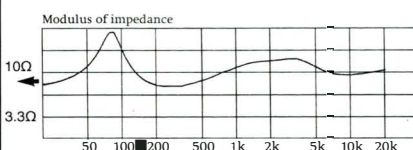
Even with wall assistance the net bass output starts to drop away below 150Hz, though the gentle sealed-box roll-off results in very respectable ultimate extension (-11dB at 20Hz in-room), and room modes are not unduly excited. The broad midband looks uneven but pretty well balanced, while output starts falling above 1kHz, into a broad notch centred on the 3-4kHz crossover. Sensitivity rates a rather modest 86dB/W, partly because the load is an easy 8 Ohms.



Balance is very bass light and mid-forward without wall assistance, though sealed box ensures good ultimate extension.



Wall reinforcement helps the bass though balance still starts rolling off below 150Hz; presence suckout is rather obvious.



A nice easy amplifier load, the box/driver fundamental resonance falling at a rather high 80Hz.

A little hatch on the rear permits extra mass-loading (eg lead shot and/or sand) to be added by the user. This is likely to be worth pursuing in a permanent installation, even though no specific quantitative recommendations are made (the difficulty in the review context being the impossibility of getting the stuff out again).

This mass-loading capability provides a further clue that, acoustically speaking, the box isn't as big as it looks. Although the whole speaker on its spiked plinth stands nearly a metre high, only a little over half the height (54cm on my tape) is actually used as the working enclosure. The lower section serves merely as an integral and very elegant stand, though a not particularly effective one at that. A pretty little plinth supports the whole enclosure and extends its very modest inherent footprint somewhat, which is sensible practice.

My beef, not for the first time with MA speakers, is that the spikes cannot be fixed securely in place. Any attempt (however cautious) to tighten the lock-nuts merely started the sockets spinning in the woodwork. This is particularly exasperating as MA seemed at last to have licked this problem in the recently reviewed MA202.

The fully sealed enclosure is actually about 14 litres in total, no larger than the typical bookshelf-type box, and is built up from 14mm MDF, beautifully veneered on all faces except the back, and lined inside by damping foam. Twin main drivers, each with 90mm ceramic-skimmed metal cones, are placed above and below a small 19mm metal dome tweeter (in fact, the leaflet refers to a 25mm device).

All the drivers are nicely rebated to sit flush with the front panel, and firmly bolted in place. The main units have proper cast frames and small potted magnets. A bi-wire terminal block feeds a quite complex PCB crossover with tag driver connections. Substantial internal wiring connects up the drivers.

Sound Quality

One of the panelists hit the nail firmly on the head, describing the *Studio 12* as: "boringly competent; no particular sins of omission or commission, just not particularly interesting."

The broadly flat overall balance stands it in good stead on neutrality grounds and the *Studio 12*'s timing isn't bad either, but the sound is also a bit small, both in weight and dynamic terms. This observation is emphasised by the shiny, rather pinched and thin character of otherwise well-projected voices.

Detail comes through very well here, but there's no real bounce, drive or authority, and not enough weight either. The bass as a whole



has a dry and rather dead-sounding quality, and the dynamic range seems modest.

Conclusion

From an aesthetic point of view the *Studio 12* looks wonderful, takes up very little room space and therefore makes a great deal of sense. From an engineering point of view you do get high class drivers and build, but only of a 14-litre twin-

driver two-way with integral and inadequately engineered stand. This doesn't seem a great deal for the £1,000 pricetag, especially in a group context. But it's not a bad speaker, so if you love the looks, check it out.

VERDICT

- ▲ A beautiful looking compact floorstander, with shiny metal drivers and lovely veneerwork.
- ▼ Sound, performance and content are all a bit small for the price, though neat and competent enough.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,000

✉ Monitor Audio Ltd, Unit 34, Clifton Road, Cambridge CB1 4ZU.
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Don't have nightmares June Issue. Out 19 May

MOREL 704/2

Morel is best known as a specialist British driver manufacturer, making some unusual units which feature very large diameter voice coils alongside relatively small diameter cone/dome diaphragms. These have appeared in various designs reviewed by *Choice* in recent years (eg Origin Live, SD Acoustics). One complete Morel speaker system has come in for review previously, the *Bassmaster 602* (issue 114), an upmarket largish horizontal bookshelf speaker with classy finish and unusual driver and cabinet configurations.

Most of the same description would apply to the £1,000 *704/2*, including a similarly unconventional driver complement and acoustic loading technique, save that the newer model

follows the current fashion towards a compact floorstanding layout. Indeed, it looks considerably better material value than the *602* — nearly twice the volume, half as heavy again, one extra driver, £100 off the price, and no need to find the money for a stand. About the only things missing are the gilt decorations which provided an unusual but costly variation on the grille theme, residual decoration being a mildly tacky Music First gold logo.

In the group context, the *704/2* is less obviously good value, though it stacks up respectably enough. Nonetheless, it's more compact than most, very solidly built, with superior floor-coupling arrangements and more drive units than any of the others — though in practice the latter turns out to be more handicap than benefit.

Appearance is squat and purposeful, if a shade top heavy, as the lower edges of the fully veneered enclosure are more heavily chamfered than the top. The purpose of this arrangement is in fact to allow access from above to the threaded holes in the chunky steel baseplate: by inserting the rear spikes much further than the front ones (ie by placing the rear lock-nuts above the plate, the front ones below), a slight backward tilt can be achieved. This is helpful because the twin tweeter arrangement used here tends to concentrate its output in a fairly narrow window from a point only 75cm from the floor.

The remaining driver line-up consists of separate bass and mid-range plastic cone/dome, pressed frame Morel drivers, the former with 115mm diaphragm and 75mm voice coil, the latter with 85mm diaphragm and 50mm coil. The tweeters have 28mm soft plastic domes, and the cabinets are mirror-imaged to balance up the off-set disposition. Besides the separate midrange compartment, the bass enclosure is complex, the rear radiation from behind the dome section of the diaphragm being loaded by a large sealed box, while that from behind the cone section is loaded by a damped port arrangement. Best forget the grille.

Sound Quality

Presented on both of the listening days, the *704/2* received wildly contrasting reactions. Happily, on this occasion the listening panels were not to blame. Unbeknown to the panel, the speakers were switched on the second day, the operator substituting a later production pair for the original review samples.

The truth of the matter is that the original demonstrators were actually rather good, but the later samples fell firmly into the mediocre category, and the reasons were down to a number of minor but cumulatively significant changes which had sort of crept into the



production process, and which Morel is now getting sorted out.

The original pair was much liked by four of our six panellists, due to its superior ability to convey the subtleties of musical timing, alongside midband dynamics which are also more convincing than most. Communication skills are high on the agenda here, but there are real cosmetic limitations too. Its strongest critic was most unimpressed by the (lack of) top end and obvious mid-band coloration, and even its fans acknowledged a roughness and nasality which was less than delightful.

Conclusion

At this stage, I can at least state with confidence that the *704/2* has considerable potential, even though there remain some question marks over production consistency. A more serious limitation relates to the twin

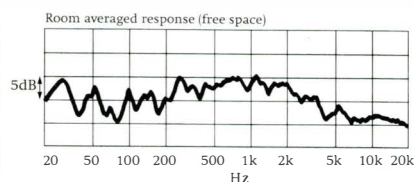
tweeter arrangement, which is a few dB short of the ideal relative level and suffers some of the disadvantages of a twin-source array. Like I said, there's real potential here, but it's not quite fully realised yet.

LAB REPORT

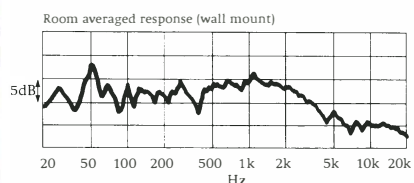
Free space siting leaves the *704/2* lean through the bass region and strong across the upper midband. A wall helps fill out the bass, delivering an overall balance from 20Hz up to 4kHz which holds within impressive ± 6 dB limits, though the narrow cabinet 'reads' the wall with a noticeable 350Hz notch.

Bass extension registers -6dB at 20Hz in-room, referred to a respectable 87dB sensitivity rating and generally easy-to-drive impedance, though note the circa 4 Ohm region in the low bass.

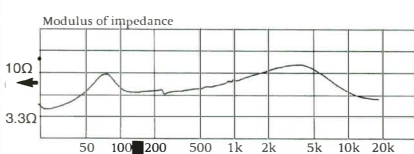
The twin tweeter arrangement only takes over at 5kHz, and struggles to match the midband. Despite the theoretical benefit of such an array, the region above 6kHz registers a very subdued -9dB.



Good ultimate extension but a little lean in upper bass and lower mid. Output level drops quite rapidly above 2.5kHz.



Wall reinforcement gives a very good bass-to-mid balance, but relative treble level is distinctly lacking.



A generally easy-to-drive load except at very low frequencies.

VERDICT

- ▲ Fine timing and open, clear mid-band dynamics put the *704/2* ahead of the pack on information retrieval.
- ▼ Sounds a bit rough and mid-band coloured, thanks partly to the dull and phasey treble.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,000

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

MUSICAL TECHNOLOGY EAGLE

This relatively new manufacturer first came to our attention with the *Kestrel* (see issue 139), a very pretty and compact floorstander which sells for a very competitive £250. Compact it isn't, but the other adjectives apply equally well to the very substantial £1,400 top-of-the-line *Eagle*.

The first shock is the size of the cartons; then there's the weight of the damn things (32kg each), as they're lugged into the house and unpacked. But once the speakers themselves are out, spiked and on display there's no denying this is one of the prettiest — and at the same time looking like one of the most sensible — big speaker packages around.

The supplied 'piano gloss' acrylic finish gives a touch of discreet class (an equally attractive

real wood is an option), but the shape itself is remarkably effective too. The hexagonal base rising to a triangular top with heavy edge chamfering looks interesting and elegant from any angle. It also provides a substantial footprint and enclosed volume, while the topward tapering, baffle slant and chamfering will all help promote wide sound distribution.

The driver line-up is a promisingly simple two-way, supplemented by a very large diameter rearward facing port. Nicely rebated into the narrow front panel, the tightly bolted cast-frame main driver has a massive (presumably magnetically shielded) double magnet arrangement and a 155mm metal cone, while the tweeter uses a relatively large (32mm) metal dome.

The hexagonal shaping and tapering of the enormous (65 litre) enclosure, built from 25mm MDF, will ensure good structural rigidity and outstanding distribution of internal reflections and standing waves. Damping and absorption are provided by a combination of bituminised pads, eggbox foam lining and wadding fill. Thin enamelled single strand wiring connects to the complex high quality crossover and bi-wire terminals.

Hefty spikes seemed to tighten properly and offer exceptional stability in combination with the deep footprint, but their removal stripped out the threading fitted into the base, suggesting that some improvement in the fixing arrangements may prove to be beneficial.

Sound Quality

'Good in parts but not exactly convincing overall', is probably best the summary of the panel's mixed reaction to the *Eagle*. The overblown bass didn't prove quite as subjectively disturbing as the measured responses might indicate, and does at least ensure there's no shortage of perceived weight and scale. But it also plays its part in conferring a rather heavy, ponderous and leaden quality which keeps the timing a shade off the pace with full scale material.

The *Eagle* is a heavy sounding speaker but also, paradoxically, rather forward and dull at the same time. The fine detail on close-miked string instruments is well projected and quite seductive. However, voices lack warmth and have a pinched and peaky quality with some 'cuppy' coloration, while dynamic contrasts are distinctly lacking in life and tension.

Conclusion

From first inspection of the ingredients through to the realisation that the price was significantly



less expensive than expected, everything seemed to be going the *Eagle's* way. However, the measurements and listening test findings are much more equivocal. The sound quality is not without appeal, and at least some members of our panel welcomed the substantial full bandwidth delivery, although the totality was not to every taste.

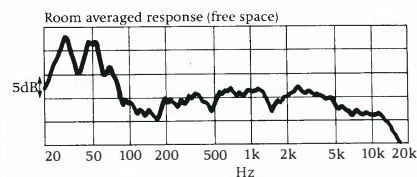
Moreover, the basic measured performance is a rather odd mixture. The massive low bass output (when used as a pair in a real listening room) could have been a plus, as could the generally flat and quite smooth broad midband. But the discrepancy between the two in terms of sensitivity and relative output is impossible to ignore. There are precedents for such a balance: the active Linn *Keltik* and Mission 767 both come to mind, while the *Eagle's* similarity to other large passive metal-cone models like the Boston *Lynnfield L500*, Townshend *Glastonbury*

and larger Jordans is probably no mere coincidence. Last but not least, it's fair to say that the combination found here of modest mid-band sensitivity alongside a rather demanding amplifier load is definitely better avoided.

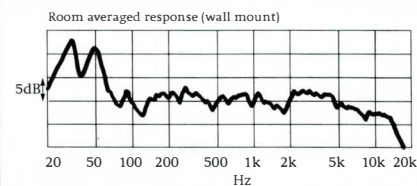
LAB REPORT

Although the *Eagle* appears to offer fine perceived value, the technical tests reveal a number of less welcome factors. The balance may be impressively flat and smooth from 70Hz right up to 13kHz, but it's too strong in the low bass, registering +10dB ref the mid-band on the 30Hz and 50Hz modes of the measuring room.

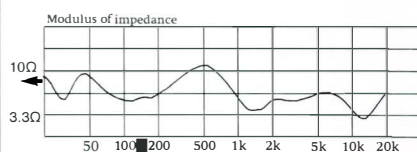
The measured *odB* at 20Hz in-room only comes at the expense of low bass excess, and of a surprisingly low broad mid-band sensitivity of 84dB/W, itself compounded by an impedance trace which stops a little short of evil personified. Only top quality amps need apply, and a very big one will be needed to reach high perceived loudness levels. Interestingly, there's a wide driver overlap, the nominal (voltage) crossover point being at a low 600Hz, although the main driver remains acoustically active up to 1.5kHz.



Broad bass-mid-treble is impressively flat and smooth, but low bass output is dramatically excessive.



Loads of bass again here, though the *Eagle* seems to be very tolerant of close-to-wall siting, which is a little surprising.



The trace shows a complex load with three 4-5Ω minima through bass and mid-band, plus a 3Ω dip at 13kHz. Tricky stuff.

VERDICT

- ▲ Outstanding dynamic range and bass drive from a compact, discreet and well engineered box.
- ▼ A bit lean in upper bass and forward in upper mid, gives a slightly cold and aggressive effect.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,821

✉ Musical Technology, Unit 10, Howard Ind Est, Chilton Road, Chesham, Bucks HP5 2AU.

☎ (01494) 793137

NAIM SBL

Naim's discreet little *SBL* loudspeaker has now been around for the best part of decade. It is a well established favourite on the upmarket UK speaker scene, not surprisingly usually in partnership with Naim Audio's very successful amplification. The original model was reviewed and Recommended some three years ago, in issue 102, since when one important and some minor revisions have taken place, indicating that a repeat visit to this now £1,821 model was well overdue.

It's a very difficult speaker to review in a comparative context, simply because it likes to be planted firmly in one place and not moved around. The initials *SBL* stand for separate box loudspeaker, and the package consists of a quite complex kit of parts which have to be

carefully put together on site by the dealer — not a difficult task, and pretty foolproof, since Naim left it up to me and the manual.

The reason for this complexity lies in the theory behind the *SBL* design, which sounds entirely plausible in seeking to combine the normally mutually exclusive advantages of small and large loudspeakers in one medium size package.

The whole speaker is based on a conventional tubular steel stand, much of which is encased in the lower and larger of three separate veneered enclosures. This one is simply an empty box, damped in various ways and with a gasket-ringed 'mouth' at the top, surrounded by the upward facing spikes of the stand top section. The front two legs of the stand actually pass up through sealed tubes set within this box.

The much smaller main driver enclosure, with an internal volume of about seven litres, sits on the stand spikes, while a carefully specified acoustic resistance panel (controlled leakage) in the base is sealed against the lower enclosure. The tweeter is fitted to its own tiny enclosure, held in position above and clear of the main driver section on long rods attached to the stand.

The purpose of all this rigmarole is twofold: first to isolate the tweeter and lower enclosure from the vibrations generated by the main driver, and secondly to load the main driver by a small enclosure (for low fundamental resonance) pretending to be a large one (for good excursion control).

The main change with the current model is a new mid-bass driver, still with a 150mm doped paper cone but now with a very open cast frame. An unusual mass-damping arrangement, with metal weights attached to lossy pads, is used throughout the design in all sorts of places, which may explain why the weight seems to have risen markedly since our last review. Another unusual feature is an external crossover, which can easily be removed if upgrading to active drive.

Sound Quality

Even though it's true that the *SBL* may have benefitted synergetically from the use of a predominately Naim driving system, there's still no avoiding the fact that it topped the lists by a comfortable margin, with positive reactions from all the panelists. Several commented that fine timing, a wide dynamic range and freedom from congestion made it easy to follow the complex strands of musical arrangements.

If that's the good news, it's also true that the sound balance is a bit upfront and punchy for some listeners, and the bass a little dry, giving a slightly cold and hard overall impression. Sweet

is not an adjective that springs readily to mind, and the close-to-wall siting does add a measure of voice coloration. Dynamics, too, are no better than the market norm, but the amount of coherent musical information delivered is so comfortably ahead of the pack that even low level listening remains a delight.

Conclusion

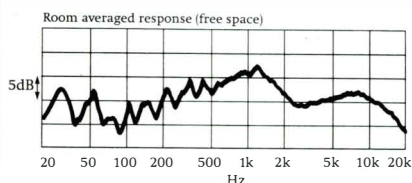
No larger or more intrusive than a stand-mounted bookshelf speaker, the *SBL* uses its elaborate but clever engineering to such good sonic effect as to justify its high price. Whether the rather forward tonal balance would make a successful match with non-Naim amplification is less certain, and experimentation is advised, but Recommendation is mandatory.



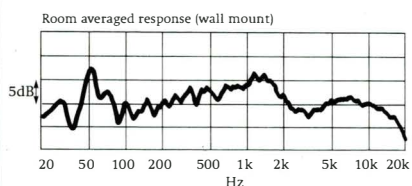
LAB REPORT

Comparing the latest *SBL* to the earlier version is interesting, as the new model shows both pluses and minuses. The positive side is improved smoothness through broad midband, plus a tad extra bass extension and sensitivity. However, lean upper bass and obvious rising trend which climbs 7dB from 100Hz to 1.5kHz is more pronounced than before, and will confer a distinctive character on the sound, as will the downtilt 1.5-2.5kHz, and lack of energy 2.5-5kHz.

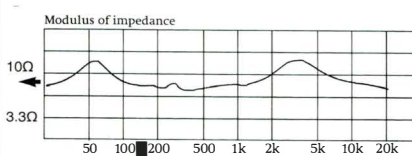
In other respects, the combination of respectable (circa 87dB) sensitivity, fine bass extension (-8dB at 20Hz in-room) and an easy 6+ Ohms impedance looks very sensible and satisfactory. Finally, room mode excitation is held under good control.



Not intended for free space siting: balance here is bass light and mid forward. Output drops a notable 7dB around 1.2-2.5kHz.



Wall reinforcement delivers a balance which is a little bass light and upper mid forward, but with good ultimate extension.



Impedance is very easy to drive, with the well-damped fundamental resonance appearing at 55Hz.

VERDICT

- ▲ Outstanding dynamic range and bass drive from a very compact and discreet box; fine engineering quality.
- ▼ A bit lean in upper bass and forward in upper mid, gives a slightly cold and aggressive effect.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,821

✉ Naim Audio,
Southampton Road,
Salisbury, Wilts SP1 2LN
☎ (01722) 332266

RATA TWO-WAY

Russ Andrews is one of Britain's more experienced hi-fi enthusiasts, and has built up a wealth of expertise in the subtle art of system optimisation. Until recently, the RATA operation has concentrated mainly on accessories and components for the serious audiophile, but the portfolio now includes full scale components which amount to a complete hi-fi system.

The amplification and speakers are entirely original and decidedly quirky, and in this synergistic age are of course intended to work together, but the *Two-Way* speaker is sufficiently intrinsically interesting to deserve a solo outing.

Priced at £1,795 including an unusually shaped matching wooden stand, the *Two-Way* flies in the face of fashion, with a rather dumpy,

stubby looking shape. It sits stably enough upon its tripod support, but looks a little uneasy, as if thinking of jumping off at any moment. I'm informed that a rectangular top plate matching the speaker footprint will now be used, and this overcomes the illusion of precariousness. Odd it may be, but it's also a friendly enough looking speaker; light oak wood veneer covers both speakers and stands, even though I can't vouch for the figurative matching.

The *Two-Way* name is of course chosen to distinguish it from the *Three-Way*, of which it forms a part. When funds and aspirations permit, the *Two-Way* owner can hand back the stands together with a cheque for £2,340 and upgrade to the larger system, where the supporting role for each *Two-Way* is supplied by a large enclosure with a 15inch bass driver. Given the findings of our test results (see box), the prospect of enhanced sub-200Hz bass delivery is going to prove strong temptation...

The drivers are the most unusual feature, especially the large and massively-built main unit. This has very little to do with anything normally encountered in hi-fi land. It's roots are firmly in the Public Address world, with a light, large diameter (190mm) undamped paper cone, very stiffly suspended in a substantial cast frame and driven from a huge magnet. The tweeter will be more familiar to hi-fi people, but is still unusual in being a ribbon affair, with 60x15mm diaphragm and some horn assistance. Both were very tightly bolted in place.

The box walls are interesting, the outside layer of 19mm chipboard lined by a thick, fibrous but less dense layer of fibreboard. Additional damping fill uses long hair wool. Just a single terminal pair feeds the drivers, the crossover here consisting of just a single capacitor in the tweeter feed. No grille is currently available.

Sound Quality

Given the balance anomalies, strong criticism was inevitable. Half the panel couldn't come to terms with the RATA's foibles at all — "totally unconvincing" was one reaction. The other half was far more forgiving, eliciting comments such as "spirited and encouraging" and "some real tension and drama".

It is, in short, a bit of an oddball, one panellist describing it as halfway to a Rehdeko, with a dominant and far-from-smooth midband which is nevertheless very communicative and coherent. It's not entirely free from timesmear, and the upper mid has a sometimes uncomfortably edgy quality — brass fans please note (though this edginess could probably be



cured with more careful system and cable matching). The lack of bass weight inevitably robs the sound of a true sense of scale, but the quick and well-timed delivery which stops as effectively as it starts is nonetheless very musically informative. Imaging too is interesting, with almost panel-like qualities — rather phasey and subject to significant shifts with head movement, but beautifully coherent for the carefully positioned single listener.

Conclusion

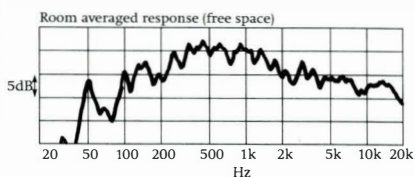
No one could accuse the *Two-Way* of being a good all rounder. It's a strictly extremist device which will offend as many ears as it pleases. It makes no apology for flaws which are as obvious as its strengths, yet the high efficiency Public Address approach serves as a welcome reminder that hi-fi orthodoxy has its own

limitations. Formal recommendation may be wholly inappropriate, but the *Two-Way* remains a very entertaining and engrossing musical communicator, notwithstanding all its cosmetic constraints.

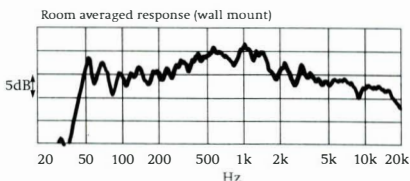
LAB REPORT

A very different measurement set from the hi-fi norm. The impedance stays at or around 15 Ohms through the bass and midband, which means the amp only has to supply half the current demanded by a standard 8 Ohm load. This makes the high 93dB midband sensitivity all the more surprising.

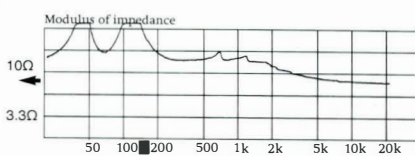
The combination of a driver/box natural resonance at a high 100Hz, plus porting tuned to around 65Hz, means there's nothing much below this figure, and even wall reinforcement leaves the mid and upper bass distinctly lean. Smoothness, too, is not its forte, the downturn above 1.5kHz being followed by a distinctly ragged looking 2.5-4kHz, while the treble proper is -7dB ref the midband.



Midband-to-treble is spikily uneven but very well ordered overall. Bass starts to roll off quite rapidly below 250Hz.



Wall reinforcement does help the overall bass alignment significantly, but makes the midband rather less even.



Ludicrously easy to drive load, attests to the high innate efficiency of the RATA mid/bass drive unit.

VERDICT

- ▲ Fine timing and highly entertaining dynamics from a usefully upgradeable package.
- ▼ Very extreme, with no real bass and quite obvious coloration elsewhere.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,795

✉ RATA Ltd., Edge Bank House, Skelsmergh, Kendal, Cumbria LA8 9AS.
☎ (01539) 823247

ROGERS LS3/5A+AB1

The BBC-specified LS3/5A miniature monitor, manufactured under licence for more than twenty years by Rogers and a number of other brands, now costs a very substantial £700-plus, (depending on finish). This is largely because of the very picky nature of the specification — damped birch-ply box, heavy baffle felting, tight driver tolerancing and so on. But the tight spec is also the making of this modern classic. An oasis of value stability, it is regularly subjected to trimming engineering in efforts to hold established price points in an inflationary world.

The 3/5A's reputation has been built upon superb voice reproduction and stereo image precision, but even its biggest fans must acknowledge the very real limitations in bass

weight and extension, power handling, sensitivity and loudness capability. However, improving upon this well-loved classic has never been easy — I can still clearly recall a pair of wardrobe-sized Rogers subwoofers which arrived at my house for testing about fifteen years ago. They were as hideous in appearance as they were acoustically impressive.

This new £500-per-pair AB1 subwoofer at least gets the aesthetics absolutely right: the biggest problem for existing 3/5A owners is likely to be the matching of veneers. Keeping the same plan area as the 3/5A, it forms an elegant and effective pillar stand for optimum free-space siting of the little monitor, while at the same time incorporating driver, port and crossover components to make up a simple coupled-cavity subwoofer. It's not a very big enclosure, and coupled-cavity loading isn't the most space-efficient technique. However, oodles of bass would be out of place for a cabinet which has to blend with the very low sensitivity and surprisingly good inherent bass extension featured in the standalone LS3/5A.

As the measurements show, the AB1 acts more as a supplement than a replacement for the 3/5A, although it does include very gentle high-pass filtering in the feed to the 3/5A, which will improve the system power handling. It's solidly built from 20mm MDF, foam-lined and fitted with proper spikes top and bottom — the latter into a cute little plinth which marginally increases the very limited footprint.

The 3/5A itself has a complex, tightly-specified enclosure, the main driver using an 85mm plastic cone which is mounted from the rear of the baffle.

Sound Quality

When we attempt to equalise volume levels during the listening tests, we do conceal some of this speaker's limitations. Other shortcomings were apparent enough to our listening panel, but the 3/5A-plus-AB1 combo nevertheless did rather well overall, thanks to its unusual neutrality and even-handedness, as well as its refined voice reproduction.

Reproduction is very much the word here, however, as the speaker makes no real attempt to mimic reality in terms of dynamic drive or transient attack. Instead, it provides an open, unboxy though somewhat constricted 'window' onto the recorded soundfield, whose natural perspectives and lack of exaggerations provide their own reward. Timing is also pretty good, even if the bass does have a slightly 'rubbery' quality.

Sighted listening comparisons against the 3/5A alone show how effectively the AB1 package adds just enough extra warmth and richness to the 3/5A in order to counter the latter's rather cold and dry free-space balance,



yet not too much to swamp the fine openness and intelligibility of the mid and top frequencies.

Conclusion

Assessed as a complete £1,200 package, the 3/5A-plus-AB1 combo does offer a relatively restricted total performance envelope, but within those constraints it conducts itself with considerable charm and attractive openness, delivering above all natural perspectives upon the recorded material.

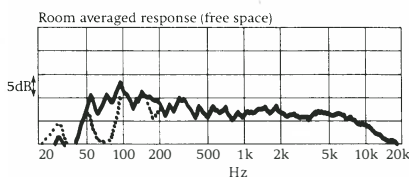
More important is perhaps the way the addition of AB1s will improve the sound of all those LS3/5As already out there, providing

support for free-space siting as well as the extra warmth to improve the overall balance. The size match between small box and subwoofer is excellent, though getting well-matched veneers might prove difficult.

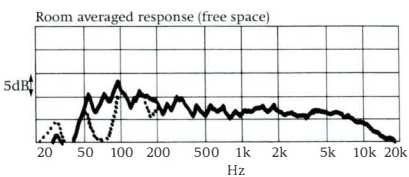
LAB REPORT

Inevitable performance envelope constraints are imposed by the low (81-82dB midband) sensitivity of the sub-miniature LS3/5A, though the gentle filter from sub to sats will improve power handling over 3/5As alone, as well as helping preserve an easy amp load. Used alone and in free space (for best midband), the 3/5A starts running out of steam below 150Hz. Add the AB1 and output is well sustained and unusually smooth down to 50Hz, with the 20Hz in-room level registering around -14dB, and the two sections overlapping at around 100Hz.

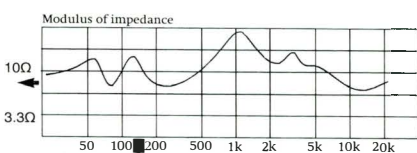
The advantage of the small speaker is clearly seen from an in-room response that's significantly flatter and better controlled than the group norm. There's some local unevenness along the way, but the overall trend holds within close ±4dB in-room limits, and falls just 7dB from 50Hz to 10kHz.



An exceptionally fine overall balance, helping optimise the 3/5As alone (dotted trace) for free-space siting.



Not intended for close-to-wall siting, which results in an excess of midbass boom when placed here.



The load is complex, but the impedance modulus remains around and above 80 Ohms throughout.

VERDICT

- ▲ **Superb neutrality, with fine voice reproduction and precise stereo imaging.**
- ▼ **No party animal — it doesn't go loud, and has no real bass grunt. Very low sensitivity.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,200

✉ **Swisstone Electronics Ltd,**
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TANNOY D500

Although Tannoy has been mixing it with the best budget speaker manufacturers for a number of years, the relatively new Definition models are the real heirs to the company's reputation for big, beautifully finished and very serious loudspeakers. These are models where the achievement of a predetermined price point takes second place to the application of engineering excellence.

The *D500* under scrutiny is the middle representative of a range so far three-strong, although the nomenclature implies a fourth speaker (*D300*) is also on the way. The *D500* is priced from £1,560, with the rosewood finish of our samples adding a further £90.

This is more than twice the £600 price tag on

Tannoy's budget-range *638* reviewed in January '95, a relevant observation since these two models have a great deal of outline specification in common. They are the same in height, width and main driver diameter, and sport the same twin-cavity bass-loading system. However, the cabinet depth and all-up weight are both significantly greater here, and this *Definition* model has all the luxury extras like the real-wood finish and cast-frame drivers. That said, the plastic trim surrounding the top surface could have looked better in a more interesting finish or material. Tannoy's driver-frame profile is intended for surface rather than flush mounting, but does look a little less slick as a result.

The enclosure has an irregular plan section, similar to the Profile series, which has the double benefit of smoothing lateral sound dispersion on the outside, and helping spread the internal standing waves and reflections.

The *D500* shares the same, quite complex bass-loading system as the *638*: a main upper chamber is loaded by two ports: one direct to the outside world; one connecting to the lower chamber, which has its own external port. The hidden internal ports of the *500* (and *638*) are now fitted with a foam bung. This effectively decouples the lower chamber almost entirely. Bungs are also provided for the other ports, effectively providing a closed-box option.

Each of the two visible drivers has a substantial frame and magnet, plus 150mm plastic cones, tightly bolted in place. The upper unit is one of Tannoy's dual concentric drivers, with a horn-loaded tweeter firing through the middle of the cone, providing something close to a point source. The hefty, veneered MDF wrap is stiffened by three horizontal braces (including the ported partition), and the whole thing is supported on a chunky MDF plinth with large and well-fixed spikes. Bi-wire terminals with captive links feed a high-class crossover and a separately-placed large inductor.

Sound Quality

The listening-test findings were a little disappointing overall. Despite widespread acknowledgement of the solid, powerful, extended and reasonably even bottom end, there were complaints that the midband was veiled and the whole thing was a little bland and uninteresting. It's difficult to pick specific faults as such, but the *D500* seems a bit sluggish as it gets going. It was also accused of sounding rather overdamped and lifeless.

I was similarly under-impressed when carrying out the initial hands-on listening work. Strikingly good mid-to-treble integration gave



fine focus and image precision, especially when listening close up, tending to vindicate the dual-concentric driver approach. However, the net effect seemed somehow squashed and congested in the midband, and somewhat limited in dynamic range. Then I tried the bi-wire option, which in my experience usually gives rather equivocal results. In this case, however, it wrought a substantial improvement by opening up the midband and improving coherence.

Conclusion

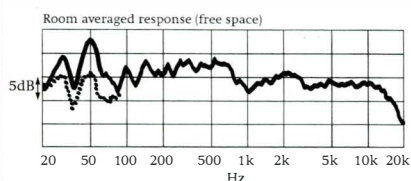
The rather belated discovery of the bi-wire bonus rescues the *D500* from the ranks of the also-rans, but overall it's still a bit of a mixed bag. The good bass weight and power, as well

as the high sensitivity, are all compromised by some midband unevenness and a demanding amplifier load — meaning that this model is definitely worth checking out. Just keep in mind that it is not an obvious clear-cut classic.

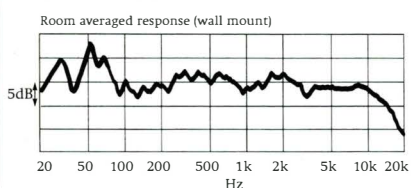
LAB REPORT

At first sight, the *D500* appears to offer an enviable combination of high sensitivity (90dB) and deep bass extension (-6dB at 20Hz in-room). However, the impedance is exceptionally low, hovering around 30ohms throughout the bass and lower mid-band, dragging enough current from the driving amplifier to 'pinch' some 4dB of extra sensitivity over a true 1W input.

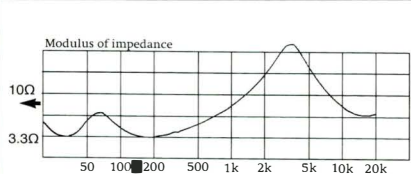
The curves seem pretty well ordered overall, with the bass alignment particularly well judged. The option of open or closed ports allows the sort of adjustment which would suit free space or close-to-wall siting. However, a worrying feature is the way output starts to dip at around 700Hz, leading to an obvious -5dB suckout at 1kHz. Although output recovers and looks pretty good thereafter, I suspect this suckout in such a vital area will have unwelcome subjective consequences.



Ports open and clear of walls, bass-to-mid balance comes with significant unevenness above 700Hz; dotting shows ports blocked.



Blocking the ports even permits close-to-wall siting without too much midbass excess; upper-mid unevenness remains.



A current-hungry load hangs around 3-4Ohms for much of the bass and mid-band.

VERDICT

- ▲ Deep, powerful bass and fine mid-band focus from a beautifully-built heavyweight.
- ▼ Not the smoothest mid-band around; high sensitivity is compromised by the demanding amplifier.

SOUND ★★★★★

VALUE ★★★★★

PRICE £1,560

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LOUDSPEAKERS

The proof of the speaker is in the listening

Best Buys and Recommendeds

Upmarket loudspeakers are not big sellers in Britain, and on the evidence of this dozen, it's not totally surprising. Our listening panels expressed disappointment that the overall standard wasn't any higher.

It's not that there were any real lemons — each is capable of very satisfying results in its own way when plugged into a decent quality system. The question at issue is, rather, to what extent they justify what are, after all, quite substantial price tags. I've never gone along with the attitude which dismisses upmarket hi-fi under the law of diminishing returns, a perspective which could end up with us all using mini systems. But I have to admit that the diminishing return argument is a little too persuasive when summarising this group.

Is the Tannoy *D500* really worth two and a half pairs of 638s? Materially and in lower volume manufacturing costs maybe, but sonically I doubt it. Likewise, is the *ES25* really better than the *ES14*? Louder and bassier certainly, but on balance grounds alone not necessarily better.

It's all rather too reminiscent of the eight-strong group of £750-£1,250 models which we reviewed last summer (issue 132). Five of those were hampered by unwelcome mid-bass excess, and at least five out of our new dozen are overburdened in a similar way. Actual in-room bass extensions are overall pretty good, as one has a right to expect, but the bass tuning for real in-room stereo-pair use is often suspect. I don't consider myself unduly dogmatic on frequency balance, but do regard it as one key factor (among a handful) which a speaker at these sort of prices ought to achieve, or at least have a pretty good excuse for failing. It's therefore no coincidence that all the Recommended models were better than average in this respect.

Bass extensions may have been pretty

One Best Buy and three Recommended models is a hit rate of only one third, which is a bit lower than our test groups usually achieve. Perhaps I'm being unduly stringent, but I believe this rigorous approach only reflects the rightfully high expectations of someone spending over £1,000 on a pair of speakers.

That said, it's worth reiterating that those without BB or R flags should not be ignored. I'm reliably informed that folks contemplating large and expensive loudspeakers expect to hear something with a real thump — and there are plenty of those to choose from here.

That we find such a real thump more appropriate to movie train crashes than the infinitely more subtle art of music reproduction is a matter of judgement, and perhaps taste. If we were to pretend that personal taste doesn't enter into it, that would be tantamount to imposing our prejudices on you. Rather the onus is on the reader to use our opinions and comparative data to help find the sound that best suits his or her requirements.

There's just the one Best Buy here, and that's for the £1,300 JBL *L90*, a bulky and conceptually old-fashioned device, which only serves as a reminder of how effective a large bookshelf format three-way can be. Top quality stands are essential here, which will add to the cost, but the combination of large diameter, short-throw bass drivers mounted well off the ground has a persuasive combination of

clarity and dynamics which is firmly in the studio monitor tradition.

Least expensive of our Recommended models, the Rogers *LS3/5A/AB1* combo couldn't provide a much greater contrast to the JBL. It costs from £1,200 complete, which is a tad pricey in view of its limited bass and loudness capabilities, but the even-handedness of this bass-boosted classic baby is its own reward. Existing *LS3/5A* owners ought to check out the *AB1*, which is a delightfully subtle and effective enhancement. On its own, the *AB1* is available from £416.

A new name on the UK scene, the £1,500 Audiovector *3X* is a large and monolithic freestander which does just about everything rather well, through clever application of the two-and-a-half-way approach. Sound is a little understated and shut in, but significantly more even and time-coherent than most.

The latest £1,821 Naim *SBL* — now with cast frame main driver — is significantly smoother than before, if a bit more forward and up-front with it.

Arguably the ultimate two-way, the very complex cabinet network justifies the high price and gives the *SBL* some of the best characteristics of small and large speakers combined in a very compact and discreet wall-mount package. It ends up sporting superb dynamic range and consistency.



Lab test results in full

MODEL	AUDIO PHYSIC TEMPO	AUDIOVECTOR 3X	EPOS ES25	JBL L90	MIRAGE M-890I
SIZE (H x W x D) (CM)	107x22x28-46CM	103x22x27-35CM	94x23.5x35CM	40x60x34CM	103x25.5x20.5CM
WEIGHT	25KG	26KG	29KG	26KG	19KG
RECOMMENDED AMP POWER (W/CH)	20-120W	15-150W	15-150W	10-200W	15-150W
RECOMMENDED PLACEMENT	WELL CLEAR OF WALLS	1FT FROM WALL	CLEAR OF WALLS	CLEAR OF WALLS	CLEAR OF WALLS
IN ROOM AV RESP LIMITS 50HZ-10KHZ	±7dB	±5dB	±8dB	±5dB	±10dB
IN ROOM/SPACE LF ROLLOFF (-6dB REF MID)	28Hz	20Hz	22Hz	23Hz	20Hz
IN ROOM/WALL LF ROLLOFF (-6dB REF MID)	26Hz	Hz	22Hz	22Hz	20Hz
IN ROOM OUTPUT AT 20HZ (REF MIDBAND)	-14dB	-7dB	-8dB	-8dB	-6dB
EST MIDRANGE SENSITIVITY (REF 2.83V, 1M)	86dB/W	88dB/W	87dB/W	91dB/W	88dB/W (BASS)
IMPEDANCE CHARACTERISTIC (EASE OF DRIVE)	VERY GOOD	QUITE DEMANDING	QUITE DEMANDING	DEMANDING	QUITE DEMANDING
TYPICAL PRICE PER PAIR (INC VAT)	£2000	£1500	£1655	£1300	£1075

The best of the rest

Choice has tested quite a number of £1k-£2k speakers in its time, but trawling through the past five years (going back any further might be unreliable) reveals around a dozen Recommended models, all of which are at least nominally available (though some might be difficult to track down).

A very large and bluff stand-mount two-way, the Audio Note AN-E/B (£1,300) nevertheless delivers one of the most informative and entertaining sounds around. The added bonus of high sensitivity gives it valve amp user appeal. The same virtue gives the substantial floorstanding three-way Cabasse Skiff (£1,500) an edge over the competition.

Two related Castle models, the Howard

(£1,000) and the Winchester (£1,500) use an unusual quarter-wave bass loading technique to give a delightfully open and airy midband, albeit without really deep grunt.

Three of the prettier floorstanders around, all intended for close-to-wall siting, are the Heybrook Sextet (£1,100), Linn Kaber (£1,300) and Rega XEL (£1,040), all well built and engagingly coherent designs, but each with its own particular foibles. The Rega received a Best Buy rating last year, but the design has recently been changed, and we're not sure that this has been for the better. The SD Acoustics SD5 (£1,235) is similar in size and class to these three, but needs a free-space environment.

Free space is also needed for the much

smaller Professional Monitor Co LB1 (£1,000). This compact monitor also needs an appropriately high quality stand to get it well off the ground. Smaller still is the Thiele SCS (£1,069), and even tinier the Totem Model One (£995), from the USA and Canada respectively, both fine examples of the good sound which may be had from small packages.

And if none of those appeal, check out the Shahinian Arc (£1,675). Although not formally Recommended when originally reviewed, this model has definitely been subsequently improved, and represents a total contrast to the rest — squat yet very spacious thanks to semi-omni-directional upward facing drivers.

Audio Note AN-E/B: informative, entertaining



Castle Howard: open, airy midband ahoy



Professional Monitor Co LB1: free space!



good on the whole, but the sensitivity ratings are frankly disappointing, only the JBL and RATA really standing out in absolute efficiency terms.

Several fell short of the market average — acceptable among small speakers perhaps, but for the most part these aren't. I suppose there's the argument that the upmarket speaker will be driven by an upmarket amplifier which is likely to have plenty of power. But I'm becoming increasingly convinced that high sensitivity has its own rewards, as well as being peculiarly appropriate to the growing number of enthusiasts who now opt for

lower power valve amplifiers.

If the retro trend is now firmly part of the hi-fi amp scene, perhaps there are signs of it starting to spread to speakers. None of the models awarded formal Recommendation are exactly brand new. The JBL has its roots back in the '60s, the Rogers in the '70s and both the Audiovector 3 and Naim SBL first appeared during the '80s. It could be that the time is right to carry out a little more industrial archaeology.

One bonus in doing these projects is the opportunity to learn something along the way. This time, the lesson was not to

take bi-wiring lightly, although I still haven't quite figured out the consequences. The trouble is, results seem so very unpredictable. The Tannoy D500 improved significantly when bi-wired, the Epos ES25 slightly (when tri-wired), yet the Audiovector 3X sounded better with just the single cable run, which is all rather mystifying. Worrying too, as I still can't work out how to build the option into the panel listening tests. In the meantime, I guess I just have to be a little more careful with my cross-checking, and remind myself again how little I really know about loudspeakers.

MA STUDIO 12	MOREL 704 II	MUS TECH EAGLE	NAIM SBL	RATA TWO-WAY	ROG 3/5A/SUB	TANNOY D500
97x16.5x21cm	80x23x21cm	105x26.48x31-44cm	88.5x26x16-27cm	46x32.5x25cm	93x19x16.5cm	96x16-30x35cm
10KG	16KG	32KG	24KG	14KG	13KG	26KG
20-60W	20-150W	25-120W	15-120W	10-150W	25-120W	15-200W
1FT FROM WALL	1FT FROM WALL	CLEAR OF WALLS	CLOSE TO WALL	1FT FROM WALL	CLEAR OF WALLS	CLEAR OF WALLS
+5dB	+6dB	+7dB	+5dB	+6dB	+4dB	+5dB
28Hz	20Hz	BELOW 20Hz	25Hz	100Hz	45Hz	20Hz
30Hz	20Hz	BELOW 20Hz	25Hz	50Hz	45Hz	20Hz
-11dB	-6dB	0dB	-8dB	BELOW -20dB	-15dB	-6dB
86dB/W	87dB/W	84dB/W	87dB/W	92dB/W (MIDBAND)	83dB/W	90dB/W
VERY GOOD	QUITE DEMANDING	VERY DEMANDING	VERY GOOD	VERY GOOD	VERY GOOD	VERY DEMANDING
£1000	£1000	£1400	£1821	£1795	£1200	£1560

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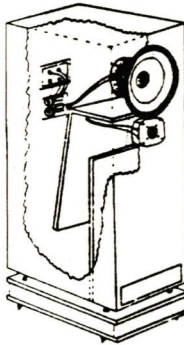
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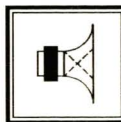
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Built in Ipswich to an exceptional standard. Originally retailed at £1300 and were very well reviewed at that price (see back of this magazine).

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£299 line £349 Phono

Current RRP £299 with phono stage. Hand built as above, silly price

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The power amplifier (with volume control) version of the well reviewed Electra integrated valve amplifier. For use with pre amp, passive controller, simple input switch box or, for single source, nothing at all.

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Frank (0831) 111872

ARCAM Alpha 5 CD, 2 years, boxed, £290.
Meridian 203 DAC, 2 years, boxed. Denon TU-
260L tuner, 2 years, boxed, £75. Middlesex
(01932) 787598

ARCAM 100 cassette deck, new, £600. Naim NAT
02 tuner, boxed, as new, £590. Gloucester (01452)
611917

AUDIO INNOVATIONS Alto black, £175. Windsor
(01753) 865770

AUDIOQUEST Chrystal 6 metre bi-wired termi-
nated 4mm pair, cost £180, £120. Kent (01474)
708351

B&W 110C speakers, v.g.c. with pair of target
stands, £75 complete. Shropshire (01691) 778350

B&W 620i speakers, black ash finish, floor-
standers, boxed, as new, £170 ono. Heathrow
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Cam. A60 amp, £60. Kef Concord 3 w/stds, £60.
Sony Discman D11, £70. W. Sussex (01903)
230445

CAMBRIDGE CD3 CD, TDL RTL2 speakers,
Pioneer A400 amp, £500. Bishops Stortford
(01279) 504926

CELESTION 300 speakers, mahogany, £550.
Huddersfield (01484) 663552, 8.00-5.30 weekdays

CROFT valve preamp, mint, one year old, £250.
Thorens TD160B MkII, boxed, mint, £75, no arm.
BA S500A pre, £400. Dudley (01384) 825901

JAMO D365 bass reflex speakers, mint condition,
£280 ovno. Staffs (01782) 411120

JBL L212 speakers 3 piece, £495 (£1800). Albarry
M408 amps+pre+psu, £495. Gale 401C spkrs/stds,
£250. Northampton (01604) 584630

JPW Sonatas (walnut) + Heybrook HBS1 stands,
£90, mint. Abingdon (01235) 511490 eves

JUPITER amplifier, as new (unused), two year
guarantee, superb 'valve like' sound, can be
split into pre and power amps. Cost £320, accept
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KEF 105/3, black ash, new, boxed and mint,
£1250. Leics (01509) 219168

KEF 40B powered subwoofer, less than 1 yr old,
£400 ono. Kent (01634) 364279 eves

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Trichord Clock2 mod. 18 months old, mint, bar-
gain, £350. Surrey (01483) 575178

KISEKI Agate (£1000) £250. 1.5 metre Sterling
interconnects (£510) £250. Studer-Revox G36 +
nabs, tapes, serviced, £450. Obelisk One £75.
Wanted: Krell KSA200. Aylesbury (01296) 730447

LINN LP12/Cirkus/Lingo/Ekos in walnut, £1,575.
Two 5 metre lengths Naim NAC A5 cable, bi-
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LINN LP12, Valhalla, Cirkus, Ekos, Klyde, vgc,
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LUXMAN D90 CDP, Pioneer A88X amp,
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MAGNEPAN 1.5SE, £900, 1 year old. London
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DAC, perfect, boxed, £425 together or will sepa-
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MERIDIAN 200 transport Trichord Research
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626660

MERIDIAN 206 DS £595. Linn Keilidh, new Jan.
inc bases, £550, DPA little bit, £175. Leamington
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MERIDIAN 208 CD/Preamp plus 209 remote and
Kimber power cable. Cost £1,600+. Mint condi-
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METAXAS Iraklis p.a. Charisma pre amp, boxed,
unused, £2000 ono. MRP £3000 plus. Devon
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MICHELL Gyrodeck PS4, Ortofon 3000 Mk2 car-
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London (0181) 989 9785

MISSION 751 speaker, boxed, as new, £200. Rega
Kyte speakers, boxed, £100. London, Sam (0973)
178740

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+ Kudos stands, £160. All 4 months old, mint.
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MUSICAL FIDELITY A100 amp, £200. Marantz
CD94 CD player, £250. Musical Fidelity MC2
speakers, £150. Longfield (01474) 874663

MUSICAL FIDELITY preamp P173 + psu, £400.
MA50 monoblocks £400. Hereford (01432) 268484

NAIM NAP140, £300. NAC32.5, MM, CD, £300.
NAT01, £600. Linn Kan stands, offers. Hants
(01489) 589704 Evenings

NAIM 42.5/140. MC input board, BNC connectors
on phono, includes all cables. Very good condi-
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Chesterfield (01246) 434453

NAIM NAC42.5, NAP90, £450. Audio Technica
OC9s, brand new, £160. Wanted: psx. Rotel

RC870, RB850, £250. S. Wales (01792) 280061

NAIM NAC 72/140 pre/pwr amps, 2 months old,
£1000. Linn LK100 amp, £350. Berkshire (01753)
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eves

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712815

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W Yorks (01484) 535307

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JPW sub + 3 sats, £120, mint. Abingdon (01235)
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subwoofer. S. Glamorgan, Gerry (01446) 798135

YAMAHA NS1000 loudspeakers, ebony finish
with target stands. Very good condition, £450
ono. Bath (01225) 333194



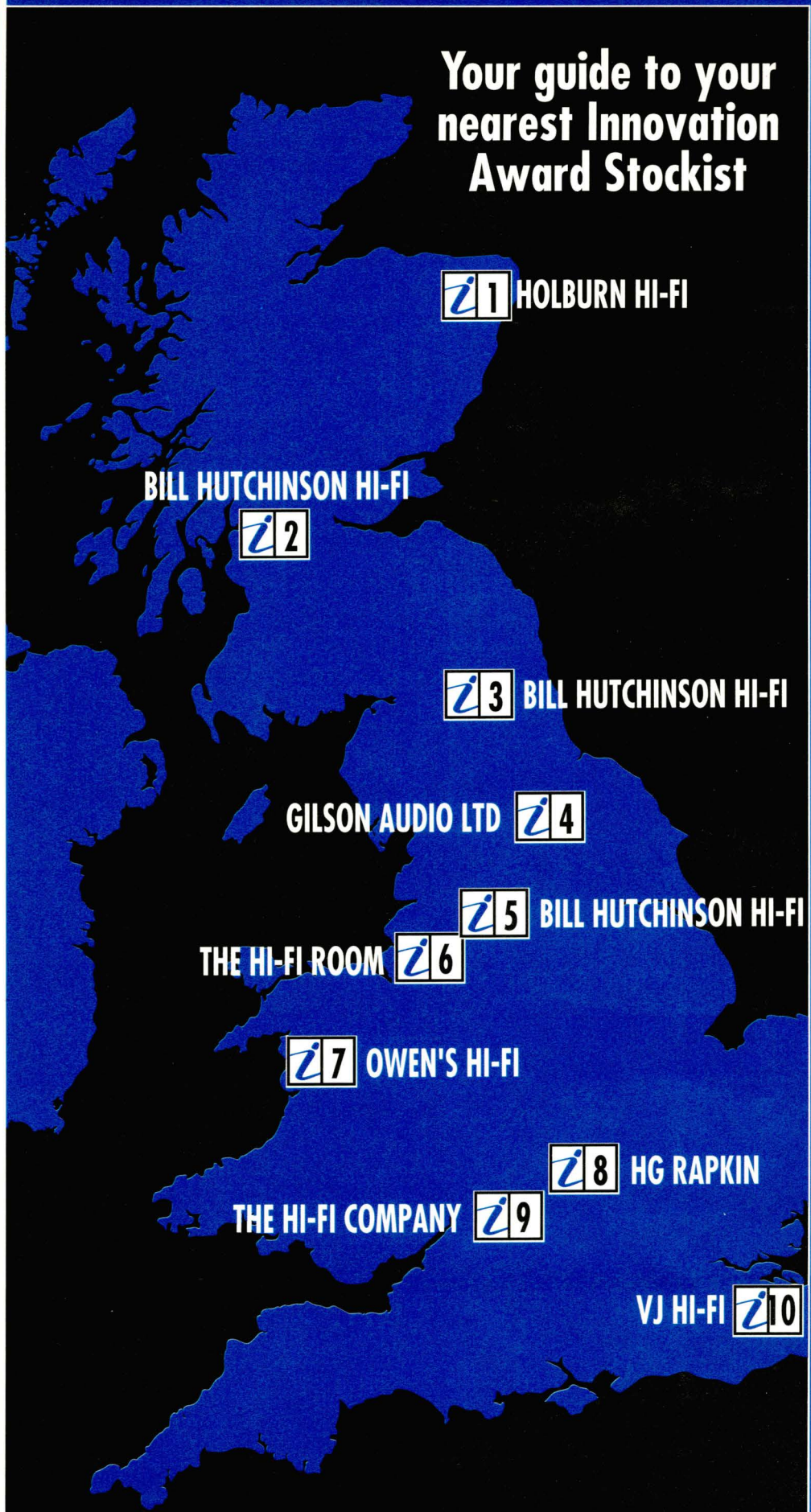
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Model: Purdey

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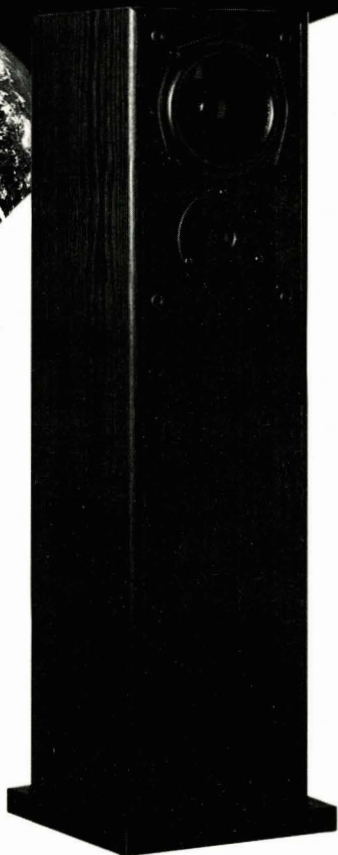
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Model No: 731

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- 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.

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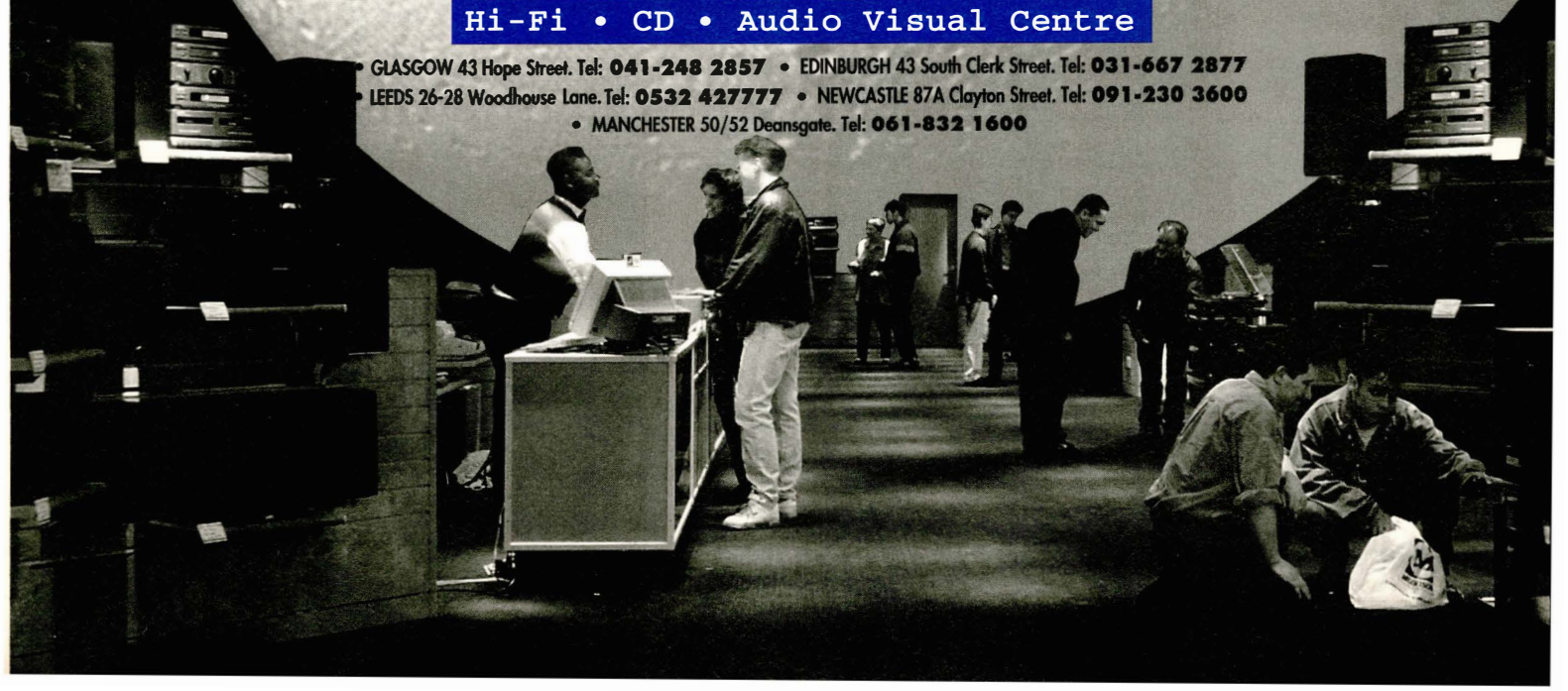
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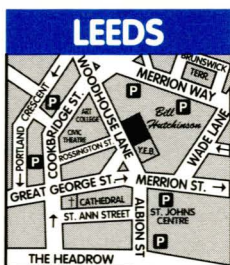
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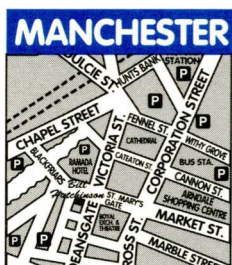
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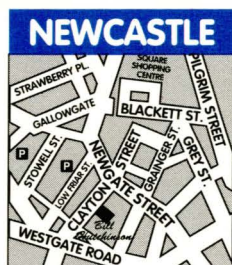
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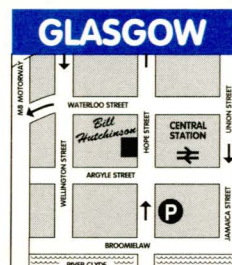
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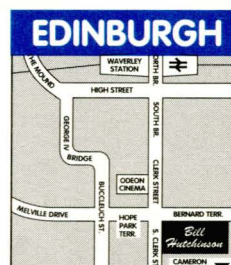
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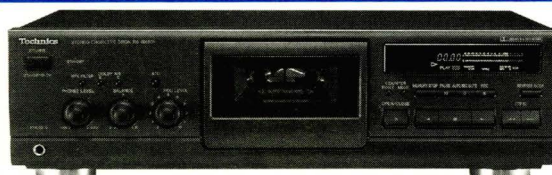
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- DENON DF-10 - CD PLAYER - INNOVATION WINNER '94
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- SONY TV-KVS 3432 - TELEVISION - INNOVATION WINNER '95

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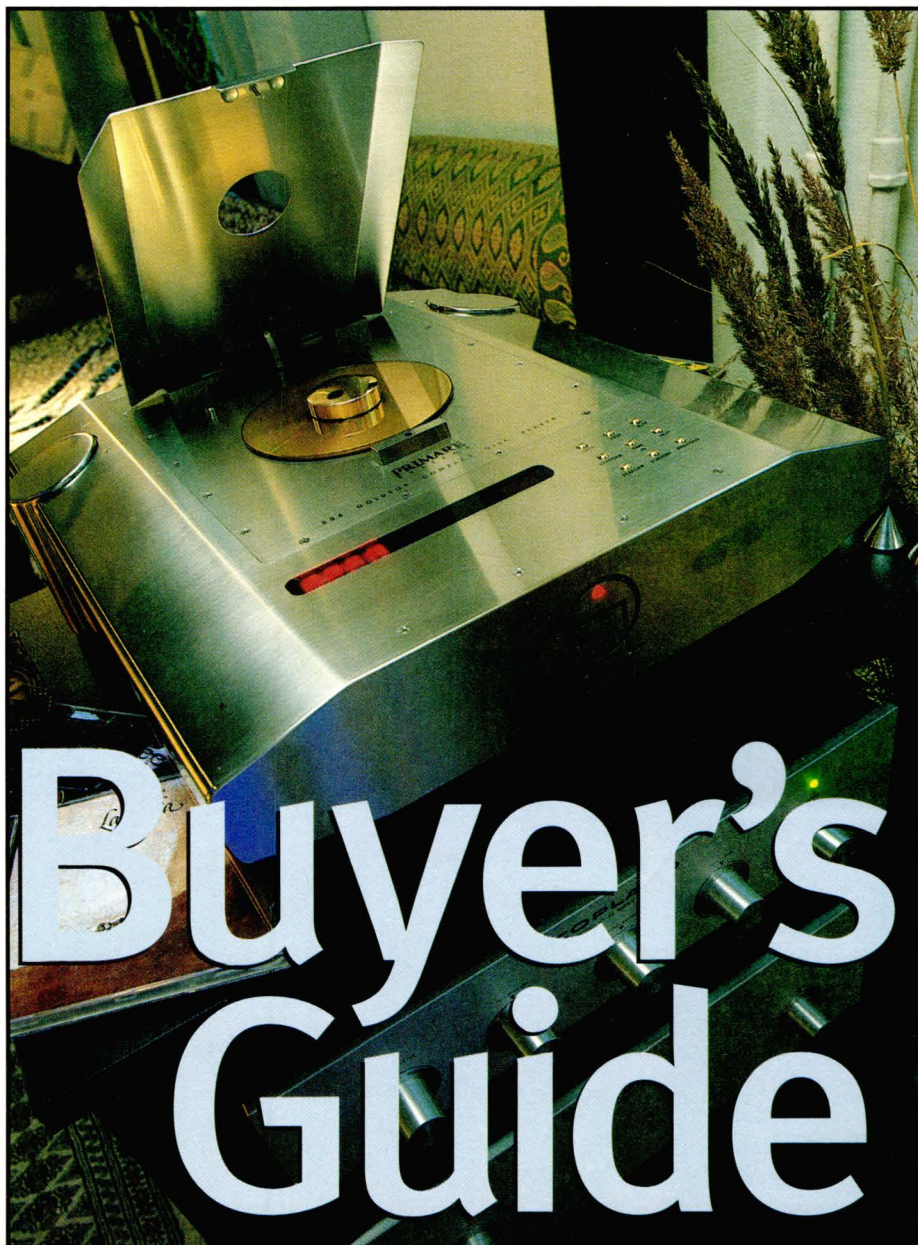
Index

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PRODUCT CATEGORIES

AMPLIFIERS	PAGE 93
CASSETTE DECKS	PAGE 99
CD PLAYERS	PAGE 101
TRANSPORTS	PAGE 103
DACS	PAGE 103
DIGITAL RECORDERS	PAGE 103
HEADPHONES	PAGE 104
LOUDSPEAKERS	PAGE 105
RECEIVERS	PAGE 115
SYSTEMS	PAGE 115
TUNERS	PAGE 117
TURNABLES	PAGE 119
CARTRIDGES	PAGE 119
TONEARMS	PAGE 121
THE DIRECTORY	PAGE 123

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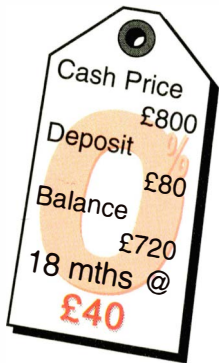
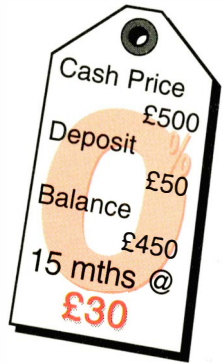
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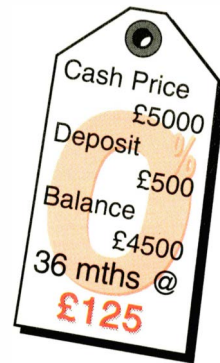
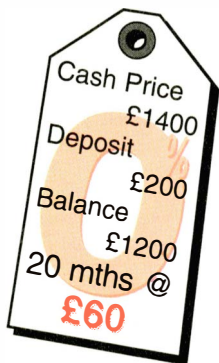
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Key to amplifiers
Price - typical retail, to nearest pound.
Power - output power in watts, per channel, RMS.
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.
A/V - includes Dolby Surround or Pro Logic decoder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

Type: Int - integrated, Pre - preamplifier, Pwr - power amplifier.
Headphone - Y - yes, N - no.
Remote - Y - yes, N - no.
Size - width x height x depth in cm.
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
AMPLIFIERS									
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	120	MM/MC,3L,2T	N	N	21,33,13	Optional phono
Adyton CORDIS 1.6	3399	Pwr	N	50	-	N	N	45,9,35	Stereo power amp
Adyton CORDIS 3B	11950	Pwr	N	290	-	-	-	49,39,43	Reference 2x dual mono
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	N	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	-	-	-	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 Juptor	330	Int	N	30	MM,4L,1T	N	N	-	
Arcam Alpha 5	230	Int	N	40	MM,3L,2T	Y	N	43,8,30	Bypassable tone controls
Arcam Alpha 6	330	Int	N	50	MM,3L,2T	Y	Y	43,8,30	Remote volume facility
Arcam Delta 290P	400	Pwr	N	75	-	Y	N	43,9,30	
Arcam Delta 290	480	Int	N	75	4L,2T	Y	Y	43,9,32	Opt MM/MC phono module
Arcam Delta 110S	520	Pre	N	-	MM/MC,3L,2T	Y	Y	43,7,30	As Delta 110, w/o DAC
Arcam Delta 120.2	550	Pwr	N	100	-	Y	N	43,9,30	Bridgable
Arcam Delta 110	750	Pre	N	-	MM/MC,2L,2T	Y	Y	43,7,30	On-board DAC, 2 inputs
Arion EOS	899	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra	999	Int	N	18	4L,1T	N	N	-	Class A valve
Arion Eros Line	1050	Pre	N	-	4L,1T	N	N	-	Dual mono construction
Arion EOS Export	1099	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra Export	1199	Int	N	18	4L,1T	N	N	-	Class A valve amp
Arion Triton	1250	Pwr	-	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/phone 400	-	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	299	Int	N	35	4L,2T	N	N	43,8,30	
Audio I Alto Chrome	329	Int	N	35	4L,2T	N	N	43,8,30	
Audio Innovation T2	399	Pre	N	-	MC	N	N	12,16,8	MC steppup
Audio Innovation P2	679	Pre	N	-	MM	N	N	50,12,30	Phono stage
Audio Innovation L2	699	Pre	N	-	4L,1T	N	N	50,12,30	
Audio Innovation Ser 800	849	Pwr	N	25	-	-	-	41,15,34	
Audio I Classic 25	899	Int	N	25	4L,1T	N	N	46,15,34	Kit amplifier
Audio Innovation P2MC	899	Pre	N	-	MM/MC	N	N	50,12,30	Phono stage
Audio Innovation Ser 500	999	Int	N	25	MM,3L,2T	N	N	41,15,34	
Audio Innovation Ser 700	999	Int	N	25	4L,1T	N	N	41,15,34	
Audio Innovation 1000	1499	Pwr	N	50	-	-	-	41,15,34	Monoblocks
Audio I First Audio	1549	Pwr	N	7.5	-	-	-	41,15,34	
Audio Innovation 1000SE	2249	Pwr	N	50	-	-	-	41,15,34	Silver circuit board
Audio I 2nd Audio	2999	Pwr	N	15	-	-	-	41,15,34	Monoblocks
Audio Note Ongaku	22411	Int	N	26	6L	N	N	-	Single-ended Class A tube
Audio Note Oto	1250	Int	N	24	MM/MC,4L,1T	N	N	-	
Audio Research LS-3	1599	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research PH-1	1649	Pre	N	-	MM/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	-	-	-	-	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
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

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
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 Sterling II	350	Int	N	60	MM/MC	N	N	43,7,270	Available in chrome
Audiolink P400	467	Pre	N	-	4L	N	N	43,7,270	Available in chrome
Audiolink PR401	583	Pwr	N	100	-	-	-	43,10,37	Available in chrome
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 S2000MI	799	Int	N	100	4L, 1T	-	Y	31,25,9	Includes S2000RC handset
AVI S2000MP	799	Pre	N	-	5L,1T	N	-	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	-	-	-	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	-	-	-	48,13,23	Bridgable, bal & unbalanced
Bryston THX3B	1262	Pwr	Y	150	-	-	-	48,13,23	2 channels, THX approved
Bryston 4B-NRB	1756	Pwr	Y	300	-	-	-	48,13,39	Bridgable, bal & unbalanced
Bryston 7B-NRB	1815	Pwr	Y	500	-	-	-	48,13,39	Single monoblock
Bryston THX4B	1858	Pwr	Y	300	-	-	-	48,13,39	2 channels, THX approved
Bryston THX7B	1917	Pwr	Y	500	-	-	-	48,13,39	1 channel, THX approved
Bryston 8B-NRB	2195	Pwr	Y	150	-	-	-	48,13,39	4 channels, bridgable
Bryston THX8B	2400	Pwr	Y	150	-	-	-	48,13,39	4 channels, THX approved
C.R. Devs Kalypto	499	Int	N	15	5L	-	-	-	
C.R. Devs Romulus	998	Int	N	35	5L	-	-	-	
CAT SL1 Sig line	5500	Pre	N	-	3L,1T	-	-	31,48,14	2 outputs, valve
CAT SL1 Sig phono	6000	Pre	N	-	MM,2L	-	-	31,48,14	2 outputs, valve
CAT JL1	13500	Pwr	N	200	-	-	-	-	
Chimera X-150C	800	Pre	N	-	4L,1T	N	N	-	Balanced CD in, balanced out
Chimera X-80	800	Int	N	80	4L,1T	N	N	-	

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ARCAM	Delta 100 Dolby-S	849
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MARANTZ	SD63 3-Hd	249
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	DR2 3-Head	599
	DR1 3-Head	849
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	KX-VW482 Twin Rec.	249

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ARCAM	Alpha One	299
	Alpha 5 Plus	469
	Delta 270	799
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	DM600i	189
	DM610i	249
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	5	189
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	Coda 8 New	169
	Q30	349
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	633	319
	636	419
	637	499
	638	599
TDL	Near Field Monitor	119
	NFM2	179
	RTL 2	299
	RTL 3	399
YAMAHA	NS 10M	259

RECEIVERS

DENON	DRA265 - 35wpc	199
	DRA365 RDS - 48wpc	249
	DRA545 RDS - 55wpc	319
MARANTZ	SR1010 slimline	299
YAMAHA	RX-385 RDS	269

TURNTABLES

DUAL	CS505 - 4 UK	229
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	TD280-IV inc AT95	199
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	DSP-A970 7 Ch.	799
	DSP-A2070 7 Ch.	1099
Add-on FX Amps		
DENON	AVC-77 3 Ch. Mini	399
YAMAHA	DSP-E200 3Ch.	369
	DSP-E580 5Ch.	449
	DSP-E1000 5Ch.	669
Shielded Centre-Channel Speakers		
B & W	2000 IFS Centre	99
MISSION	735 Satellite	99
	73C Centre	149
	73PS Subwoofer	179
YAMAHA	NS-C80 Centre	99
	NS-CL10 Centre	149
	NS-E80 Rear - Flat	119
Active Sub Woofers		
REL	Srtrata	495
YAMAHA	YST-SW60	199
	YST-SW120	299
	YST-SW200	399

ACCESSORIES

SENNHEISER HEADPHONES		
HD 435		24.95
HD 320		39.95
HD 330		59.95
HD 340		69.95
HD 535		89.95
HD 545		109.95
HD 565		129.95
HD 265		129.95
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IS 550 Infra Red		149.95
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Jade - New 1 metre		29.95
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F14 solid 4 core flat		1.95
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Type 4 4 spiral 4 core		4.95
Chord Company		
Cobra Interconnect 1 metre		49.95
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Cable Talk 3 - Standard		2.25
Bi-Wire -		4.50
QED Qudos OFC/PTFE		2.00
Mission Quartet Bi-wire		7.95
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In Six Colours-Red-Black-Green-Blue(2)-Grey		199.00
X050 / X053 3 leg 4 shelf		209.00
X101 4 leg 4 shelf		
TARGET STANDS		
TR30 / TR40 / TR50		65.00
TR60 / TR70		65.00
HS8 / HS12 / HS16		75.00
HS20 / HS24 / HS28		77.95
HJ10 / HJ15		130.00
HJ17 / HJ20		120.00
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TT4sa Flat Pack		120.00
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AMPLIFIERS									
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 MNP002	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	-	-	N	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	N	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	3550	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	Bridgeable
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	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	N	-	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
Electrocompanion 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
Electrocompanion EC-3M	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
Electrocompanion 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 AW100DMF	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
Electrocompanion EC1-1	2100	Int	N	100	5L,2T	N	N	45,13,36	High current (80A)
Electro AW100DMB-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 AW250DMB	3620	Pwr	N	250	-	-	-	48,22,45	High current (100A)
Electro AW250DMB-SF	3980	Pwr	N	250	-	-	-	48,45,22	High current stereo
Electrocompanion AW180MB4200	3980	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
Fullers A10	1200	Pwr	-	10	-	-	-	44,13,30	Single ended Class A
Gamma Phonostage	599	Pre	N	-	-	-	-	14,14,30	Add on for Gamma preamps
Gamma Acoustics ERA	1999	Pre	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	

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AMPLIFIERS									
Gamma Acoustics Rhythm	4999	Pwr	N	25	-	-	N	38,30,53	Single ended Class A
Gamma Acoustics Aeon	6999	Pwr	N	30	-	-	N	29,21,53	Single ended Class A, mono
Gamma Aeon Signature	8999	Pwr	N	30	-	-	N	29,21,53	Single ended Class A, mono
Gamma Space Signature	19999	Pwr	N	18	-	-	N	44,21,53	Single ended Class A, mono
Gamma Era Signature	20000	Pre	N	-	-	-	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 V1	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	-	-	N	N	Triode switchable (15w)
Harman-Kardon HK6250	279	Int	N	33	MM,3L,2T	N	N	45,11,37	
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 HK6350	399	Int	N	25	MM,6L,2T	Y	Y	45,11,37	
Harman-Kardon HK6550	429	Int	N	60	MM/MC,3L,2T	Y	N	45,14,37	
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 HK6650	749	Int	Y	70	MM/MC,4L,2T	Y	Y	45,14,37	Video circuitry
Harman-Kardon HK6850	899	Int	Y	85	MM/MC,4L,2T	Y	N	45,16,40	Video circuitry
Harman-Kardon PA2400	899	Pwr	-	120	-	-	-	45,16,41	
Harman-Kardon HK6950	1299	Int	Y	120	MM/MC5L,2T	Y	Y	45,16,40	Video circuitry
Heybrook Integra	555	Int	N	75	MM/MC	Y	N	77,44,30	
Heybrook SIG C/P	649	Pre	N	-	MM/MC5L,2T	N	N	-	
Heybrook SIG MNEX	698	Pwr	-	140	-	-	-	-	Mono, uses 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	-	-	-	43,8,22	Two inputs
Inca Tech Oberon	450	Int	N	-	MM/MC,				



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AMPLIFIERS									
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	Works as pre/int multi room
Linn LK100	549	Pwr	N	50	-	-	-	32,8,33	Stero as
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	-	-	36,46,6	Passive, bolts to ST70
Lumley Reference PP40	325	Pre	N	-	6L,1T	-	-	29,40,6	Bolts to ST40
Lumley Reference PP1	325	Pre	N	-	6L,1T	-	-	29,44,6	Passive, stand alone
Lumley Reference LV1	1000	Pre	N	-	6L,1T	N	N	29,44,6	Active valve circuit
Lumley Reference ST40	1250	Pwr	N	40	30,40,17	N	N	-	Pentode
Lumley Reference PV1	1500	Pre	N	-	MM,5L,1T	N	N	-	Phono version of LV1
Lumley Reference ST70	1950	Pwr	N	70	-	N	N	36,46,18	Switchable triode/pentode
Lumley Reference M120	3200	Pwr	N	120	-	-	-	29,44,18	2xmono, triode/pentode
Lumley Reference M500	12000	Pwr	N	-	-	-	-	35,80,30	2xmono, triode/pentode
Luxman 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	Multi-ophile 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	995	Int	N	40	MM/MC,3L,1T	N	N	40,7,40	-
Metaxas Charisma	1095	Pre	N	-	MM/MC,3L,2T	-	-	36,6,29	Separate PSU
Michell Iso	412	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Argo	715	Pre	N	-	3L,1T	N	N	33,7,19	2 pairs outputs
Michell Iso HR	879	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Alecto Stereo	1150	Pwr	N	50	-	-	-	32,20,36	-
Michell Argo HR	1339	Pre	N	-	3L,1T	N	N	36,8,22	2 pairs outputs
Michell Alecto Mono	1989	Pwr	N	100	-	-	-	32,20,36	-
Michi RHC-10	795	Pre	N	-	5L	-	-	47,8,34	Passive
Michi RHB-05	995	Pwr	N	100	-	-	-	47,8,36	-
Michi RHO-10	995	Pre	N	-	MM,MC	-	-	47,8,34	Phono equaliser
Michi RHA-10	995	Pre	N	-	5L	-	-	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

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Mission PSX-R	300	-	N	-	-	N	N	22,8,36	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, ext PSU
Monrio Primus	895	Pre	N	-	6L,1T	N	N	-	Line only preamp
Monrio MC-200S	950	Int	N	60	6L,1T	N	N	-	Simplified version of MC-20S
Monrio MC-25	995	Pwr	N	80	-	-	-	-	Dual mono construction
Monrio MC-205	1595	Int	N	80	6L,1T	N	N	-	Inc pre-out sockets
Monrio Cento HP	1695	Pwr	N	135	-	-	-	-	Dual mono, high current
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	49,13,38	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	189	Int	N	25	MM,3L,2T	Y	N	-	-
NAD Monitor 1000	229	Pre	N	-	MM/MC,3L,2T	Y	N	-	-
NAD 304	249	Int	N	35	MM,4L,2T	Y	N	-	-
NAD Monitor 1000S	349	Pre	N	-	MM/MC,3L,2T	Y	N	-	-
NAD 306	349	Int	N	50	MM,4L,2T	Y	N	-	-
NAD Monitor 208	999	Pwr	N	250	-	-	-	-	THX approved
Naim NAP90/3	416	Pwr	N	30	-	-	-	32,56,30	Latest style. Suits 92
Naim NAC92	435	Pre	N	-	5 (L or T)	N	N	44,56,30	Latest style. Suits 90/3
Naim NAC72	670	Pre	N	-	2MM/MC, L,2T	N	N	21,76,30	Upgradable with PSU, MC I/P
Naim NAP140	699	Pwr	N	45	-	-	-	21,76,30	-

Products include:

Valve Amplifiers by:

Tube Technology EAR, D.D. Audio, Conrad Johnson, Lumley Reference, Audio Innovations, Hi Fi World Kits.

Amplifiers by:

Musical Fidelity, Kinshaw, Quad, Alchemist, Denon, Orelle, Albarry, Pioneer, John Shearne.

Loudspeakers by:

Monitor Audio, ProAc, System, Spendor, Tannoy, Celestion, Castle, Triangle, KEF, UKD.

Digital by:

Pink Triangle, Quad, Sony, DPA, Audio Alchemy, Pioneer, Orelle, Musical Fidelity, Micromega, Kinshaw, QED, Marantz, Sugden, TEAC.

Analogue Replay by:

Pink Triangle, Systemdek, Alphason, Thorens, Townsend.

Cassette Decks by:

Yamaha, Sony, Marantz, Nakamichi, Aiwa, Denon.

Accessories:

Gold Aero Tubes, QED, Audioquest, Vandenhul

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

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



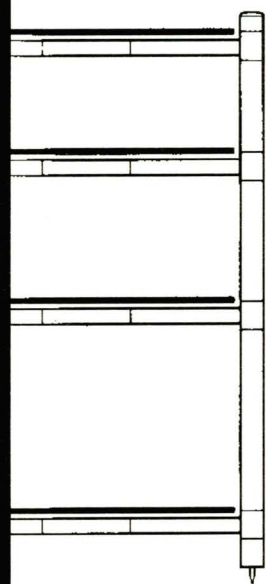
Key to cassette decks
Price - typical retail, to nearest pound.
Type - T - twin transports, allowing tape to tape dubbing, sequential play etc.; S - Single transport, AR - auto-reverse.
Dolby - B (90dB noise reduction), C (20dB), S (24dB). B is standard for prerecorded material.

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
AMPLIFIERS									
Pioneer A-303R	200	Int	N	45	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-300X	230	Int	N	40	MM,3L,2T	N	N	42,13,36	
Pioneer A-400	280	Int	N	60	MM/MC,3L,2T	Y	N	42,13,36	
Pioneer A-400X	300	Int	N	50	MM/MC,4,2	Y	N	42,13,36	
Pioneer A-503R	300	Int	N	70	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-602	350	Int	N	80	MM/MC,3L,3T	Y	N	42,17,44	
Pioneer VSA-701S	500	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic
Pioneer VSA-D802S	600	Int	Y	55	MM,2L,2T,5V	Y	Y	42,17,42	Dolby Pro Logic, DSP
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	-	120	-	-	-	42,15,35	
PS Audio 200 Delta	2279	Pwr	-	200	-	-	-	42,15,45	
PS Audio 200b Delta	2490	Pwr	-	200	-	-	-	42,15,45	
PS Audio 250 Delta	2980	Pwr	-	250	-	-	-	42,15,45	Monoblocks
QED Vector One	199	Pre	N	-	4L,1T	N	N	-	
QED Vector Reference	299	Pre	N	-	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	-	N	N	33,14,24	Stereo power amp
Quad 66	863	Pre	N	35	MM,4L,2T	N	Y	33,8,26	Variable inputs, inc R/C
Rega Brio	229	Int	N	30	MM,3L,1T	N	N	43,7,15	
Rega Elex	398	Int	N	50	MM,3L,1T	N	N	43,7,25	
Rega Elicit	730	Int	N	70	MM,MC,3L,1T	N	N	43,7,25	Full dual mono
Roksan ROK-L2.5	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-X317Z	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,4L,3T	Y	Y	-	Built in BS DAC
Sentec PP9 RIAA MM	500	Pre	N	-	MM	N	N	5,12,23	Phono step-up - MM
Sentec PP9 RIAA MC	600	Pre	N	-	MC	N	N	5,12,23	Phono step-up - MC
Sentec SC9	800	Pre	N	-	4L,2T	Y	N	34,7,15	
Sentec PA9	1000	Pwr	N	60	-	-	-	20,8,30	Monoblocks
Shearpe Phase II	549	Int	N	50	4L,2T	N	N	-	
Shearpe Phase 1 Pre	1099	Pre	N	-	MM/MC/4L,2T	N	N	-	
Shearpe Phase 1 Power	1199	Pwr	-	80	-	-	-	-	Dual mono
Sherwood AI 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 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
Stemfort Audio SF60	549	Int	N	60	4L,1T	N	N	43,8,35	Passive line amplifier
Stemfort Audio SF100	849	Int	N	100	4L,1T	N	N	43,8,40	Passive line amplifier
Synergy 3080	0	N	15	MM	N	N	-	-	
Teac A-X1030	180	Int	N	40	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X3030	220	Int	N	60	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X5030	260	Int	N	75	MM/MC,3L,2T	Y	N	44,16,36	
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	90	MC/MM,3L,2T	N	Y	43,14,37	Virtual Battery operation
Technics SU-C2000	700	Pre	N	-	-	N	Y	45,13,35	Rotary resistor attenuator
Technics SE-A2000	1050	Pwr	-	100	-	-	Y	45,19,44	Meters, R-Core, MOS AA
Tesseract TAADA	1500	Pre	N	-	MM/MC	N	N	-	
Tesseract TALA	1500	Pre	N	-	5L,1T	N	N	-	
Tesseract TAHA	1800	Pre	N	-	MC	Y	N	-	
Tesseract TAP-A	5300	Pre	N	-	MM,3L,2T	N	N	-	
Tesseract TAMP-60	7350	Pwr	-	60	-	-	-	-	2x Monoblocks
Thorens TIP2000	500	Pre	N	-	MM/MC,4L	N	N	-	Minimalist, shoebox form
Thorens TTA2000	550	Pwr	N	35	-	-	-	-	neo-Class A
Thorens TRP3000	1500	PRE	N	-	MM/MC	-	-	-	Phono stepup
Thorens TRA3000	2000	PWR	N	90	-	-	-	-	

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
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 Unisus 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 Unisus Super Line	1399	Int	N	30	4L,1T	N	N	35,17,27	Line level version of Unisus
Tube Tech Unisus	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 Phono Simply495	Pre	N	-	-	MM/MC	N	N	-	For Simply series
Unison Research Simply Four995	Int	N	12	4L,1T	N	N	-	-	Single ended triode Class A
Unison Research Simply Four1545	Int	N	11	4L,1T	N	N	-	-	Single ended triode Class A
Unison Research Smart 8	52995	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	-	40	-	-	-	-	
Woodside SC27 MC	999	Pre	N	-	MC,2L,1T	N	N	-	
Woodside MA50 Class A	1224	Pwr	-	50	-	-	-	-	1 channel monoblock
Woodside STA35	1323	Pwr	-	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	-	45	-	-	-	43,9,33	
YBA Integre	1199	Int	N	45	MM,4L,1T	N	N	43,9,33	
YBA 3	1250	Pre	N	-	MM,3L,1T	N	N	43,9,33	
YBA 2	1699	Pre	N	-	MM,3L,1T	N	N	43,9,33	
YBA 2 Power	2150	Pwr	-	70	-	-	-	43,9,33	
YBA 1	3750	Pre	N	-	MC,4L,1T	N	N	43,9,33	
YBA 1 Power	4250	Pwr	-	85	-	-	-	43,14,33	
CASSETTE DECKS									
Aiwa AD-F450	120	S	B,C	Y	2	-	-	-	Super DX head
Aiwa AD-WX727	170	T	B,C	Y	2	-	-	-	Twin auto-reverse
Aiwa AD-F850	230	S	B,C	Y	3	-	-	-	Super DX head, twin capstan
Aiwa AD-S950	300	S	B,C,S	Y	3	-	-	-	Dual capstan, remote control
Arcam Delta 100	899	S	B,C,S	N	3	43,12,34	-	-	Dolby S, designed & made in UK
Denon DRM-540	160	S	B,C	Y	2	44,13,28	-	-	
Denon DRS-640	200	S	B,C	Y	2	44,13,31	-	-	Drawer loading
Denon DRW-760	250	T	B,C	Y	2	44,13,28	-	-	
Denon DRM-740	260	S	B,C	Y	3	44,13,28	-	-	Dual capstan
Denon DRS-810	300	S	B,C	Y	3	44,13,32	-	-	
Dual CC8000 RS	200	T	B,C	N	2	44,13,25	-	-	Remote via 9000RS
Goodmans Delta 700	100	T	B	N	2	36,13,28	-	-	
Goodmans GSW650	130	T	B	N	2	42,12,27	-	-	Both auto-reverse
Grundig CCF210	150	T,AR	B	N	2	36,12,30	-	-	AMS, CD copy, hi speed dub
Grundig CCF2	170	T	B	N	2	44,13,30	-	-	AMS, remote, display off
Grundig CCF310	190	T,AR	B,C	Y	2	36,12,30	-	-	Elapsed time, CD copy, AMS
Grundig CCF3	200	T,AR	B,C	Y	2	44,13,30	-	-	Elapsed time, display switch
Grundig CF4	250	S	B,C	Y	3	44,13,30	-	-	Manual bias, AMS, monitor
Harman-Kardon TD4200	280	T	B,C	N	2	45,13,35	-	-	
Harman-Kardon TD4400	349	S	B/C	Y	2	45,13,35	-	-	
Harman-Kardon TD4500	499	S	B/C	Y	2	45,13,35	-	-	
Harman-Kardon DC5500	599	T	B,C	Y	2	45,13,35	-	-	
Harman-Kardon TD4600	699	S	B,C,S	Y	2	45,13,35	-	-	
Harman-Kardon DC5700	699	T	B,C	Y	2	45,13,35	-	-</	

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Key to cassette decks
Price - typical retail, to nearest pound.
Type - 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), 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	Type	Dolby NR	HX Pro	Heads	Size	Special
CASSETTE DECKS							
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 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/ctrl
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 V-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
CD PLAYERS						
Aiwa XC-300	150	1bit	0	Y	-	
Aiwa DX-M100	150	1bit	0	Y	-	Midi size
AMC CD6	349	BS	E,0	Y	-	
ARC CD1	3278	-	-	Y	-	'Bit String' conversion
Arcam Alpha One	300	DS	E	Y	43,8,29	
Arcam Alpha 5 Plus	470	MB	E	Y	43,8,27	Upgradable DAC, display off
Arcam Delta 270	800	Hybrid	2E	-	43,9,28	Convertible to 250 transport
Audio Innovation Alto	299	-	-	-	43,8,30	
Audio I Alto Chrome	329	-	-	-	43,8,30	
Audiomeca Kreatura	1299	-	E,0	Y	25,14,39	
Audiomeca Kreature SE	1450	MB	E	Y	25,14,39	Trichord clocked
Aura CD50	400	BS	E	Y	43,7,34	Chrome finish £50 extra
AVI S2000 MCII	799	BS	-	-	31,25,9	Low noise clock system
AVI S2000MC	1149	MB	E	Y	31,25,9	20 bit Burr Brown DACs
Cams CD200 Mk II	150	1bit	-	Y	42,9,29	
Cambridge Audio CD200	150	MB	N	Y	42,9,29	Can play in reverse order
Denon DCD-615	180	MB	E	Y	44,11,29	Digital attenuator
Denon DCD-825	220	MB	E	Y	44,11,28	UK design
Denon DCD-1015	300	MB	E,0	Y	44,11,28	Alpha processor
DPA Renaissance	895	MB	E,0	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	-	

Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
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,0	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,0	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-5060	250	1bit	0	Y	44,12,31	D.R.I.V.E.
Kenwood DP-7060	380	1bit	0	Y	44,12,31	D.R.I.V.E
Kenwood DP-J2070	600	1bit	-	Y	44,19,38	100 disc autochanger
Krell KPS20i	3278	-	E	Y	-	Balanced out, Bit String conv
Krell CD-DSP Mk II	5000	-	-	Y	42,13,28	Digital inputs facility
Krell CD DSPiI 5000	5000	MB	2E	Y	42,13,28	Has digital in, balanced out
Krell KSP20i	9950	-	E	Y	-	Balanced out, top loader
Linn Mimik	798	DS	E	Y	32,8,33	BNC digital
Linn Karik	1497	DS	E,0	Y	32,8,33	BNC digital
Luxman D-322	200	MB	-	Y	44,10,28	18bit, 8x oversampling
Luxman D-373	600	MB	0	Y	44,11,35	System bus remote
Luxman D500X's	3750	MB	0	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,0	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,0	Y	42,12,28	As CD-52, 4V output
Marantz CD-10	1200	BS	E,0	Y	46,14,36	Twin DAC-7, heavy build
McIntosh MCD7008	1995	MB	E	Y	-	Seven disc multiplayer
Meridian 506	795	DS	E,0	N	33,9,34	Recently improved sound
Meridian 606	1350	1bit	3E,0	N	-	
Meridian 508	1350	DS	E,0	N	33,9,34	
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 Disc/Dacmaster	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,0	Y	49,12,33	XLR balanced out, tube o/p sta
NAD 501	189	BS	-	N	-	
NAD 502	239	M	E	Y	-	
NAD 517	400	BS	E	Y	44,108,40	5-disc carousel player
Naim CD3	949	MB	-	Y	32,6,30	1 box
Naim CD1	1997	MB	-	Y	43,16,30	One box
Naim CD5	3642	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	MB	E	Y	43,9,38	6+1 Music Bank, 18 x 8 o/s
Nakamichi MB1s	900	MB	E	Y	43,9,27	6+1 Music Bank, 20 x 8 o/s
NVA CD Tube	1100	1bit	E	Y	-	
NVA T.E.S.	2000	BS	E	Y	-	
NVA T.T.S.	3200	BS	E	Y	-	
NVA T.L.S.	3300	BS	E	Y	-	
Onix CD33	999	BS	-	-	43,8,33	DAC7
Onkyo DX710	200	1bit	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 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 CD745	199	BS	E	Y	-	Multi-disc tray
Philips CD750	199	BS	E	Y	-	Selected BS DAC, differential
Pioneer PD-77	100	1-bit	E,0	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 & rem
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,0	Y	42,13,33	SPM, Legato Link, Twin DAC
Pioneer PD-TM3	500	1-bit	-	Y	42,18,35	Triple magazine, 18-disc

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Key to compact disc players, transports and DACs
 Price - typical retail, to nearest pound.
 DAC Type - MB - multibit, 1 bit - single bit, BS - Bitstream, DS - Delta Sigma, M - MASH, Hybrid - combines multibit and single bit
 Outputs Digital: Opt - optical (usually Toslink), El - electrical (usually coaxial S/PDIF).
 Remote Control - Y - yes, N - No.
 Size - width x height x depth in cm.
 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
CD PLAYERS						
Pioneer PD-F100	600	1bit	-	Y	42,19,40	100 disc, Legato Link
Pioneer PD-95	2500	1-bit	E,0	Y	44,16,34	Balanced out, Legato, SPM
Quad CD67	825	DS	E	Y	33,8,26	
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,0	Y	-	
Sansui CD-X617	350	BS	E,0	Y	-	
Sentec Diana	1100	MB	E,0	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	Midi-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	Midi 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,0	Y	45,15,34	Twin BS
Teac VRDS-10	770	BS	E,0	Y	45,15,34	Twin DAC7, balanced output
Teac VRDS-20	1299	BS	E,0	-	50,15,34	Twin DAC7, balanced output
Teac X-1	2500	MB	-	Y	46,14,40	Balanced out, 4x20bit
Teac X-1S	3500	MB	0	Y	46,14,40	Balanced out, 4x 20bit
Technics SL-PG360A	140	M	N	Y	43,10,29	Remote control capable
Technics SL-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,0	Y	-	
Yamaha CDC-635	300	BS	-	Y	-	
Yamaha CDX870	330	BS	0	Y	-	
Yamaha CDX-1000	599	BS	E,0	Y	-	
YBA 2	2999	MB	E,0	Y	43,10,33	Outboard power supply

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD TRANSPORTS						
Arcam Delta 250	750	-	2E,0	Y	43,9,28	BNC out. Has sync lock input
ATD Drive 1	3499	-	E,0	Y	44,9,34	Top load, 2-box acrylic
Audiolab 8000CDM	1300	-	E,0	Y	45,8,36	Precision master clock
Audiomeca Damnation	950	-	E,0	Y	29,10,32	
Audiomeca Kreatura	1199	-	E,0	Y	25,14,39	Heavily modified CDM
Audiomeca Mephisto	2100	-	E,0	Y	43,15,33	Integral platter, layer suspen
Counterpoint DA-11E	1495	-	E,0	Y	-	
DPA Enlightenment	635	-	-	Y	40,28,8	Clock locks to DPA DACs
Jadis JCDT	8000	-	-	Y	-	Top load
Krell MD-20	4999	-	E,20	Y	42,13,28	Top load, AT&T optical out
Krell MD-10	7990	-	2E,0	Y	42,13,28	
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	-	-	Y	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,0	Y	44,15,33	VRDS mechanism
Teac P-700	899	-	E,0	Y	23,14,40	Half width, anti-resonance cha
Teac P-2	3499	-	E,0	Y	23,14,49	
Teac P-2S	4299	-	E,0	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,0	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	



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	Inputs Dig	Remote	Size	Special
D/A CONVERTERS						
Arcam Black Box 50	450	Hybrid	E,0	N	43,7,28	Two inputs, sync lock
Arcam Black Box 500	750	BS	E,0	Y	43,9,28	7 inputs, sync-lock
Audio Alchemy DAC-in-the-box200	399	MB	E	-	-	
Audio Alchemy DDEV1.1	399	BS	E,0	-	-	Upgradable external PSU
Audio Note DAC1	600	MB	E,0	Y	-	
Audio Note DAC3	1650	MB	E/O	Y	-	
Audio Research DAC2	3940	MB	-	-	48,14,26	20bit, 8x o/s
Audiolab 8000DAC	800	BS	-	-	45,8,36	Balanced AES/EBU input
Audiomeca Elixir	745	BS	E,0	Y	25,39,9	
AVI S2000MD	549	MB	-	-	31,25,9	16 bit, optical & elec i/p
Beard DAP-2 DAC	999	BS	E,0	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	BS	-	-	-	DACCARD for DA-10E
Counterpoint UA20	995	MB	-	-	-	DACCARD for DA-10E
Counterpoint DA-11E	1495	-	E,0	Y	49,6,27	Optional AT&T & AES/UBU balanc
Counterpoint DA-10E	1675	-	E,0	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
LFD 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,0	Y	26,15,45	External PSU, 20 bit
Micromega Microdac	349	BS	E,0	-	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,0	-	23,8,35	Interchangeable DAC & filter
Pink Triangle DaCapo	1450	BS	E,0	-	46,8,35	Unique discrete DAC
Pink Triangle DC	1500	-	-	-	46,8,35	Massive battery PSU for DaCapo
PS Audio DigLink II	688	MB	-	-	38,8,16	
PS Audio SuperLink 2	1230	MB	-	-	38,8,16	
PS Audio UltraLink 2	2650	MB	-	-	38,6,20	AT&T input option
PS Audio Ref Link	5490	MB	-	-	38,8,36	AT&T input
QED Positron	89	-	-	-	-	Upgrade PSU for Digit
QED Digit Plus	139	BS	E	N	-	
QED Digit Reference	299	BS	-	-	-	Combined 2x Positron/Digit
Roksan ATT-DA2	549	DS	-	N	22,10,33	DAC 4 inputs, optional AT&T
Sentec Diana	993	MB	E,0	-	-	
Teac D-700	599	MB	E,0	-	23,14,40	Matches P-700, 4x20bit
Teac D-2	2499	MB	-	-	23,14,49	18 bit, balanced output
Theta Pro-Prime II	1800	BS	E	-	42,5,23	
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,0	N	-	Balanced and AT&T input
Wadia 15	3790	MB	E,0	Y	35,9,41	Software upgradable
Wadia 64.4	4750	MB	E,0	N	35,8,28	Balanced output
Wadia 9	12790	MB	E,0	Y	44,9,36	Digital volume, separate PSU
Woodside DAC2	509	MB	E,0	-	-	
Woodside DAC1	909	MB	E,0	-	-	

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
DIGITAL RECORDERS						
JVC XM-D1BK	900	MD	E,0	E,0	BS	18,5,13
Marantz DD-82	199	DCC	E,0	E,0	MB/BS	42,15,34 DAC7 output
Meridian CDR	4500	CD-R	E,0	E	BS in/	-
Nakamichi 10007	0	DAT	E,0	E,0	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,0	E	MB	- Turbodrivel mech, 18 bit
Pioneer D-05	800	DAT	-	-	-	- 96kHz sampling
Pioneer D-07	1150	DAT	E,0	E,0	-	44,14,38 96kHz record, Legato Link
Sharp MD-M11E	450	MD	-	Y	-	8,3,11 Recorder, title generator
Sony MBS501	800	MD	E,0	E,0	BS	43,9,35 Sample rate converter
Sony DTC80ES	800	DAT	E,0	E,0	BS	43,11,55 SBM
Technics RS-DC8	400	DCC	E,0	E,0	BS	43,12,35 Title input capable

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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Weight - without cable.
Impedance - in ohms.
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Aiwa HP-V141	7	Ear	5	16	Bass resonator ducts
Aiwa HP-A160	7	Opn	45	32	Banded, 3.5/6.3mm
Aiwa HP-JB33	8	Opn	18	16	Vertical ear fit, ultra light
Aiwa HP-V143	9	Ear	5	16	Bass resonator ducts
Aiwa HP-A260	9	Opn	54	32	Banded, bass resonator ducts
Aiwa HP-V145	10	Ear	5	16	Carrying case included
Aiwa HP-V147	10	Ear	5	16	Bass resonator ducts
Aiwa HP-X201	13	Slid	230	-	Dual plug
Aiwa HP-A360	13	Opn	65	40	Banded, bass resonator ducts
Aiwa HP-X301	20	Slid	230	-	3m lead, dual plug
Aiwa HP-VX303	25	Slid	230	-	In-line controls, dual plugs
Aiwa HP-X705	40	Slid	130	-	Dual plug, 2m ext cable
AKG K2	23	Opn	70	200	Mini
AKG K33	25	Opn	90	50	
AKG K44	42	Opn	90	50	
AKG K135	46	Opn	160	150	
AKG K141	74	Opn	225	600	
AKG K240 Monitor	82	Opn	240	600	
AKG K270	112	Slid	250	75	
AKG K280 Parabolic	117	Opn	250	75	
AKG K400	118	Opn	250	120	
AKG K270 Studio	121	Slid	250	75	
AKG K500	138	Opn	250	120	
AKG K340	191	Opn	380	400	
AKG K1000	646	Opn	270	120	
Audio Technica ATH-309	36	Opn	140	30	
Audio Technica ATH-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-900	245	Opn	240	32	
Beyer DT211	33	Opn	120	40	
Beyer DT311	49	Opn	124	40	
Beyer DT331	59	Opn	210	40	
Beyer DT411	69	Opn	120	250	
Beyer DT431	89	Opn	210	40	
Beyer DT511	99	Opn	200	250	
Beyer DT531	129	Opn	245	250	
Beyer DT100	135	Slid	350	600	Choice of impedances
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	Cordless infra-red
Beyer DT990 Pro	199	Opn	230	600	
Beyer DT901	199	Slid	280	250	
Beyer DT911	219	Opn	275	250	
Grado Prestige SR60	90	Opn	-	40	
Grado Prestige SR80	125	Opn	-	40	
Grado Prestige SR100	175	Opn	-	40	
Grado Prestige SR200	230	Opn	-	40	
Grado Prestige SR300	320	Opn	-	40	
Grado Signature HP3	410	Opn	-	40	
Grado Signature HP2	510	Opn	-	40	
Grado Signature HP1	615	Opn	-	40	
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
Maxell EB-125	4	Ear	15	32	Stereo ear buds
Maxell HP-100	4	Ear	3	32	Replacable pads, 1m lead
Maxell HP-200	5	Opn	30	32	Replacable 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



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Weight - without cable.
Impedance - in ohms.
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
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 RH-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-252	7	Slid	155	8	Stereo/mono
Ross RMH-500CD	9	Opn	48	16	Lightweight
Ross RH-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 RH-550	10	Ear	5	16	Inner ear, with volume control
Ross RH-460CD	12	Ear	16	16	Vertical inner ear, volume pot
Ross RDH-200CD	13	Slid	150	8	Closed back
Ross RDH-100CD	15	Slid	144	8	CD headphone
Ross RDH-300CD	17	Slid	155	8	CD headphone
Ross RDH-400CD	22	Slid	186	8	Digital headphone
Sennheiser HD16	10	Opn	45	32	Mini, 1.2m lead, dual plug
Sennheiser HD36	13	Opn	62	32	Mini, 1.2m lead, dual plug
Sennheiser HD56	15	Opn	72	32	Mini, 1.2m lead, dual plug
Sennheiser Vegas	28	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser Manhattan	28	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser HD60TV	38	Opn	118	32	6.8m lead (inc vol control)
Sennheiser HD440 II	38	Opn	125	60	3m lead, 3.5/6.3mm
Sennheiser HD414 Classic	50	Opn	-	-	Limited edition HD414
Sennheiser HD465	65	Opn	-	-	3m lead, 3.5/6.3mm
Sennheiser HD475	75	Opn	-	-	Single sided cable
Sennheiser HD25 SP	85	Slid	115	85	Monitoring headphone
Sennheiser HD535	100	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD545 Reference	110	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD565 Ovalon	140	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD265 Linear	140	Slid	260	150	Closed back
Sennheiser IS450	150	-	160	-	Infra-red cordless - hi-fi
Sennheiser HD25	155	Slid	140	70	Professional, closed back
Sennheiser IS550	180	-	170	-	Infra-red cordless
Sennheiser Charleston	225	Opn	210	140	3m lead, dual plug, leather tr
Sennheiser HD580 Jubilee	230	Opn	-	-	Limited edition HD580
Sennheiser HD 580 Precision	260	Opn	260	300	Flagship model
Sennheiser HD320	455	Opn	-	-	3m lead, 3.5/6.3mm
Sennheiser IS850	860	-	330	-	Digital audiophile infra-red
Sennheiser HE60/HEV70	998	Opn	260	-	Electrostatic with energiser
Sennheiser Orpheus	9652	Opn	365	-	Electrostatic, valve energiser
Sony MDR-E505	8	Ear	-	-	Supplied soft case
Sony MDR-E515EX	8	Ear	5	-	1m lead, mini plug
Sony MDR-007 Mk II	8	Opn	36	-	2m, 3.5/6.3mm plug
Sony MDR-009	10	Opn	40	-	2m, 3.5/6.3mm plug
Sony MDR-W07L	11	Ear	13	-	1m mini plug
Sony MDR-A009	12	Opn	-	-	-
Sony MDR-E515V	12	Ear	5	-	1m lead, mini plug
Sony MDR-V50	13	Slid	-	-	-
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	Slid	-	-	2m, 3.5/6.3mm plug
Sony MDR-E747MP	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-CD50	20	Slid	180	24	2m, 3.5/6.3mm plug
Sony MDR-5747	20	Ear	6	-	1.2m lead, mini plug
Sony MDR-P1TV	22	Slid	-	-	5m, 3.5/6.3mm plug
Sony MDR-A22L	22	Ear	-	-	1.2m mini plug
Sony MDR-CD250EX	28	Slid	-	-	3m, 3.5/6.3mm lead
Sony MDR-CD450	45	Slid	260	24	3m, 3.5/6.3mm plug
Sony MDR-IF210	50	IR	170	-	Extra h/phone w/o transmitter
Sony MDR-CD550	60	Slid	270	45	3m, 3.5/6.3mm plug
Sony MDR-D33	70	Slid	120	45	1.5m, 3.5/6.3mm plug

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 Weight - without cable.
 Impedance - in ohms.
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Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Sony MDR-IF210K	80	IR	170	-	Seven meter range infra red
Sony MDR-D55	90	Sld	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-CD750	90	Sld	290	45	3m, 3.5/6.3mm plug
Sony MDR-D77	120	Sld	140	45	1.5m, 3.5/6.3mm plug
Sony MDR-610K	190	IR	470	-	Seven meter range infra-red
Sony MDR-CD1000	200	Sld	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	Sld	160	32	3m lead, OFC wire
Technics RP-HT86	40	Sld	165	35	3m lead, XBS acoustic load
Technics RP-HT116	60	Sld	190	35	3m lead, XBS function
Technics RP-F10	100	Sld	300	32	3m lead, XBS pipe phone
Technics RP-F30	180	Sld	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	Sld	-	-	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

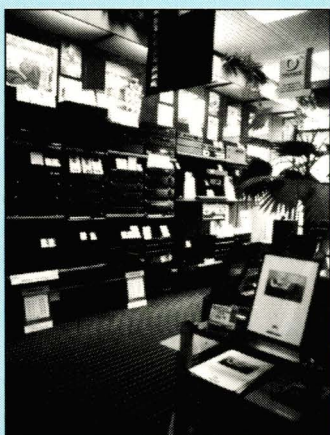


Key to loudspeakers
 Price - typical retail, to nearest pound.
 Type - 2x, 3x etc - number of independent drive units. Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver. ABR - auxiliary bass radiator. Sub - subwoofer. Uni-Q - KEF prop. coaxial drive unit. Horn - horn loading. MC - moving coil. ESL - electrostatic. CC - coupled cavity. Hybrid - dynamic bass/ESL or ribbon top.
 Sens - output at given power input
 level. Impedance - in ohms. Power - maximum recommended amplifier output. Size - width x height x depth in cm.
 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
LOUDSPEAKERS							
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 int x'over and amps
ATC SCM100A	5660	Active	-	8	350	40,84,59	With int x'over and amps
ATC SCM300A	11995	Active	94	-	850	-	With ext x'over and amps
Audio Note AN-KB	499	-	90	8	100	28,46,23	Free space, stand mount
Audio Note AN-K/SP	699	-	90	6	100	28,46,23	Free space, stand mount
Audio Note AN-J/B	799	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-J/SP	999	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-E/B	1299	-	94	8	150	36,84,28	Free space, stand mount
Audio Note AN-E/SP	1599	-	94	8	150	26,84,28	Free space, stand mount
Audio Physic STEP	1299	2xPt	84	4	60	14,33,23	Time aligned, space frame stan
Audio Physic SPARK	1599	2xPt	86	4	70	17,40,25	Time align, space-frame stand
Audio Physic TEMPO	1999	2xPt	88	8	150	22,107,47	Floor stand, time aligned
Audio Physic VIRGO	3399	4xPt	90	4	150	16,100,42	Floor stand, decoupled tweeter
Audio Physic TERRA	3499	Sub	-	-	-	-	Active sub, adjustable
Audio Physic AVANTI	5599	4xPt	86	4	200	19,107,40	Decoupled mid/tweeter
Audio Physic CALDERA	9999	5x	91	4	250	25,111,50	Pneumatic baffle, 3 cabinet
Audio Physic MEDEA	20999	4xPt	91	4	400	24,110,50	Phase linear
Audio Vector 2X	850	2x	89	8	120	17,90,22	Black ash
Audio Vector 3X	1500	3x	89	8	150	19,98,52	Black ash + cuba
Audio Vector 5X	2500	4x	91	8	200	24,110,34	Black ash + cuba
Audio Vector 6	4600	3xPt	92	6	250	38,115,42	Black piano lacquer
Aura SP50	400	2xPt	87	4	120	21,40,24	Carbon fibre bass unit
B&O Beovox RL1000	215	3x	86	8	60	32,40,13	Simplified RL6000
B&O Beovox CX50	285	2x IB	89	6	100	12,21,21	
B&O Beovox CX100	395	2x IB	89	6	200	12,32,21	
B&O Beovox RL6000	435	3x	87	8	100	41,54,18	Simplified RL7000
B&O Beovox 4500	450	2x Pt	87	8	90	45,38,8	
B&O Beovox RL7000	665	3x	88	8	200	50,70,24	Twin bass
B&O Beolab 4500	1125	Active	-	-	45	45,38,8	Attaches to wall, display
B&O Beolab 6000	1350	Active	-	-	80	20,110,21	Column, two amps, shielded
B&O Beolab 8000	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 Solid 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 DM600i	190	2x IB	87	4	100	21,36,25	Stand/shelf mount
B&W Solid Monitor	200	Pt	90	8	150	17,24,15	Various colours
B&W Solid Twinbass	230	Sub	91	4	150	45,20,60	White & black finish
B&W CWM6i	240	2x	89	8	70	23,32,8	In wall
B&W DM610i	250	2x IB	89	4	150	24,49,31	Stand/shelf mount
B&W CWM8i	300	2x	90	4	100	28,38,9	In wall
B&W Solid Verticale	400	Sat/sub	88	4	100	-	Lifestyle, 3 boxes
B&W DM620i	430	2x ABR	90	4	150	24,75,31	Floor standing
B&W Signature 7	500	2x	88	8	150	28,37,10	In-wall monitor, Kevlar cone
B&W P4	600	2xPt	88	8	120	20,81,24	3 real wood veneers
B&W P5	800	3xPt	90	8	200	20,90,28	3 real wood veneers
B&W Matrix 805 V/H	895	Pt	87	8	120	33,33,21	Overboard tweeter (vert/horiz)
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	50	36,20,20	Acoustimass technology

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Acoustic Energy Aegis 1	452	2x Pt	86	8	150	21,39,26	Stand mount, metal cone
Acoustic Energy Aegis 2	799	2x Pt	86	8	200	33,106,26	Floor, reflex, metal cone
Acoustic Energy AE1	870	2x Pt	88	8	200	26,30,18	Metal dome/cone, solid enc
Acoustic Energy AE2	1175	2x Pt	91	6	200	24,40,32	Twin bass, metal cone
Acoustic Energy AE3	1650	3x Pt	87	4	250	37,27,63	Simplified metal dome/cone
Advent Mini	99	-	88	8	120	16,28,14	Bookshelf/stand mount
Advent Baby 2	149	2x	89	8	75	26,39,15	Bookshelf/stand mount
Advent Graduate	219	2x	89	8	210	28,44,17	Bookshelf/stand mount
Advent Prodigy	299	-	89	8	300	24,68,20	Floor standing, free space
Advent Legacy 2	349	-	90	8	500	38,67,22	Floor standing, free space
Advent Laureate	499	-	90	8	500	21,80,29	Floor standing, free space
Advent Heritage	579	-	90	8	600	25,89,31	Floor standing, free space
Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
Allison AL105	170	2x	90	4	150	24,37,21	Boundary, stand mount
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 LC							

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Audiolab 8000C - 94	£ 519.95
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Audiolab 8000M - 94 (each)	£ 749.95
Audiolab 8000PPA	£ 849.95
Audiolab 8000Q	£ 999.95
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Musical Fid F15	£ 1899.95
Nad 310	£ 129.95
Nad 302	£ 189.95
Nad 304	£ 249.95
Nakamichi IA4s	£ 199.95
Pioneer A103	£ 129.95
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Nakamichi DR3	£ 329	£ 329.00	NDR
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Sony TCK415 3-Head	£ 129	£ 129.00	NDR
Sony TCK515 3-Head Dolby S	£ 229	£ 159.00	NDR
Sony TCK611S Dolby S	£ 229	£ 238.00	NDR

Technics RSBX501	£ 179.95
Technics RSTR373K	£ 179.95
Technics RSTR474K	£ 199.95
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Nad 402	£ 179.95
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Pioneer F203 RDS	£ 129.95
Pioneer F502 RDS	£ 249.95
Quad 66FM	£ 532.95
Rotel RT935AX	£ 149.95
Rotel RT940AX	£ 189.95
Rotel RT950BX	£ 219.95

Sony STS311RDS	£ 129	£ 139.00	NDR
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CD PLAYERS

Aiwa XC300	£ 129	£ 98.00	NDR
Arcam Alpha One	£ 229.95		
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	£ 229.95
Audiolab 8000 CDM	£ 1299.95
Audiolab 8000 DAC	£ 799.95
Cyrus DAD7	£ 899.95
Denon DCD315	£ 149.95
Denon DCD715	£ 179.95
Denon DCD825	£ 219.95
Denon DCD1015	£ 299.95
Denon DCM340 Multi	£ 349.95
Harmon Kardon FL8400	£ 299.95
Kenwood DP7060	£ 379.95
Marantz CD10	£ 1199.95

Marantz CD10 Graded	£ 899.00
Marantz CD16	£ 1399.95
Marantz CD53	£ 199.95
Marantz CD63	£ 249.95

Marantz CD63 Graded	£ 179.00
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Marantz CD63SE	£ 349.95
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Marantz CD63SE Graded	£ 269.00
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Meridian 563 DAC	£ 749.95
Meridian 506	£ 874.95
Meridian 500 Transport	£ 1094.95
Meridian 508	£ 1474.95
Musical Fid E60	£ 299.95
Musical Fid E600	£ 599.95
Musical Fid FCD	£ 1499.95
Nad 501	£ 189.95
Nad 502	£ 239.95
Nad 513 Multi	£ 279.95
Nad 514	£ 339.95

Philips CD710	£ 129	£ 79.00	NDR
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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 PDM100H Multi	£ 599.95
Pioneer PDM603 Multi	£ 249.95
Pioneer PDS503	£ 199.95

Pioneer PDS703	£ 249.95	FG
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Quad 67	£ 824.95
Roksan	P.O.A.
Rotel RCD930AX	£ 199.95
Rotel RCD970BX	£ 349.95
Sony	P.O.A.

Teac CDP3500	£ 129	£ 149.00
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Teac DT1 DAC	£ 449.95
Teac VRDST1 Transport	£ 499.95
Teac VRDS7	£ 599.95
Teac VRDS10	£ 769.95
Teac VRDS20	£ 1299.95
Technics SLPG360	£ 139.95
Technics SLPG460	£ 159.95
Technics SLPG560	£ 179.95

Technics SLP670AK	£ 199.95	FG
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Yamaha CDC645 Multi	£ 279.95
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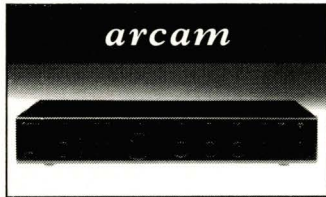
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arcam

Alpha 5

The **Alpha 5** is Arcam's best ever "budget audiophile" amplifier. It has outsold all other comparable amplifiers in the UK for almost two years.

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.

The **Alpha 5** has a rated power output of 40 watts per channel. This enables you to drive most loudspeakers with control, creating a hard to beat ancillary package.

At Sevenoaks Hi Fi you will discover the full Arcam **Alpha** and **Delta** series of products.

musical fidelity



E10

The **E10** integrated amplifier is the latest addition to Musical Fidelity's superb **Elektra** range, featuring the same stylish front panel and diecast metal knobs as the other **Elektra** models. Build

quality is as you would expect from this dedicated 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.



ruark

Paladin

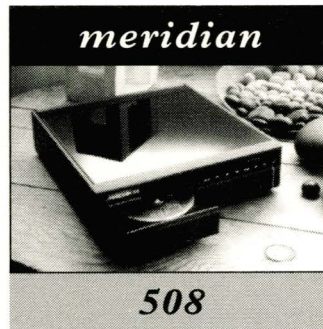
Craftsmanship and refined musical presentation are the hallmarks of Ruark loudspeakers. All of the models in their range are able to blend effortlessly into any living room.

The **Paladin** incorporates all these features. A new long-throw (200mm) driver and Vifa tweeter ensures superb mid-range clarity with the added dimension of extended bass. Style and performance combine.

It is testimony to the very high standards that Ruark set

themselves and uphold so impeccably that they offer such quality models like the **Swordsman+ II**, **Templar**, **Talisman II**, **Crusader II** and **Equinox**.

We also stock many other quality loudspeakers including ProAc, Monitor Audio, Kef Reference, TDL and Mission.



meridian

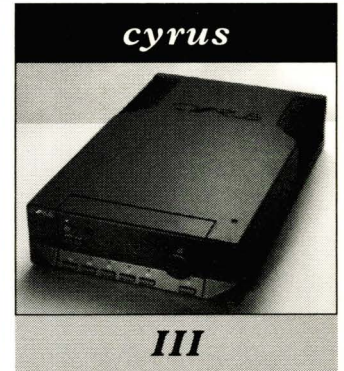
508

Meridian's 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, Worcester, Leicester, Woolwich and Chatham.

*Digital Audio Visual products now on demonstration.



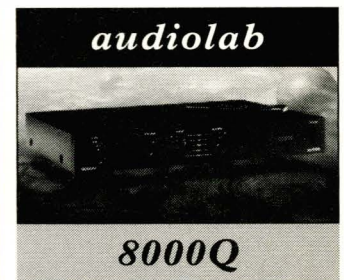
cyrus

III

Innovative styling and sophisticated performance with the convenience of remote control are the hallmarks of Cyrus products.

When you combine the new **Cyrus III** integrated amplifier with suitable loudspeakers, it delivers bass weight and slam with close attention to detail and neutrality. There is a natural upgrade path for the integrated Cyrus products - simply connect the **PSX-R** (Power Supply) and performance is improved still further.

To audition the **Cyrus III**, **PSX-R**, **DAD7** (CD Player), **Discmaster** (CD Transport), **Dacmaster** (DAC), **FM7** (Tuner) and new **Pre/Power** - contact us for details of your nearest Sevenoaks Hi Fi Cyrus stockist.



audiolab

8000Q

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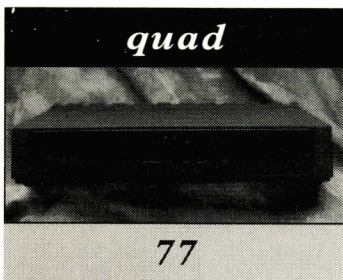
EXPRESSION

hi fi connoisseurs and music lovers

Heralding the latest addition to the Audiolab range. The new **8000Q** pre amplifier incorporates many significant technical advances over today's 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 Audiolab's own **8000P** and **8000M** power amplifiers, helping to provide excellent detail and dynamics with a wide range of loudspeakers.

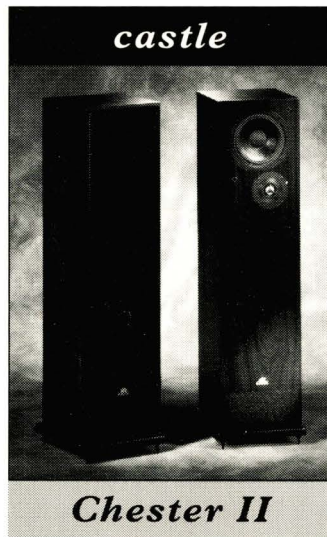
For more details on these and other models in the Audiolab range including **8000A**, **8000C**, **8000PPA**, **8000T**, **8000CDM** and **8000DAC** simply contact your local Sevenoaks Hi Fi branch.



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.



The new curved profile grille and wood plinth are the only revisions obvious from the exterior on the **Chester II**.

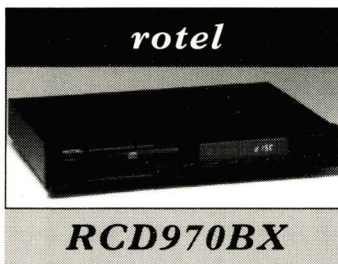
Yet beneath the veneered cabinet are more closely specified crossover components, enabling the re-positioned (off-set) driver and tweeter units to provide significantly improved stereo imaging.

Throughout the range which includes the **Trent II**, **Durham 900**, **Severn** and **Howard**, you have a choice of nine real wood finishes - including a luscious rosewood and Yew (at a small additional cost).



Marantz are one of the pioneers with a dedication to make recorded sound as enjoyable as the real thing. They call this the development of pure fidelity and over the years it has led 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 a high mass drawer mechanism and copper screening for improved air flow, ensures faithful musical reproduction, long term reliability and a natural upgrade from the highly acclaimed **CD63**. Another exceptional value for money product from Marantz.



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 **RCD965BX**.

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/RB970BX Mk2**.

When you look back over the last twenty five years to the birth of hi fi separates - Rotel were there. Today, they still offer more Best Buys, Recommendations and accolades than any other manufacturer.



WELCOME TO SEVENOAKS HI FI

Sevenoaks Hi Fi have been at the forefront of Hi Fi retail in the UK for over 21 years.

We sell quality products to discerning customers and we firmly believe in a meaningful demonstration and helpful unbiased advice.

All the products we sell are brand new, fully guaranteed and maintained by our own service department. We also offer *Peace of Mind* with our own 'No Quibble' extended warranty.

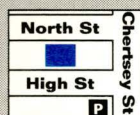
We are able to install the products you purchase, ensuring their optimum performance. Simply ask your local branch for details.

If you thought this level of service might be expensive - then you would be wrong. 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!*

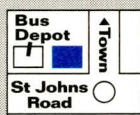
Added value offers not available on price match sales.

THE COUNTRY...

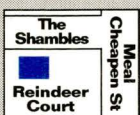
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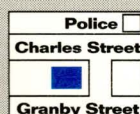
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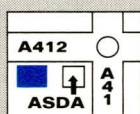
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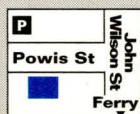
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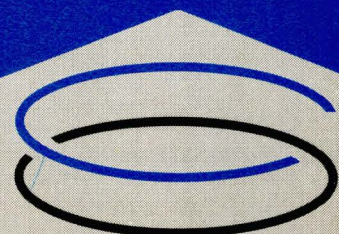
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SEVENOAKS HI FI

110 HI-FI CHOICE BUYER'S GUIDE



Key to loudspeakers
Price - typical retail, to nearest pound.
Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic

bass/ESL or ribbon top.
Sens - output at given power input level.
Impedance - in ohms. Power - maximum recommended amplifier output.
Size - width x height x depth in cm.

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
LOUDSPEAKERS							
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/sub	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	2x Pt	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	200	Pt	89	8	60	20,34,18	Shelf/stand, nine finishes
Castle Durham 900	300	Pt	90	8	85	22,40,23	Shelf/stand, nine finishes
Castle York	370	Pt	89	8	100	26,43,22	Stand mount, stands inc
Castle Severn	500	Pt	87	8	110	23,77,20	Free standing, 9 finishes
Castle Chester	700	Horn	90	8	100	23,91,25	Quarter wave, nine finishes
Castle Howard	1100	3xHorn	90	8	125	26,104,41	Quarter wave, nine finishes
Castle Winchester	1650	3x	90	8	150	42,108,23	9 finishes, quarter wave
Celestion Little 1	99	-	90	8	50	9,20,15	
Celestion 1	119	-	86	8	50	16,27,21	
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	Aerolam lightweight enclosure
Celestion 300	1099	-	84	8	120	21,97,33	
Celestion 700SE	1435	-	82	8	120	20,37,24	Aerolam lightweight enclosure
Cerwin Vega VS8	250	2x	94	6	100	28,51,29	Bookshelf
Cerwin Vega SAT-6	300	Sat/sub	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 + Kumarka (brown)
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	-	86	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 Chorus FS	698	2x IB	89	8	-	26,88,21	Floor standing
Dawn Audio Symphony	1995	3x IB	91	8	-	34,113,32	Floor standing
Denon SCM2	80	IB	87	6	70	19,28,20	UK designed & built
Denon SC-E313	160	Pt	88	8	100	22,75,23	UK designed & built
ECA SERVO A.2	1850	2x Pt	80	8	150	22,102,30	True ribbon tweeter
Epos ES11	445	Pt	87	8	75	20,38,25	Free space, stand mount
Epos ES14	675	Pt	87	8	100	23,49,29	Free space, stand mount
Epos ES25	1650	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



Key to loudspeakers
Price - typical retail, to nearest pound.
Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic

bass/ESL or ribbon top.
Sens - output at given power input level.
Impedance - in ohms. Power - maximum recommended amplifier output.
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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
LOUDSPEAKERS							
Fullers Sultan	399	2xPt	91	8	50	24,51,30	3 finishes
Fullers Sultan H.E.	439	2xPt	98	8	90	24,51,30	High sensitivity, 3 finishes
Fullers Pharaoh 1	649	2xPt	88	8	60	20,30,20	Curved sides, various finishes
Fullers Sphinx	839	3x	89	8	70	25,91,30	Floor standing, var finishes
Fullers Pharaoh 2	1200	3xPt	88	8	80	39,100,31	Pharaoh 1 with added bass encl
Fullers Pharaoh 3	2499	4xPt	88	8	150	46,118,45	Pharaoh + bass & subbass encls
Gale Reference Monitors	100	2x	88	8	70	-	Bookshelf, black finish
Gale Model 2	150	2x	88	8	70	-	Pharaoh 1 with added bass encl
Gale Model 4	200	2	88	8	75	-	Bookshelf, black finish
Gamma Acoustics Epoch	1499	-	-	-	-	27,95,36	
Genelec 1019A	1572	Active	-	-	28	23,31,25	
Genelec Blamp 1031A	2068	Active	-	-	104	25,39,29	
Genelec Triamp S30	3055	Active	-	-	108	32,50,32	
Genelec Triamp 1037A	4982	Active	-	-	191	40,68,30	
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	169	-	88	6	100	21,36,25	
GLL Magnum	199	-	86	6	100	25,42,29	
Goodmans Active 75	65	Active	-	-	80	-	
Goodmans M100	80	2x	86	8	75	17,26,20	Bookshelf, close to wall
Goodmans HT100	100	-	86	8	60	25,53,20	
Goodmans HT170	150	-	92	8	100	25,70,22	
Grundig MBX310	80	3xPt	-	4	70	18,42,29	3 drivers, 2 way
Grundig BX1	160	2x Pt	-	4	60	23,40,30	16 litre
Grundig BX2	230	3x Pt	-	4	80	24,49,33	22 litre
Grundig BX3	350	2x Pt	-	4	120	24,107,34	53 litre, 3 drivers, 2 way
Harbeth BBC LS3/5A	675	IB	82	10	30	30,19,18	Free standing
Harbeth HL-P3	699	IB	83	8	45	31,19,18	Free standing, shielded, biwir
Harbeth BBC LSS/12A	1195	Pt	81	8	100	30,18,23	Free standing, biwire
Harbeth HL Compact 7	1295	Pt	86	8	120	52,27,32	Free-standing, shielded
Harbeth HL-5	1495	Pt	86	8	100	64,32,31	Free standing, biwire
Harman-Kardon LS0200	149	-	87	8	50	21,35,30	
Harman-Kardon LS0300	199	-	88	8	75	21,38,80	
Helius Sirius III	1330	Pt	90	8	250	31,97,16	
Helius Sirius II	1975	Pt	95	4	300	36,107,16	
Helius Sirius I	2500	Pt	93	4	500	36,107,16	Floor standing, biwire
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 Heystack	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 1i	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</						



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Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Jamo D265	300	3xPt	95	4-8	150	44,68,32	
Jamo Classic 6	300	2xPt	90	4	100	20,84,29	Inc spiked feet
Jamo BX100A	300	3x Pt	91	8	100	32,55,28	Floor or stand mount
Jamo 307	300	2x Pt	87	6	70	18,31,27	Stand mount
Jamo Cornet 90-4	330	3xIB	91	4	140	26,87,27	
Jamo 407	350	2x Pt	88	4	80	22,41,29	Stand mount
Jamo Graphic	350	2x Pt	88	8	60	39,44,8	Wall mount
Jamo Atmosphere	380	2x Pt	88	8	60	27,37,16	Wall mount, doubles as lamp
Jamo Cornet 100-4	400	3xIB	91	4	200	32,95,27	
Jamo Classic 8	400	3xPt	90	4	150	23,90,29	Inc spiked feet
Jamo Silhouette	400	-	90	5	80	25,122,17	
Jamo D365	400	-	96	4-8	200	46,78,35	
Jamo BX150A	400	3x Pt	92	8	150	38,63,31	Floor mount
Jamo SW500 System	430	2x	90	8	140	41,38,53	Passive stereo subwoofer
Jamo BX200A	450	3x Pt	93	8	250	29,17,13	Floor mount
Jamo 477	500	2x Pt	88	4	100	19,77,29	Floor standing
Jamo 507	700	3x Pt	88	4	150	22,91,37	
Jamo 707	900	3x Pt	90	4	200	24,104,39	
Jamo Oriol	6000	3x	87	6	300	40,178,30	Floor standing, coupled cavity
JBL Control One	115	2xPt	87	4	150	24,156,14	Shielded, wall mountable
JBL 4208	449	-	89	8	300	29,45,23	
JBL L1	479	2x Pt	87	8	200	25,40,20	Asymmetric, time aligned
JBL HTS-1	629	-	-	-	150	-	
JBL L3	699	2x Pt	89	8	200	30,86,24	Asymmetric, time aligned
JBL HTS-2 system	800	-	-	4	150	-	
JBL HTS-3	999	-	-	-	180	-	
JBL L5	1299	3x Pt	90	6	300	26,45,33	Asymmetric, time aligned
JBL Ti 1000	1500	2x IB	89	4	150	20,30,13	Asymmetric, double wall
JBL L7	1699	4x Pt	89	4	200	117,25,45	Asymmetric, time aligned
JBL Ti 2000	2000	3x IB	89	4	200	33,82,30	Asymmetric, double wall
JBL Ti 3000	2499	3x IB	90	6	200	46,105,35	Asymmetric, double wall
JBL i 5000	3499	3x IB	91	6	300	48,114,38	Asymmetric, double wall
Jordan Watts JHFLG	420	-	-	-	-	-	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	
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 SPX770BK	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

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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LOUDSPEAKERS							
KEF 107/2 REC	3999	4xCC	90	4	300	33,116,45	Raymond Cooke Special Edition
Kenwood LS-200G	200	Pt	89	4	60	21,35,30	European design
Kenwood LS-770G	260	Pt	88	4	110	27,48,26	European design
Kenwood LS-300G	300	Pt	82	8	60	21,35,30	European design
Kenwood LS-880G	360	Pt	86	4	160	28,51,26	Titanium tweeter
Kenwood LS-500G	500	Pt	87	4	100	22,44,28	European design
Kenwood LS-700G	1200	Pt	87	4	120	30,90,30	European design
Kenwood LS-1000G	1700	Pt	87	4	160	34,110,38	European design
Keswick Audio Aria	269	2x	88	8	70	21,42,27	Bookshelf
Keswick Audio Volante	499	-	90	8	85	21,85,27	Floor standing
Keswick Audio Figaro	799	-	86	8	125	19,28,27	Features solid timbers
Keswick Audio Alto	999	Sub	87	8	150	19,70,27	To match Figaro
Lineaum LFX Wood	649	Hybrid	90	-	-	16,22,18	Modified ribbon/dynamic
Lineaum LSLI	991	Hybrid	90	-	-	30,150,38	Modified ribbon/dynamic
Lineaum LFX Corian	1399	Hybrid	90	-	-	16,22,18	Modified ribbon/dynamic
Linn Index	259	2x IB	87	8	-	21,44,24	30 watts minimum
Linn Tukan	398	2xIB	87	8	30	19,30,18	Multipurpose
Linn Keldih Passive	595	2x IB	87	4	60	20,83,28	Floor standing, 60w min
Linn Keldih Aktiv	1090	2x IB	-	-	-	20,83,28	Floor standing, boundary
Linn Kader	1298	3x	-	4	60	20,28,90	Black ash or walnut
Linn Kader Passive	1298	3x IB	87	4	60	20,90,28	Integral stands, 60w minimum
Linn Kader Aktiv	1995	3x IB	-	-	-	20,90,28	Integral stands, boundary
Linn Keltik Aktiv	4400	3x IB	-	-	-	26,104,37	Integral stands, boundary
L Voice Horning Agathon	3400	Horn	96	8	100	36,48,115	Floor standing
Living Voice Tone Scout	7249	Horn	104	8	100	64,110,70	Floorstanding, three-way
Living Voice Air Partner	16400	Horn	108	8	100	64,160,90	Floorstanding, Vitavox drivers
Lowther Fidelio	1465	Horn	96	8	100	29,100,43	
Lowther Academy	1805	Horn	98	4	100	29,100,43	16ohm option
Lowther Bel Canto	2035	Horn	97	8	100	28,132,44	Including adjustable stand
Lowther Delphic	2525	Horn	98	4	100	28,137,44	With adjustable stand, 16ohm o
Lumley Reference LM4	375	2x	86	6	120	18,36,22	Stand mount
Lumley Reference LM5	499	2x	88	6	150	25,46,21	Stand mount
Lumley Reference LM6	650	2x	88	6	150	25,81,21	Floor standing
Lumley Reference LM3	895	3x	90	8	120	27,87,28	Floor standing
Lumley Reference LM2	2500	4x	88	8	200	33,110,29	Open baffle, floor standing
Lumley Reference LM1	8500	5x	89	4	500	71,122,40	2 box, floor standing
MAG Audio Audio A90	3600	Ribbon	80	3.7	300	52,150,8	Two-way full range ribbon
Magnepan SMG-C SE	990	Panel	908	4	150	43,122,-	2x Quasi-ribbon
Magnepan MG-0.6 SE	1370	PANEL	85	4	250	48,127,-	2x quasi ribbon
Magnepan MG-10 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-20SE	10300	PANEL	87	4	250	74,201,-	3x planar, ribbon tweeter
Magnepan MG-20SE A	11000	PANEL	-	-	-	74,201,-	Active MG-20SE
Mantecore Minaret	450	IB	94	8	100	23,15,11	Nearfield monitor
Mantecore Minaret F1	750	IB	94	8	100	23,15,11	Nearfield monitor
Mantecore Matisse	1300	IB	90	8	200	100,28,22	Fibre/m honeycomb cabinets
Martin-Logan Statement	0	Hybrid	87	-	-	23,140,10	ESL/dynamic, biwire,
Martin-Logan Aeries	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 IIz	4333	ESL	86	-	-	62,127,32	Full range panel
Martin-Logan Quest Z							

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LOUDSPEAKERS							
Mordaunt-Short HT50	275	Pt	90	8	120	25,87,33	Positac, 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	249	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	1692	-	-	-	75	27,89,27	Boundary, floor standing
Naim SBL Passive	1821	-	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
Origen Live OL1B	289	-	89	8	100	20,30,19	
Origen Live OL2B	349	-	90	8	150	19,80,19	Floor standing
Origen Live OL-1AS	399	-	89	8	199	20,30,190	Floor standing
Origen Live OL-1A	399	-	86	8	150	20,30,19	
Origen Live OL-2AS	469	-	90	8	100	19,80,19	Floor standing
Origen Live OL-2A	469	-	86	8	150	19,80,19	Floor standing
Origen Live OL-1	499	-	86	8	150	20,30,19	
Origen Live OL-2	649	-	86	8	150	19,80,19	Floor standing
Origen Live OL3	975	3x	88	8	150	19,83,23	Floor standing
Origen Live Conqueror	1600	3x	89	8	150	23,87,23	Floor standing
Pentachord A	469	IB	87	8	80	21,28,20	Direct coupled
Pentachord B	519	IB	87	8	80	52,35,52	Active crossover, including el
Pentachord Pentode	729	IB	87	4	80	20,74,20	Active crossover, including el
Pentachord P'column	1649	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	-	22,58,33	Active digital loudspeaker
Pink Triangle Ventral	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
Pioneer CS-7030	230	3x Pt	90	8	190	35,70,28	Bookshelf
Pioneer S-4UK	250	2x Pt	88	6	80	21,37,28	No crossover, UK optimised
Pioneer S-60	270	2x	87	4	80	22,47,28	Bookshelf
Pioneer CS-9030	280	3x Pt	92	8	220	39,75,29	Bookshelf
Pioneer S-80	370	2x	88	4	80	23,56,28	Bookshelf
Pioneer S-200	600	2x	89	4	120	26,90,34	Biwire, floor standing
Pioneer S-400	950	2x	89	4	160	27,96,38	Biwire, floor stand, shielded
Polk S4	200	2x Pt	91	8	100	24,39,18	Stand mount, free standing
Polk M3 II	200	2x Pt	89	8	100	17,29,21	Multi-app, including wall brac
Polk S6	300	2x ABR	91	8	125	26,54,20	Stand mount
Polk S8	450	2x ABR	90	8	150	29,64,22	Stand mount
Polk S10	600	2x ABR	91	8	200	32,74,26	Floorstanding
Polk LS50	800	2x Pt	89	8	250	27,83,29	Floorstanding
Polk LS70	1200	2x Pt	90	8	250	31,94,37	Floorstanding, biampable
Polk LS90	1700	3x Pt	90	8	250	31,94,37	Floorstanding, biampable
Posselt Alpha I	950	Pt	89	8	60	24,44,28	
Posselt Alpha II	1200	Pt	89	8	90	23,100,27	
Posselt Alpha III	1350	Pt	89	8	100	26,102,30	
Posselt Alpha IV	1500	Pt	89	8	135	27,104,31	
Posselt Albatros	2200	Hrn	93	6	200	31,186,32	Ultra sensitive
Proac Tablet 3	479	-	87	8	100	17,28,23	Stand mount
Proac Studio 100	699	-	87	8	150	20,40,25	Stand mount
Proac Tablette 3 Sig	779	-	87	8	100	16,28,23	Stand mount
Proac Response One S	999	-	87	8	100	18,30,23	
Proac Response Two	1634	-	88	8	150	23,45,28	
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 Minimus 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 Kyle	198	2x	-	8	-	19,31,19	Stand/wall/shelf mount
Rega EL8	298	2x	-	8	-	17,72,20	Floor stand
Rega ELA Mk II	498	2x	-	8	-	30,80,20	Floor stand
Rega XEL	1040	2x	-	6	-	20,82,30	Floor stand
Rehdeko RK115	1200	Pt	104	8	-	34,42,28	
Rehdeko RK125	2300	Pt	102	8	-	34,61,28	
Rehdeko RK145	3400	Pt	102	8	-	39,66,29	
Rehdeko RK175	6500	Pt	106	8	-	50,96,37	
REL Strata	499	Sub	-	-	1kw	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	-	6	75	20,20,30	Stand required
Rogers LS2a/2	250	2x	86	8	100	23,36,21	Use about 30cm from wall
Rogers LS4a/2	330	2x	88	8	-	-	Various finishes
Rogers AB1 Subwoofer	499	1x	-	8	50	57,19,16	Passive subwoofer

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Rogers Studio 3	499	2x	85	8	45	19,30,16	Stand required
Rogers P20	599	2x Pt	88	8	150	26,42,30	Stand mount, stands available
Rogers LS3/5A	699	2xIB	-	12	50	31,19,16	Small broadcast monitor
Rogers Studio 5	699	2x	-	8	100	25,25,48	Stand required
Rogers P22	832	2x Pt	88	8	150	26,85,30	Floor stand, sloping baffle
Rogers Studio 7	899	2x	89	8	150	30,63,30	Stand required
Rogers P24a	1268	3x	86	4	250	25,104,35	Internal bass, floor standing
Rogers LS5/9	1531	2x	87	8	100	28,46,27	BBC monitor
Roksan Ojan 3 Black	795	3xPt	88	8	250	28,76,46	Floor standing, sprung tweeter
Roksan Ojan 3 Rosewood	995	3xPt	88	8	250	28,74,46	
Royd The Herald	198	Pt	86	8	100	31,20,18	Stand mount
Royd The Minstrel	259	Pt	86	8	100	69,18,12	Side port., floor standing
Royd Merlin	298	Pt	86	8	100	31,20,18	Veneered
Royd The Sorcerer	595	Pt	86	8	120	31,20,18	Front port, near field monitor
Royd The Abbot	665	Pt	90	8	120	81,20,30	Floor standing, free space
Royd The Prior	978	Pt	90	8	150	96,37,26	Floor standing, free space
Ruark Swordsman Plus II	299	2x IB	87	8	100	20,38,27	Near wall/stand mount
Ruark Sabre II	385	2x IB	87	8	100	23,37,27	Wall/free, on stands
Ruark Templar	479	2x IB	87	8	100	19,70,27	Wall or free, no stands reqd
Ruark Talisman II	699	2x Pt	88	8	100	23,84,32	Free space, floor standing
Ruark Broadsword II	849	2x IB	86	8	120	29,43,38	Free space, stand mount
Ruark Paladin	1099	2xPt	90	8	150	88,29,38	Floor standing
Ruark Crusader II	1495	3x Pt	88	6	150	24,92,32	Free space, floor standing
Ruark Equinox	1749	2x Pt	88	6	150	25,88,34	Free space, stands included
Ruark Accolade	2549	3x Pt	89	8	200	29,100,38	Free space, floor standing
Sansul SP-X111K	125	-	89	6	50	18,30,20	
SD Acoustics SD3R	399	Pt	87	8	100	20,38,30	Free standing, ribbon tweeter
SD Acoustics SD5	1235	3x Pt	88	8	200	20,110,30	Ribbon tweeter
SD Acoustics SD1	2695	IB	88	8	250	30,125,30	Open mid, ribbon tweeter
Shahinian Super Elf	790	2x	87	6	100	21,26,37	Finnish birch cabinet
Shahinian ARC	1675	3x	88	6	150	35,69,25	With passive bass radiator
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 standi
Sonus-Faber Minuetto	898	2x	88	-	-	23,35,28	Compact, stand mount
Sonus-Faber Minima Amator1498	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 E3990
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	9	

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Key to receivers
Price - typical retail, to nearest pound.
A/V - minimum requirements - Dolby Surround/Pro-Logic circuitry.
Power - watts/channel, both channels driven RMS 8ohms, 20Hz - 20kHz.
Wavebands - FM, L - long wave, M - medium wave.
Presets - number moving.
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.



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	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
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	2x Pt	-	6	100	17,24,17	
Technics SB-CS55	80	2x Pt	-	8	60	25,43,25	Shelf/stand, shielded
Technics SB-CS75	100	3x Pt	-	8	60	27,49,25	Composite mica cone mid
Technics SB-CS95	150	3x Pt	-	8	100	29,54,25	Composite mica cone mid
Technics SB-EX2	200	2x Pt	84	4	100	24,48,29	Composite mica cone mid
Technics SB-EX3	250	3x Pt	84	4	125	24,60,29	Mica diaphragms, separate LF b
Technics SB-EX7	450	3x Pt	84	4	180	29,85,32	Mica diaphragms, separate LF b
Technics SB-MX100D	2000	2x Pt	86	6	100	23,47,34	Floor standing, separate LF ba
Technics SB-MX200D	4000	3x Pt	88	4	125	35,91,43	Mica bass/tweeter
Totem Model One	995	Pt	87	4	120	17,31,23	
Triangle Titus TZe	325	-	90	8	75	20,25,32	New tweeter, lifetime warranty
Triangle Comete TZe	475	-	91	8	100	22,28,40	High sensitivity
Triangle Antal	899	-	92	8	150	22,102,30	
Triangle Zays	1299	-	92	8	250	99,22,28	
Triangle Aitinis	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 Opera Prima	450	Pt	88	8	75	20,33,25	Solid walnut, stand mount
UKD-Opera Opera Seconda	550	Pt	88	8	100	23,35,34	Solid walnut, stand mount
UKD-Opera Operetta	660	Pt	87	8	70	22,30,26	Solid walnut, stand mount
UKD-Opera Superparavotti	875	Pt	88	8	150	23,55,23	Solid mahogany, stand mount
UKD-Opera Callas II	895	Pt	87	6	150	34,22,32	Solid walnut, Focal drivers
UKD-Opera Divina	1390	Pt	87	8	150	24,39,40	Solid walnut, stand mount
UKD-Opera Caruso II	2250	3xPt	88	8	200	22,97,28	Solid walnut, floor standing
Vandersteen 2Ce	1395	4x	88	7	160	41,101,27	Free standing, phase aligned
Visonic David 5001	132	-	-	4-8	50	10,17,10	
Visonic Sub 4	154	-	-	4-8	100	36,49,31	
Visonic David 6001	163	-	-	4-8	60	13,20,12	
Visonic David 8001	228	-	-	4-8	80	16,25,17	
Wharfedale Centre Cube	49	Pt	87	8	75	14,13,12	Shielded centre speaker
Wharfedale Modus Cube	59	Pt	87	8	75	14,17,12	Shielded
Wharfedale CRS3	89	2x Pt	89	8	100	22,38,17	Stand/bookshelf mount
Wharfedale Diamond 6R	99	Pt	89	8	100	16,27,22	Stand/bookshelf mount
Wharfedale Modus Micro	109	2x Pt	86	8	75	14,23,12	Shielded
Wharfedale Modus Centre	119	Pt	87	8	75	46,14,12	Shielded centre speaker
Wharfedale 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 Modus Five	259	3xPt	90	8	125	22,65,29	Stand/bookshelf mount
Wharfedale Modus Seven	339	3xPt	90	8	125	22,81,20	Floor standing
Wharfedale Modus One-Three	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	-	-	25,53,35	Passive subwoofer for WATT
Wilson WAIT 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 A1T	219	IB	88	8	50	14,22,12	Magnetically shielded
ZYP A2S	299	2xIB	88	8	50	22,14,12	Studio nearfield monitor

Model	Price	A/V	Power	Wavebands	Presets	In/outputs	Remote	Size	Special
RECEIVERS									
Kenwood KR-V6060	350	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Kenwood KR-V7050	400	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Marantz SR-63	330	N	80	FM,M,L	30	MM,3L,1T	Y	43,14,34	
Marantz SR-73	599	Y	75	FM,M	30	MM,3L,3T	Y	43,15,38	Dolby Pro Logic
Marantz SR-82	899	Y	75	FM,M	30	MM,3L,2T	Y	43,17,43	Dolby Pro Logic, multi-room
NAD 701	259	N	25	FM,M	24	MM,2L,1T	Y	-	
NAD 705	329	N	40	FM,M	39	MM,2L,2T	Y	-	
Pioneer SX-203RDS	200	N	35	FM,M	30	MM,2L,2T	Y	42,14,29	RDS tuner
Pioneer SX-303RDS	250	N	50	FM,M	30	MM,2L,2T	Y	42,14,34	RDS tuner
Pioneer VSX-452	400	Y	50	FM,M	30	MM,2L,2T,2V	Y	42,14,35	Dolby Pro-Logic
Sansui RZ790	250	N	30	FM,M	30	MM,2L,2T	Y	-	
Sansui RZ-3500 II	370	N	30	FM,M	30	MM,2L,2T	Y	-	
Sherwood RX1010	120	N	30	FM,M	-	MM,2L,1T	N	-	
Sherwood RV5030R	330	Y	80	FM,M,L	-	MM,4L,4T	Y	-	Dolby Pro Logic
Sherwood RV6030R	400	Y	100	FM,M,L	-	MM,4L,4T	Y	-	
Sony STRD311	230	Y	60	FM,M,L	30	MM,2L,2T	Y	43,14,30	System remote
Sony STRD511	280	Y	50	FM,M,L	30	MM,3L,2T	Y	43,14,30	Dolby Pro Logic
Sony STRD611	330	Y	60	FM,M,L	30	MM,3L,2T	Y	43,14,30	Dolby Pro Logic
Teac AG-V3020	450	Y	95	FM,M	30	MM,4L,3T	Y	44,16,38	Dolby Pro Logic
Technics SA-GX170L	230	N	80	FM,M,L	30	MM,2L,2T	Y	43,13,31	
Technics SA-GX370L	280	Y	80	FM,M,L	40	MM,2L,2T	Y	43,13,31	Dolby Pro Logic
Technics SA-GX350L	350	Y	50	FM,M,L	30	MM,4L,1T	Y	43,14,36	Dolby Pro Logic
Technics SA-GX670L	450	Y	60	FM,M,L	30	MM,4L,1T	Y	43,16,36	Dolby Pro-Logic, help function
Yamaha RX-360	240	N	40	FM,M	-	MM,3L,1T	Y	-	
Yamaha RX-V470	400	Y	50	FM,M	-	MM,6L,2T	Y	-	Dolby Pro Logic

Model	Price	Source	Power	Size	Special
SYSTEMS					
Aiwa LCX-500	250	CD,R,T	10	-	Micro, remote, DC operation
Aiwa NSX-V25	280	CD,R	25	-	Mini, single box
Aiwa NSX-V70	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-V30	300	CD,R,2T	25	-	Mini, 3-CD player
Aiwa NSX-430	330	CD,R,2T	40	-	Mini, inc front surround spkrs
Aiwa NSX-V50	350	CD,R,2T	40	-	Mini, 3-CD player
Aiwa Z-1290	350	CD,R,Tu,2T	20	-	Midi, 3-CD player
Aiwa NSX-V70	400	CD,R,2T	85	-	Mini, front surround, hi-power
Aiwa Z-1500	400	CD,R,Tu,2T	30	36,48,35	3 CD player
Aiwa NSX-999	450	CD,R,2T	150	-	Mini, 3-CD, high power
Aiwa NSX-D737	500	CD,R,2T	50	-	Mini, 4-mode DSP
Aiwa NSX-V900	500	CD,R,2T	60	-	Pro-Logic,3-CD, front surround
Aiwa Z-1800	500	CD,R,Tu,2T	100	-	Midi, front surround, hi-power
Aiwa NSX-V150M	550	CD,R,2T	60	-	Mini, 50 CD changer
Aiwa Z-2300	600	CD,R,Tu,2T	60	-	Midi, Pro Logic
Aiwa NSX-D757R	600	CD,R,2T	60	-	Mini, Pro-Logic, RDS EON
Aiwa NSX-858	650	CD,R,2T	60	-	Mini, Pro-Logic
Aiwa Z-D3300M	700	CD,R,2T,Tu	75	-	Midi, 3-CD, high power
Aiwa Z-D8300M	800	CD,R,Tu,2T	75	-	Midi, 3-CD, high power
Aiwa Z-D9300M	1000	CD,R,Tu,2T	80	-	Midi, Pro Logic
Akai MX92	279	CD,R,2T	25	26,38,24	
Akai MX92T	329	CD,R,P,2T	25	27,46,31	As MX92, with mini turntable
Akai MX115	399	CD,R,2T	35	27,39,26	Graphic equaliser
Akai RX590	449	CD,R,2T,P	38	27,31,33	3x CD player, Dolby B
Akai MX115T	449	CD,R,P,2T	35	27,48,31	As MX115, with mini turntable
Akai RX590T	499	CD,R,2T,P	38	27,40,33	As RX590, with mini turntable
Akai RX690	549	CD,R,2T	50	27,40,33	3x CD player, Dolby B&C
Akai RX690T	599	CD,R,2T,P	50	27,49,33	As RX690 with mini turntable
Akai RX890	799	CD,R,2T	60	27,42,33	Virtual Room Simulator, RDS
Akai MX950	799	CD,R,2T	65	27,42,34	Triple CD, separates
Akai RX890T	849	CD,R,2T,P	60	27,51,33	As RX690, with mini turntable
Akai RX890 Compo	999	CD,R,2T,P	60	64,78,35	RX890 with stand & AP A950
Akai MX950 Compo	999	CD,R,P,2T	65	64,78,36	As MX950, with speaker stands
Amstrad MC500	100	CD,R,T	3	16,22,22	FM,MW 20 presets, bass boost
Amstrad Micro 1000	150	CD,R,T	5	15,20,26	15 presets, FM, MW, LW
Amstrad Micro 1500	170	CD,R,T	5	15,20,26	20 presets, FM,MW,LW
Amstrad CD3-500	200	CD,R,2T	5	28,34,30	Three disc CD player, FM, MW
Amstrad Micro 2000	230	CD,R,T	5	17,28,23	20 presets, FM, MW, LW
Amstrad Mini 3000	250	CD,R,2T	8	26,32,49	RDS tuner, mic mixing
Arcam Alpha 5	1200	CD,R	40	43,23,30	Based on Arcam separates
Arcam Alpha 6	1300	CD,R	50	43,23,30	Including Alpha 6 R/C amp
Arcam Delta	2810	CD,R,T	75	43,37,34	Fully remote controllable
B&O 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

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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
SYSTEMS					
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 AX15	370	CD,R,2T	35	45,34,63	Multi-disc player
Hitachi AX10	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-303	400	CD,R,Tu,2T	50	27,36,31	3-disc carousel
Kenwood UD-302	400	CD,R,2T	33	27,36,31	3-disc carousel
Kenwood UD-403	500	CD,R,Tu,2T	55	27,41,31	3-disc, Pro Logic
Kenwood UD-502	500	CD,R,T,2T	55	27,41,31	Presence modes
Kenwood UD-403P	550	CD,R,Tu,2T	55	27,41,31	As UD-403, + Pro Logic spkrs
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 UD-703	750	CD,R,Tu,2T	80	27,41,31	Pro Logic, RDS
Kenwood UD-753	800	CD,R,Tu,2T	80	27,41,31	6-disc, Pro-Logic, RDS
Kenwood M-58M	850	CD,R,Tu,2T	60	36,62,38	Dolby Pro Logic
Kenwood HD-600	900	CD,R,Tu,2T	40	27,40,35	"Audiophile" mini
Kenwood UD-952	1000	CD,R,Tu,2T	70	27,41,31	Dolby Pro Logic
Kenwood HD-1000	1000	CD,R,T	40	27,40,35	MD & equaliser options
Kenwood M-97G	1250	CD,R,V,Tu,2T	85	36,64,38	Dolby Pro Logic
Kenwood M-97MG	1300	CD,R,V,Tu,2T	85	36,64,38	Multi-CD
Marantz 1010	900	CD,R,2T	45	42,77,31	System Link Operation
Marantz 1020	1000	CD,R,2T	45	42,77,31	Motorised Front Panel
Nakamichi S space 7	1495	CD,R	40	-	Multi-CD, aux & tape input
Onkyo L-909	1200	MM,3L,2T	70	-	Component system, 4ohm rated
Panasonic SC-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	36,39,29	
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 multiplay, 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 multiplay version of J
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	Midi, remote control
Samsung SCM8100	300	CD,R,Tu,2T	20	36,37,26	Midi, remote control
Samsung MAX370	300	CD,R,2T	20	45,32,34	Midi, 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 Midi CDR160E	270	CD,R,2T	10	76,40,38	X-bass boost feature
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 CD170E	300	CD,R,Tu,2T	10	36,40,36	Remote control, auto-reverse



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
SYSTEMS					
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 695A	800	CD,T,Tu,2T	60	-	Full size separates, Dolby P-L
Sony MHC4900	800	CD,T,Tu,3T	60	22,41,28	
Sony MHC 5900AV	1000	CD,T,Tu,3T	60	22,41,28	UK sound, Dolby Pro Logic
Sony Compact Plus 795A	1000	CD,R,Tu,2T	60	43,48,39	Dolby Pro Logic, Dolby S
Sony Compact Plus 995A	1500	CD,R,Tu,2T	60	43,47,42	Dolby Pro Logic, LaserDisc
Technics SC-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 equipped mini system
Yamaha CC70	600	CD,R,2T	50	28,33,34	YST active bass

Model	Price	Bands	Presets	RDS	Size	Special
TUNERS						
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 TU92000	219	FM,M	70	-	45,8,38	
Harman-Kardon TU94000	299	FM,M	24	-	45,8,33	
Harman-Kardon TU96000	499	FM,M	24	-	45,8,33	
JVC FX362BX	130	FM,M,L	40	N	44,8,30	
JVC FX-572R	200	FM,M,L	40	Y	44,8,30	
JVC FX10101TN	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
Music 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	549	FM	-	N	21,16,30	
Naim NAT02	998	FM	-	N	21,16,30	
Naim NAT01	1599	FM	-	N	21,16,30	
Nakamichi ST3s	350	FM	30	N		

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TAF442B* £194.90
TAF542B £199.90

TECHNICS

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SUA900 II £399.90

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TD166 VI* £239.90
TD166 VI REGA* £269.90
TD280* £179.90

CLEARANCE BARGAINS

	normal price	CLEARANCE PRICE		normal price	CLEARANCE PRICE
HARMAN KARDON			LSO200	£149.90	£109.90
HK6350R	£399.90	£249.90	TD4200	£279.90	£199.90
HK6550	£429.90	£289.90	HK3300	£379.90	£199.90
HK1200	£279.90	£199.90	KENWOOD		
HK1400	£399.90	£299.90	KA8500	£699.90	£579.90
HD7450	£299.90	£199.90	KRV7050	£429.90	£319.90
			KRV6060	£349.90	£279.90
			DP7050	£349.90	£259.90

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ADF850 £229.90 £199.90
XKS7000* £549.95 £399.90
XKS9000* £699.90 £479.90

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RA940BX £249.90 £189.90
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SONY

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RSTR474* £169.90
RSTR575* £219.90
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RSBX501 £179.90

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AURA

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DENON

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DCD615 £179.90
DCD1015 £349.90
DCD825 £219.90

HARMAN KARDON

FL8400* £299.90

MARANTZ

CD63 £249.90
CD63SE £349.90

PIONEER

PD203 £159.90
PDS503 £199.90
PDS703 £249.90

ROTEL

RCD930AX £199.90
RCD940BX £249.90
RCD970BX £349.90

SONY

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CDPX303ES* £459.90

TECHNICS

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AM3 System £599.90
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Key to tuners
Price - typical retail, to nearest pound.
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.
Presets - total number of presets on all bands.

RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.
Size - width x height x depth in cm.

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.

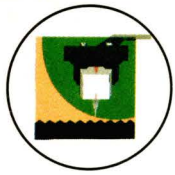
Highlighted products have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Bands	Presets	RDS	Size	Special
TUNERS						
Onkyo T-411RDS	280	FM,MW	30	Y	28,8,30	Mini component
Onkyo R-811RDS	420	FM,MW	30	Y	28,12,33	Mini component, incl timer
Philips FT930	160	FM,M,L	40	Y	44,11,30	
Pioneer F-203RDS	130	FM,M,L	30	Y	42,8,29	RDS at very budget price
Pioneer F-303RDS	180	FM,M	40	Y	42,8,29	RDS with FON
Pioneer F-502RDS	250	FM,M	40	Y	42,9,34	2 ariel inputs
Quad FM4	434	FM	7	N	33,7,21	
Quad FM66	532	FM	19	N	33,8,26	For use with Quad 66 system
Rotel RT-950BX	220	FM,M,L	20	N	44,8,24	
Rotel RT-990BX	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
TURNABLES					
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	595	M	33/45	45, 12, 35	Motor unit
Roksan Radius/Tabriz	795	M	33/45	45, 12, 36	As above, with Roksan arm
Roksan Radius/Tabriz zi	895	M	33/45	45, 12, 35	
Roksan TMS	2475	M	33/45	45, 12, 35	Suede black
Roksan TMS	2750	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 arm
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 arm
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 II/900	230	M	33/45	-	Fully suspended design
Systemdek I/920/Moth	235	M	33/45	-	As above with RB250 arm
Systemdek II/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 IV/UK	200	S	33/45	-	Electronic belt drive, AT95E
Thorens TD-166 V/UK/AT95E200	200	M	33/45	-	Blank armoard, cut to shape,
Thorens TD-166 V/UK	270	M	33/45	-	Inc TP50 manual arm, AT95E
Thorens TD-166 V/UK/Rega	300	M	33/45	-	With Rega RB250 arm, no cart
Thorens TD-2001	550	S	33/45	-	Includes Thorens TP50 arm, no
Thorens TD-3001BC	630	M	33/45	-	No arm, various armoards avail
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 MkII 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	Speeds	Size	Special
TURNABLES					
Akai AP A950	179	M	33/45	44, 12, 35	Inc cartridge
Alphason Sonata	835	M	33	-	Motor unit, suspended
Alphason Sonata/Atlas	1235	M	33/45	-	Motor unit inc PSU
Alphason Symphony	1860	M	33/45	-	Motor unit & PSU
Ariston Pro-1200	160	M	33/45	-	Semi-pro disco deck
Audiomeca Romance	1675	M	33/45	-	With Romeo unipivot arm
Audiomeca J1	2500	M	33/45	50, 40, 2	Top of the range model
Audiomeca J1/SL5	4250	M	33/45	50, 40, 2	With parallel tracking arm
B&O 7000	555	Auto	33/45	42, 8, 33	Inc MMC2 cartridge, RIAA pream
Basis Ovation 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
Genexa Lab-710	60	M	33/45	-	Includes MM cartridge
Genexa 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	Complete with Akito arm
Linn LP12 Basik	745	M	33	45, 14, 36	Non-crystal motor drive
Linn LP12 Valhalla	894	M	33/45	45, 14, 36	Electronic PSU, upgradable
Linn LP12 Lingo	1345	M	33/45	45, 14, 36	Outboard 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	129	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 OMS cartridge
Pro-ject 1	185	M	33/45	42, 11, 3	With Ortofon 510 cartridge
Pro-ject 1 (E)	209	S	33, 45	42, 11, 32	Semi-auto version of Pro-ject
Pro-ject 2	249	M	33/45	46, 12, 3	Metal/glass platter, clamp

Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
CARTRIDGES							
Arcam C77	30	MM	4mV	Y	N	-	Conical stylus
Arcam C77MG	40	MM	4mV	Y	N	-	As C77 with metal body
Arcam E77	50	MM	4mV	Y	N	-	Elliptical stylus
Arcam E77MG	60	MM	4mV	Y	N	-	As E77, with metal body
Arcam P77	63	MM	4mV	Y	N	-	'Profiled' stylus
Arcam P77MG	73	MM	4mV	Y	N	-	As P77, with metal body
Audio Note lo IIV	1395	MC	-	N	N	-	Silver wired
Audio Note lo Ltd V	2950	MC	-	N	N	-	Needs PSU
Audio Technica AT-91	13	MM	-	Y	N	-	
Audio Technica AT-95E	19	MM	-	Y	N	-	
Audio Technica AT-101EF	20	MM	-	Y	N	-	
Audio Technica AT-110E	24	MM	-	Y	N	-	
Audio Technica AT-420E	40	MM	-	Y	N	-	
Audio Technica AT-450E	62	MM	-	Y	N	-	
Audio Technica AT-OC3	104	MC	-	N	N	-	
Audio Technica AT-OC5	146	MC	-	N	N	-	
Audio Technica AT-OC30	619	MC	-	N	N	-	Nude micro linear stylus
Audio Technica ART-1	944	MC	-	N	N	-	
Audioquest MC5	250	MC	1.4mV	N	N	-	High output MC, line contact
Audioquest 404ii	500	MC	0.5mV	N	N	-	Boron cantilever
Audioquest B200L	800	MC	0.5mV	N	N	-	Boron tube cantilever
Audioquest 7000NSX	1295	MC	0.3mV	N	N	-	Boron tube cantilever
B&O MMC4	45	-	-	-	-	-	MM, elliptical diamond
B&O MMC2	90	-	-	-	-	-	MM, Contact Line stylus
B&O MMC1	105	-	-	-	-	-	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
Highlighted listings (as shown below) are covered in the Hi-Fi Choice Directory							



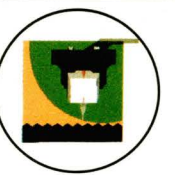
Key to cartridges.
Price - typical retail, to nearest pound.
Type - MM - moving magnet (output typically 1mV/cm/sec), MC - moving coil (output typically 0.1mV/cm/sec).
Output - in mV/cm/sec.
Int. stylus - Y for removable/replaceable styli and N for fixed styli.

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
TURNTABLES							
Denon DL103	100	MC	-	N	N	-	
Denon DL304	200	MC	-	N	N	-	Elliptical stylus
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
Koetsu Red K Sig	1998	MC	-	N	N	-	Selected, re-tuned Red T
Koetsu Urushi	2200	MC	-	N	N	-	Metal alloy body
Koetsu Signature	3218	MC	-	N	N	-	Rosewood body
Linn K5	54	MM	4.5mm	Y	N	-	
Linn K9	109	MM	4.5mm	Y	N	-	Metal body
Linn K18/II	197	MM	4.5mV	Y	N	-	Metal body
Linn Klyde	449	MC	150uV	N	N	-	Alloy body
Linn Arkiv	998	MC	150uV	N	N	-	Three point mt, machined body
London Decca Maroon	199	MM	5.0mV	N	N	8	Original mounting
London Decca Gold	239	MM	5.0mV	N	N	8	Elliptical stylus
London Decca Maroon Dp	259	MM	5.0mV	N	N	10	Decapod mounting
London Decca Gold Dpd	299	MM	5.0mV	N	N	5	Elliptical stylus, Decapod
London Decca S Gold	339	MM	5.0mV	N	N	7	Original mounting
London Decca S Gold Dp	399	MM	5.0mV	N	N	10	Decapod mounting
London Decca Jubilee	999	MM	5.0mV	N	N	5	0.5 inch mounting
Lyra Lydian	649	MC	-	Y	N	-	
Lyra Clavis Da Capo	995	MC	Low	N	N	-	
Lyra Parnassus	1995	MC	-	Y	N	-	
Milltek Aurora	299	MC	2.0mV	N	N	9.5	High output MC
Milltek 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 cantileve
N'ham Tracer I	98	MM	-	-	-	-	
N'ham Tracer II	175	MM	-	-	-	-	
N'ham Tracer III	350	MM	-	-	-	-	
N'ham Tracer IV	550	MM	-	-	N	-	
Ortofon 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

Highlighted listings (as shown below) are covered in the *Hi-Fi Choice* Directory.
Systemdek I920 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
CARTRIDGES							
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	74	MM	-	-	N	-	3-point fixing
Roksan Corus Black	130	MM	-	Y	N	-	
Roksan Shiraz	875	MC	-	N	N	-	3-pt generator mount, no glues
Shure ME70B	18	MM	6mV	Y	N	-	Conical stylus
Shure M92E	22	MM	5mV	Y	-	-	Dual T4P & normal fit
Shure SC35C	28	MM	5mV	Y	N	-	For broadcast use
Shure M44C	33	MM	9mV	Y	N	-	Professional, spherical stylus
Shure ME95ED	38	MM	5mV	Y	N	-	Elliptical stylus
Shure M55E	42	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 II	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	12300	MC	-	N	N	-	
van den Hul Grasshopper	12300	MC	-	N	N	-	
van den Hul Grasshopper	12950	MC	-	N	N	-	
van den Hul Grasshopper	13200	MC	-	N	N	-	
van den Hul Grasshopper	13200	-	-	N	N	-	
van den Hul Grasshopper	13500	MC	-	N	N	-	
Virtual Reality Aciore	199	MC	-	N	N	-	
Virtual Reality Etile	299	MC	-	N	N	-	
Virtual Reality Lexe	899	MC	-	N	N	-	



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.

Model	Price	Type	Base type	Effective len	Wt. range	Special
TONEARMS						
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 LJ Arm	49	H	L	212	5-12	Damped
Decca LJR Arm	99	H	L	212	5-12	Rewired version of LJ
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 Akito	209	F	L	229	2-10	Statically balanced
Linn Ekos	1297	F	L	229	4-9	Dynamically balanced
Manticore Musician	395	F	L	230	-	Handmade, lifetime guarantee
Manticore Magician1	695	F	L	230	-	Polished armtube finish
Manticore Magician2	795	F	L	305	-	Polished armtube finish
Moth Arm	95	-	-	-	-	Rebadged Rega RB250
Moth Mk III	146	-	-	-	-	Rebadged Rega RB300
Naim AR0	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 III S	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
Townshend Excalibur	799	F	P	220	3-14	Outrigger headshell damping
Wheaton Tri-Planar 4	2750	-	-	-	-	With terminal box
Wheaton Tri-Planar 4C	3000	-	-	-	-	As above with Cardas cable
Wilson Benesch ACT1	975	-	-	-	-	Carbon-fibre armtube, unipivot
Zeta	469	-	-	-	-	Pivoted
Zeta	555	-	-	-	-	Pivoted, vdH wired

RINGMAT

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First record support to be properly designed

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"A carefully researched and innovative product which genuinely transforms analogue replay at nominal cost. The string bass was more dynamic, the separation cleaner and, more importantly, the phrasing of the music was more fluid - you heard the vocal line arch and fall." **Christopher Breunig (Hi-Fi News, September '93)**

"I found I preferred the RINGMAT and will carry on using it. The results were wholly positive..." **Jason Kennedy (Hi-Fi Choice, April '93)**

"RINGMAT gave a sharper, cleaner, more solid sound, with better fine detail and clarity. On complex material the improvement in stability and focus was remarkable; easily comparable to an expensive tonearm, cartridge or power supply upgrade... Any drawbacks? None I could detect..." **Jimmy Hughes (Audiophile, October '93)**

"I found the sound of my LPs improved significantly, reminding me of the experience of listening to records on a Goldmund Reference turntable with a van den Hul Grasshopper

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

Andrew Marshall (Audio Ideas Guide, Winter '94)

Hear what your fellow music lovers say:

"I would agree with everything you claim for this product. The music is more natural, more musical, and with a loss of a certain rawness which persisted, no matter what, beforehand."

Mr. C.R., Northants

"RINGMAT goes on my very short list of things that make differences I care about." **Mr. P.F., Washington D.C.**

"This product must be one of the most cost-effective accessories ever to be offer to music lovers." **Mr. R.A., Norway Can RINGMAT really be that good?**

Yes, it is, but there is only one way for you to find out- try it yourself. But be warned: if you let your best friend borrow it, you will finish up buying another!

Prices

Different versions to suit turntable or budget from £27.50 for RINGMAT 200 to £40.00 for RINGMAT 330 MKII

They can be obtained through good Hi-Fi retailers or on mail order direct from:

RINGMAT DEVELOPMENTS
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 Tel.: 0277 200 210 Fax: 0277 201 225

(p&p: additional £2.50 UK, £5.50 outside)

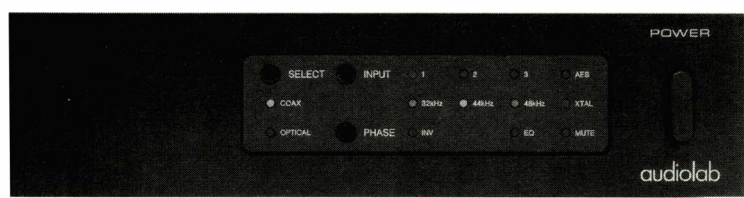
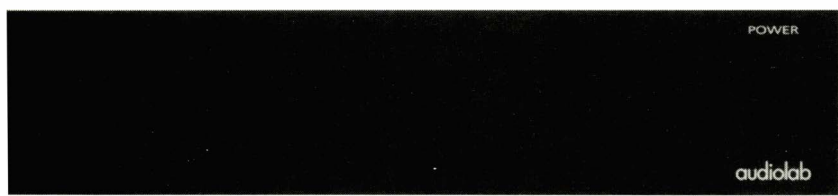
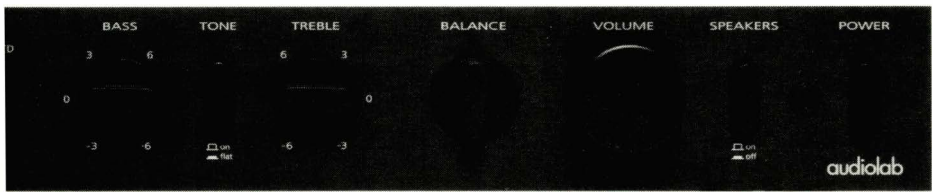
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AUDIOLAB

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:

P	POOR
A-	AVERAGE-
A	AVERAGE
A+	AVERAGE+
G-	GOOD-
G	GOOD
G+	GOOD+
VG	VERY GOOD
E	EXCELLENT

With P being the worst and E the best rating within a section.

One important point to remember is that these cannot be used to compare products from different categories. For example, a cassette deck rated Excellent in sound quality will not usually offer the same

Finding that component

Before you shop, follow our top eight tips for better buying:

1. Check out the components' recommended retail prices in the *Directory*.
2. Find out as much as you can about the products you want by reading *Hi-Fi Choice's* reviews and lab tests.
3. Visit local dealers that stock some of the brands you want to hear and try to find one that seems sympathetic to your needs.
4. Don't discount a dealer's suggestions just because the products don't have rave reviews.
5. Take your own software (records, CDs, tapes) along for a demonstration of the equipment that the dealer recommends.
6. Listen at the sort of volume you would normally use at home — systems often sound more impressive when played loud.
7. If you are unsure about something or want to hear an alternative, just ask.
8. Audition a system for a reasonable amount of time, say three quarters of an hour or so, before making a decision.

standard of fidelity as a similarly rated turntable or CD player. Unless you have first generation masters of course.

Comments

The Comments column contains a potted summary based on the original review, emphasising the salient points of a product's character and sonic performance. The space available doesn't allow for great detail but we have attempted to put across the essence of the review. Obviously, important information on compatibility or auxiliary equipment used in the test cannot be included, and we would advise you to refer to the original review for this.

Please note that these comments are those of our own reviewers and not, as is the case with some magazines, those of the manufacturer.

Features

Product features are shown with a combination of figures and blob charts, with headings at the top of each column indicating the appropriate category, a blob

indicating the existence of a particular feature.

There are different 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.

Index

Amplifiers	124
AV amplifiers	125
Cables	126
Cassette decks	128
CD players	129
CD transports	130
DACs	130
DAT players	131
Headphones	131
Loudspeakers	132
Stack systems	141
Tuners	141
Turntables	141
Cartridges	144
Motor units	145
Tonearms	145

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	£Price	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 class 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	Headphone socket	Remote control	Power amp	Preamp	Issue No.
▲▲ Mission Cyrus III	500	E 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	VG A beautifully crafted amplifier with a vibrantly colourful, almost dramatic sound that's uninterested in technical niceties.	84	6	•	•	•	•	•	•	•	140
▲▲ NAD 302	170	G+ A spritely and uplifting performance. Sounds loud but never intrusive or fatiguing.	39	5	•	•	•	•	•	•	•	116
▲▲ NAD 304	230	G+ Equally effective with CD and vinyl this is another successful and entertaining NAD amplifier for your shortlist	50	6	•	•	•	•	•	•	•	121
NAD 1000S/208	1120	A+ One of the beefiest amplifiers we've ever tested. Unfortunately it sounds too restrained and lightweight.	314	5	•	•	•	•	•	•	•	124
▲ Nakamichi IA-3	350	G A minimalist outing for the cassette heroes that's very confident if a tad restrained.	62	3	•	•	•	•	•	•	•	121
Onix OA31	450	A+ 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	G- Via MM disc this amp comes alive with a fresh and vibrant sound though its CD input sounds utterly dead by comparison.	60	4	•	•	•	•	•	•	•	97
Onkyo A-803	260	A 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	G A remote-controlled amp with a surprisingly fresh and uncomplicated sound that bests much of its audiophile competition	56	5	•	•	•	•	•	•	•	134
Pioneer A-300X	230	A+ This revamped version of the A-300 was also more confident sounding via CD than MM, yet our panel were still left unmoved.	55	5	•	•	•	•	•	•	•	116
▲▲ Pioneer A-400	280	VG Pioneer's design concept snaps into focus with an amp that seems to bubble with musical detail. A budget bench-mark	71	5	•	•	•	•	•	•	•	92
▲ Pioneer A-400X	300	G+ Now firmly in production and thoroughly retested, this erstwhile Best Buy was tonally unchanged but less compelling on audition.	67	5	•	•	•	•	•	•	•	138
Pioneer A-503R	300	A- At its best via MM disc, the dull and claustrophobic sound of this remote-controlled amp is otherwise deeply uninspiring.	75	6	•	•	•	•	•	•	•	138
Pro-Ject 7	259	A 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	G A cost-effective combo, limited in its resolution but less beguiling as a result. Disc stage is sweeter but samey	58	3	•	•	•	•	•	•	•	85
Quad 34	398	A Well-built durable preamp, filtering and above average tone controls but was found lacking in sound quality (viz: detail/dynamics)	4	•	•	•	•	•	•	•	•	44
Quad 66/606	1553	G Amplifiers with a classic lineage but compromised by an equally dated, soft and undynamic sound.	138	6	•	•	•	•	•	•	•	124
Rega Elex	359	A Minimalist amplifier that sounds too forward, hard and unforgiving for its own good. Shows plenty of promise, however.	51	4	•	•	•	•	•	•	•	116
▲ Rose RV-23	450	G+ Beautifully built British 'hybrid'. You can spend more to get a more transparent sound but it's hard to criticise at the price	3	•	•	•	•	•	•	•	•	77
▲▲ Rotel RA-930BX	200	VG A gilded version of the classic RA-930AX with a dark and luxurious sound that's reminiscent of Rotel's heyday.	50	4	•	•	•	•	•	•	•	134
▲ Rotel RA-970BX	300	G Sounds lively, fresh and perky with plenty of power to manhandle tricky speakers. Not so clever with complex recordings however.	99	6	•	•	•	•	•	•	•	138
Rotel RC-980BX/RB-980BX	800	A Plenty of watts per pound, sound is expansive but lacks a sense of poise, of control and fine detail - a disappointment	143	5	•	•	•	•	•	•	•	109
Rotel RA-980BX	425	A This integrated version of the 980BX pre/power is certainly very powerful but also lacks poise and subtlety	139	5	•	•	•	•	•	•	•	129
▲▲ Sansui AUX-417R	280	G+ Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	•	•	121
Sherwood AI-2210	80	P Lightweight in all respects this is better than you'd find on a midi and at least its reasonably painless.	47	4	•	•	•	•	•	•	•	121
Sonic Frontiers SFC-1	1500	G+ Smooth, sophisticated Canadian valve amp with a decent direct input and more features than average	54	6	•	•	•	•	•	•	•	126
Sony TA-F444E	250	A+ 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	G The modern-day relative of Sugden's original Class A amp and one that offers a smooth, easy-going sound.	25	•	•	•	•	•	•	•	•	92
Technics SU-A800mk2	350	A A quick audition might convince you the '800mk2 is something special, but longer term listening shows it's little but bluff.	79	5	•	•	•	•	•	•	•	134
▲ Technics SU-A900mk2	400	G+ A Jeckyl and Hyde amplifier with a dismal-sounding phono stage but delightfully transparent and engaging CD input.	117	5	•	•	•	•	•	•	•	138
Thule Audio IA50	499	A+ Best used as part of Thule's balanced-line system, otherwise its performance lacks any meaty substance.	67	5	•	•	•	•	•	•	•	140
Woodside ISA230	900	A Smooth and inoffensive valve amplifier if one that lacks the sparkle and euphony required for a truly entertaining sound.	27	5	•	•	•	•	•	•	•	116
Woodside SC26/STA35	3254	G+ Synergistic pairing with a cool, controlled sound, good focus and transparency. More about poise than grunt	35	5	•	•	•	•	•	•	•	100
YBA Integre	1199	G+ Audiophile spec French integrated with good resolution and nice phono stage.	57	4	•	•	•	•	•	•	•	121
▲ YBA 1 pre/power amp	8000	E Well finished pre/power amp offers front rank stereo staging and transparency, and is capable of driving the most difficult loads	85	5	•	•	•	•	•	•	•	62
▲ YBA 2 pre/power amp	3849	G+ Superbly finished with very good space and transparency, slightly softened bass. Needs transformer for MC cartridges	70	5	•	•	•	•	•	•	•	56
YBA 3 pre/power amp	2449	G This duo produced see-through, ethereal stereo images that were more convincing towards the centre of the soundstage	56	4	•	•	•	•	•	•	•	72



AV amplifiers

In practice an A/V amplifier provides all the standard CD, tuner, tape, aux and phono inputs offered by a standard stereo amplifier. In addition many also incorporate an AM/FM tuner section, making them A/V receivers.

More importantly a modern A/V amplifier includes a Dolby Pro Logic decoding chip along with extra circuitry to effect the rear channel delay. Naturally there's at least four channel's worth of amplification under the bonnet to feed the five loudspeaker outputs (Front L and R, Centre and

Rear mono L+R).

Some A/V amps offer other surround modes like simulated stereo, Hall surround (L+R is fed to the rear) and Matrix surround (L-R is fed to the rear). Others use an element of Digital Signal Processing (DSP) to steer the Dolby Pro-Logic or permit a variable rear channel delay. Some also include DSP options like Jazz, Church, Hall and Stadium modes which use different delay and steering levels to generate different 'sound fields'. From left to right the headings below indicate

how many watts per channel each amp has for its front, centre and surround outputs.

Surround modes indicates how many different surround effects are available and includes DSP. The audio inputs are for both hi-fi and AV components. S-type and phono video inputs are for VCRs, Laserdisc players and CTVs, S-type being the better of the two.

Subwoofer outputs are of the phono socket variety for active subs, and AM/FM tuner denotes if the unit is effectively a receiver.

▲▲ **Best Buy**
▲ **Recommended**

AV amplifiers

Product	£Price	Comments	Surround output W/8Ω	Surround output W/8Ω	Video inputs	Video inputs S-type	Subwoofer output	AM/FM tuner	Issue No.		
Denon AVC-3530	1000	VG A true heavyweight with a richly detailed sound and flexible features to match	142	141	46	10	9	5	•	•	125
Harman Kardon AVR30	1000	G+ Limited surround options are offset by a very secure sound with excellent control over effects.	74	75	30	7	10	6	•	•	125
Marantz PM-700AV	450	A+ Sounds just great through front and centre channels but surround is very weak.	69	52	51	3	7	6	•	•	125
Philips FR940	450	A- Perhaps as a result of the mismatch between front/centre channels, the FR940 proved a great disappointment on dem.	180	24	24	6	8	4	•	•	125
Pioneer VSA-D802S	600	A- The disappointingly grey sound lacks attack and confidence, undermining the tension of movie soundtracks.	53	55	32	9	9	5	•	•	125
Yamaha DSP-A2070	1200	G+ The ultimate in A/V flexibility with full manual control over ever conceivable soundfield.	101	99	35	24	10	6	•	•	125



Cables

Cables are not accessories but an integral part of your system. You can make do without accessories but no conventional system will function without cables. Inevitably some cables are greater than others. The best cable for your system will only be found through trial and error, but hopefully by combining our recommendations with those of a dealer you will end up with something that suits both your pocket and your system. Generally speaking budget to spend about ten per cent of the total system cost on cables.

Analogue interconnects are the leads that

connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one metre terminated pair. Symmetrical indicates where a twisted pair of conductors are used.

Coaxial means that there is a central 'hot' conductor and a shield that carries the negative signal. Stranded cables have multiple strands and solid core use individually insulated strand(s). Copper and silver indicates whether these metals are used as conductors.

Digital interconnects connect CD transports to

DACs, and are traditionally coaxial with a 75ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass and the latter in coaxial or alternative configurations. The prices shown are for a terminated linear metre

Speaker cables are used between the amplifier and speaker. Our prices are for a terminated 5metre pair. Resistance and capacitance are indicated as low (L), medium (M) or high (H). Neither high resistance nor high capacitance cables are suitable for long runs.

▲▲ **Best Buy**
▲ **Recommended**

Analogue interconnects

Product	£Price	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Silver	Issue No.
Audio Note AN-A	29.50	A- A well-rounded and cuddly sound from a high-ish resistance interconnect. Lacks a sense of scale and dynamics		•					108
Audioquest Ruby Hyperlitz	70	A+ A crisp, fast and articulate-sounding cable if one that's a little too pointed for our listeners		•			•	•	108
▲ Audioquest Lapis Hyperlitz	329	E An expensive cable that justifies its tag with a beautifully poised sound - natural, relaxed and very compatible.		•			•	•	108
Audio Technica AT620	28	A Plenty of cable for the money but its performance is distinctly lightweight, lacking depth and subtlety			•	•		•	108
Chord Chameleon	59	A+ An unpredictable cable with an 'anomalous treble' that can sound harsh one moment and oddly recessed the next!			•	•		•	108
▲ Chord Solid	115	VG What looks like a military RF cable actually provides a slightly forward but incisive and intimately detailed performance			•		•	•	108
▲ Cogan-Hall Intermezzo Ref	185	E A user-hostile cable with a tight, convincing bass allied to a very relaxed and involving mid/treble.		•			•	•	108
Cogan Hall Intermezzo E-M	320	G+ This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser		•			•	•	108
▲ DNM Interconnect	40	VG Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners		•			•	•	108
Goldring 'Studio Quality'	20	A- A bog-standard OFC coaxial cable that might otherwise be given away with a new amp or CD player. Cheap but nothing special		•		•		•	108
▲ Isoda Electric HA-08-PSR	199	G+ This odd-ball cables utilises a mix of copper, brass and aluminium strands to achieve a very distinct sound		•		•		•	108
▲ Madrigal HPC	215	VG A very unusual cable design with a business-like approach to music-making that barely conceals its underlying 'fizz'		•		•		•	108
Magnan Type Vi	595	A+ With a series resistance some 500-1000 times higher than average, the furry sound of the Type Vi will alter from system to system.			•	•		•	108
▲ Monster Interlink 500	60	G+ Plenty of hype to keep the marketing bandwagon rolling plus a lively and lucid balance to cheer up the enthusiast		•		•		•	108
▲ Moth Ley Line Black	100	G+ The cheapest of Moth's Ley Line series uses just two twisted conductors to achieve a very solid and confident sound.		•			•	•	108
Moth Ley Line Grey	200	G+ The four twisted conductors of this cable actually mark a downturn in audio quality		•			•	•	108
▲ Panasonic RP-CA910	50	G This conventional coax employs plenty of hi-tech materials which encourage an even-handed balance. A good upgrade.			•	•		•	108
▲ Silver Sounds 12/2 and 12/3	99/150	VG Both these cables share a similarly open, transparent and dynamic sound though the latter is arguably the better integrated		•		•		•	108
Sonic Link Yellow	60	A An interesting non-copper cable with an up-front sounded described as 'heavy-handed and pushy'			•		•		108
▲ Sonic Link Violet	99	G+ Another nickel-based cable but with a very much better-balanced sound than Sonic Link Yellow			•		•		108
Straight Wire Laser Link	50	A+ Thanks to its high parallel capacitance this interconnect helps remove ultrasonic noise. Unfortunately it still sounds very odd!		•		•		•	108
Straight Wire LSI-Encore	90	A+ A solid-sounding cable with a strong mid and bass but a disappointingly sat-upon treble		•		•		•	108
▲ Tara Labs Prism	36	G 6N-purity copper, aero-grade insulation and spaced solid-core conductors all add-up to a slightly bright but frisky sound		•			•	•	108
▲ Tara Labs Quantum CD	63	G+ Praised by our panel for its lack of obvious vices, Quantum CD encourages a sweet and positive sound.		•			•	•	108
Tara Labs Quantum II	99	G Bass power and extension is the key to the sound of this unusual and hi-tech cable		•			•	•	108
▲ van den Hul The Source	70	G+ Accurately reflects the life of the music without detail forcibly from the speakers			•	•		•	108
van den Hul MC D-102mkill S	80	A+ A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble		•		•		•	108



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Digital interconnects

Product	£Price	Comments	Type	Issue No.				
				Plastic	Glass	Non-coaxial Coaxial	75-Ω	
▲▲ Audioquest Video Z	50 E	The very best available with an expressive sound but generous price to sweeten the pill	Electrical			•	•	108
Audioquest Digital PRO	90 A+	A silver cable with all the drive of Video Z but lacking its clean-cut transparency	Electrical			•		108
Audioquest Optlink Z	100 A	Good level of midband detail but frequency extremes lack depth and extension	Optical		•			108
Bandridge AL560	20 P	The disappointingly heavy and muddled sound of this basic fibre thwarts any recommendation	Optical	•				108
Chord Codac	34 A	A connection with a stranded inner core and a sound that lacks integration	Electrical			•	•	108
▲▲ DPA Digi-link	27.50 VG	Can seem slightly impressive but there's no avoiding its exceptionally detailed sound	Electrical			•	•	108
DPA Opti-link	20 P	Very similar to Bandridge AL560 with an equally naff sound	Optical	•				108
Kimber PSB Digilink	24 A-	An analogue interconnect inappropriately pressed into digital service. A visible deterioration in the digital signal results.	Electrical				•	108
Kimber KC-1 Digilink	52 A	This cable adopts a woven construction with the addition of a conductive screen. Music lacks detail and spirit.	Electrical				•	108
Kimber KC-AG Digilink	222 A-	An asymmetric cable using silver conductors that deviates from the 75ohm standard. Not ideal for digital applications.	Electrical				•	108
▲ Kimber Opti-Link	70 G	Hardly cheap for what appears to be a bog-standard PMMA fibre, yet it sounds a little brighter and livelier than most.	Optical	•				108
▲ Monster Cable Datalink 100	45 G+	A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible.	Electrical			•	•	108
▲ Monster Cable Interlink LS100	45 G	Well constructed stepped-index fibre with polished ends and rugged connectors. Slightly lean, fuzzy but engaging performance	Optical	•				108
Moth Leyline Datalink	140 A-	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive.	Electrical			•	•	108
▲▲ QED Digiflex	19 VG	A top performance, low-loss 75ohm coax with a very open, almost liquid quality that allows its music to ease naturally across.	Electrical			•	•	108
Sonic Link Brown Digital	35 A-	A solid-core, twisted-pair interconnect that deviates from the 75ohm standard and provides an equally unbalanced sound	Electrical				•	108
Straight Wire Silver link	60 G+	A genuine attempt to get things right with a silver-plated, multi-strand coax. Yet it still sounds too dry and mechanical	Electrical			•	•	108
▲ van den Hul MC Videolink 75	30 VG	An AV-cum-digital cable that comes very close to besting QED's Digiflex. Still some emphasis of vocal sibilants, however	Electrical			•	•	108

Speaker cables

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper		Silver	Issue No.
							Copper	Silver		
▲ Audio Note AN-B	165 G+	A very high capacitance Litz-style cable whose sound may well act as a taming influence in many systems	M	H			•	•		109
Audio Note AN-D	100 A	Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather gritty and forward	L	L	•			•		109
▲ Audio Note AN-SP	1270 VG	Some 15 individually-insulated silver strands go to make up this very civilised but exceptionally detailed-sounding cable	H	L			•		•	109
▲ Audioquest F-14	44.50 A+	Ideal for laying flat under carpets, F-14 encourages a slightly warm and vibrant sound	M	L			•	•		109
Audioquest Type 4	75 A+	Four 18-gauge OFHC copper conductors wound in a Litz-fashion increases capacitance but restrain the cable's 'bite'	M	H			•	•		109
Audioquest Midnight Hyperlitz	260 G	Very similar to Type 4 but with a delicate smoothness that contrasts with the brighter sound of cheap cables	L	H			•	•		109
▲ Bandridge LC7259 & LC7401	20/30 A	Two very traditional figure-of-eight cables. The thinner version (LC7259) sounds lighter and coarser than LC7401	L	L	•			•		109
Bandridge LC8258 & LC8408	30/50 A-	Two versions of the Silverflex series that, sadly, encourage very little sense of poise or decorum in their music	L	L	•			•	•	109
▲ Cogan-Hall Intermezzo Full-Range	465 VG	Extra care must be taken to prevent shorting this user-hostile cable. Nevertheless it sounds superb!	L	L			•	•		109
▲ DPA IS19	275 G+	Shares the clear, neutral and transparent sound of the older 8S without the tremendous clarity of Gortex Black-16	L	L			•	•	•	109
▲ DNM Rainbow	84 A+	High impedance can influence the treble response of some speakers. But this was an out and out winner on sound per pound	H	L			•	•		109
Heybrook Heywire	66 A	This well-meaning facsimile of earlier ribbon-style cables ends up sounding lumpy and uneven	H	L			•	•		109
Isoda Electric HA-20	400 A+	This unorthodox cable employs a combination of copper, brass and aluminium strands. It sounds 'oddy impure'!	M	L	•			•		109
▲ Mission Stranded	20 G+	This Swedish-made cable proved a real hit with our listeners - a slick performer and Best Buy upgrade	L	M			•		•	109
Monitor PC KC27/KC34	40/60 A	Two heavyweight multi-strand cables with a thick and chesty (10027) or light and wispy (10034) balance. Take your pick	L	L	•			•	•	109
Monster Powerline 3 Plus	75 A-	The archetypal 'old-style Monster Cable' that labours under a soggy bass and untidy treble	L	M			•		•	109
Naim NAC A5	44 A-	Described as a 'dinosaur of a cable' by our listening panel, this stiff rod of wire has little application outside of a Naim system	L	L	•			•		109
QED Bi-wire 79-Strand	35 A	Reminiscent of curtain track, this bi-wire version of 79-strand is unfortunately saddled with a 'loud, hard and untidy' balance	L	L	•			•		109
▲ Silver Sounds 12/2	300 E	Tonally accurate and exquisitely detailed, this cable opens a very transparent window on the music	L	H			•	•	•	109
▲ Silver Sounds 16/4	200 VG	A prime choice for bi-wire systems even if this cable does lack the full finesse of its sister 12/2	M	H			•	•	•	109
Sonic Link Grey	80 G-	A spaghetti-thin cable composed of silver-plated OF-copper and PTFE insulation. Lacks bass impact and treble 'air'.	H	M			•	•	•	109
▲ Straight Wire Waveguide 1.5	20 G	A conventional multi-stranded cable with a refreshingly up-beat, crisp but slightly lean-sounding balance	M	M	•			•		109
▲ Straight Wire Flex-4	50 G+	Another very quick and dynamic-sounding cable from Straight Wire. A little short on subtlety but very engaging nonetheless.	L	H	•			•		109
Tara Labs Quantum III	238 G	An imaginatively-named cable that encourages an equally colourful sound. Described as 'dark and fruity' by our panel!	L	H			•	•		109
van den Hul MC The Clearwater	50 A	Despite its evocative title, the Clearwater turns out to be a disappointingly 'murky sounding' cable	M	L	•			•	•	109
van den Hul MC The Magnum	265 A	Touted as vdH's most prestigious twinlead speaker cable, the Magnum sounds surprisingly soft and old-fashioned	L	L	•			•	•	109
▲ van den Hul MC The Wind	330 VG	Blown-in from the continent, vdH's 'Wind' kicks up a storm with its lush midrange and bone-crunching bass!	L	M	•			•	•	109

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Cassette decks

The bad odour of copyright theft hangs around the compact cassette, but there is no doubt it is the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but are happy to use cassette decks to make up tapes for the car or personal.

There is no problem in connecting a cassette deck to any normal amplifier, but some care needs to be taken in choosing the best tapes for a specific machine. (Trial and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape automatically.) Lab

performance and sound quality often go hand in hand, and are frequently somewhat dependent upon factory alignment. The mechanical integrity of the mechanism is another crucial factor, that is reflected in the price.

The columns on the right indicate when the facilities shown in the headings are available on a deck. Dolby B and C offer varying degrees of noise reduction and the HX Pro system gives significant treble improvements with ferric (Type I) tapes. Dolby S increases the level of noise reduction with less signal degradation than B or C. Three-head

recorders allow you to listen to a recording as it's being made, a useful quality control function. Bias adjustment allows you to fine tune the deck to suit different types of tape when recording. Auto calibration is an automatic system for setting bias and Dolby levels.

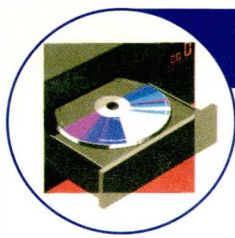
Twin deck offers the option to dub tapes or to play two cassettes simultaneously. Autoreverse is a useful convenience feature, but usually with some mechanical compromise. In the case of twin decks a blob is inserted in this column even if only one transport autoreverses.

▲▲ **Best Buy**
▲ **Recommended**

Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Bias adjust	Auto calibration	Twin deck	Autoreverse	Issue No.
▲▲ Aiwa AD-F450	120	VG Basic but well designed budget deck; astonishing value, only the poor metering gives the game away	•	•	•						•	136
▲▲ Aiwa AD-F810	230	G First class budget 3-head machine with a dual capstan transport that really works at reducing the 'fudge' factor	•	•	•						•	99
▲▲ Aiwa AD-S950	300	VG High value, high spec package featuring Dolby S, 3 heads, tape calibration - well set up and musically well sorted.	•	•	•	•	•	•			•	140
▲▲ Aiwa AD-WX828	200	G- Equipment levels strong, and sound is both vivid and presentable, but control system daunting.	•	•	•						•	123
▲▲ Aiwa AD-WX929	230	A Superbly equipped twin deck that works and works well - remote control	•	•	•	•					•	117
▲ Aiwa XK-S9000	700	G+ Fabulous build, clunky transport and sharp, refined sound quality with Dolby S or B and metal tapes	•	•	•	•	•	•			•	105
▲ Arcam Delta 100	850	E Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•	•			•			•	111
Denon DRM-740	260	A Breathed-on DRM-710, with good external treatment offers good, if somewhat detached sonics	•	•	•			•			•	136
▲ Denon DRS-610	200	G Unique loading mechanism provides stability, and the deck has a crisp, clean quality. Occasionally anaemic bass.	•	•	•						•	111
▲ Denon DRS-640	200	VG Drawer loading deck, with simple facilities and smooth, well adjusted sound.	•	•	•						•	140
Denon DRS-810	300	G- Drawer loading deck, carefully designed, yet lacking in subtlety on audition.	•	•	•						•	127
Goodmans Delta 700W	100	P Compact and ultra-basic twin deck which is rough and bass shy, with less than stable tape path.	•								•	123
Harman/Kardon TD420	280	A+ Minimalist audiophile deck, with good but not outstanding sound quality, and mediocre setup of the test sample.	•	•	•						•	140
▲ Harman/Kardon TD4400	350	G Simple features plus excellent engineering make this a model of integrity.	•	•	•						•	127
Harman Kardon TD4600	700	A Original Dolby S deck has improved over the years and now sounds very acceptable. A strong, solid sounding deck - but expensive.	•	•	•	•					•	117
JVC TD-R452	180	A- Tidy, stable but ultimately rather soul-less experience. Auto-reverse is useful though.	•	•	•						•	117
JVC TD-X352	150	A- Disappointingly amorphous sound despite decent measured results.	•	•	•						•	117
▲ JVC TD-V562	200	G+ Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque.	•	•	•						•	123
▲ Kenwood KA-5060S	250	G Well engineered single capstan transport and Dolby S star in this refined and detailed sounding design.	•	•	•	•	•				•	140
NAD 602	200	G Minimalist deck for the audiophile market. Unfortunately engineering is minimalist too	•	•	•						•	127
▲ Nakamichi DR-3	400	VG Refined, exquisitely detailed and solid sounding 'budget' Nakamichi 2-header.	•	•	•						•	123
▲ Nakamichi DR-2	600	VG Accomplished design with simple features (manual tape select!) but superb sound/serviceability.	•	•	•						•	127
▲ Nakamichi DR-1	850	VG Typically idiosyncratic Nakamichi with manual everything. Good azimuth adjustment and dynamic, authoritative sound.	•	•	•						•	117
Onkyo TA-201	200	A- Slightly old fashioned no-frills design, with some wow & flutter, and limited metal tape headroom.	•	•	•						•	140
Philips DCC600	500	A+ Simplified circuit and mechanism, but the Philips badly needs a D/A converter transplant	•	•	•						•	123
▲▲ Pioneer CT-S430S	200	VG Against the odds - a 2 head Dolby S deck that works. Well set up and fully equipped.	•	•	•	•					•	136
▲ Pioneer CT-S520	280	G Decent if slightly coloured middle ranker with FLEX to revitalise old or soggy sounding tapes.	•	•	•						•	123
▲ Pioneer CT-S630S	300	G+ 3 heads and Dolby S feature in an excellent deck that is underbiased with Type IV tapes.	•	•	•	•	•				•	140
Sansui D-X117WR	220	P Bass is thin and coloured, and the sound lacks dynamics, pitch accuracy and overall stability - the sound is neither stable nor solid.	•	•	•						•	111
Sherwood DD-3010C	120	P Good range of features, let down by poor transport and iffy electronics.	•	•	•						•	117
Sony TC-K415	180	A+ Mainly UK designed with audiophile intent, but spoiled by erratic output, at worst with metal tapes.	•	•	•						•	136
Sony TC-K515S	250	A+ Transport limitations and some brightness slightly mark down this refined, articulate design.	•	•	•	•	•				•	140
▲▲ Sony (WMD6C) Pro Walkman	290	G+ One of the finest sounding cassette decks on the market today. A mandatory Best Buy, which also fits in your pocket	•	•	•						•	60
▲ Sony TC-K611S	300	G Cheapest Dolby S three header yet, yet slightly let down by lack of attention to detail	•	•	•	•	•				•	127
Teac R-9000	500	G Much better than average auto-reverse deck, well worth considering. Nicely engineered too.	•	•	•	•	•				•	105
▲ Teac V-8000S	700	G Superb stability and real subtlety, this must be the best TEAC yet. The only disappointment was the Dolby C	•	•	•						•	105
▲ Technics RS-BX501	180	G+ This is a well priced auto-reverse deck, with good sound quality and pricing.	•	•	•						•	140
▲ Technics RS-BX646	230	G+ Unusually well built and non-microphonic deck with sophisticated facilities and lucid midband.	•	•	•						•	127
▲ Technics RS-BX701	270	G+ Not cheap, but extremely well built deck, moderately well equipped a pleasure to operate and to listen to.	•	•	•						•	136
▲ Yamaha KX-650	260	G Fine audio manners, especially in the midband and treble, mark this high class deck out from the crowd	•	•	•						•	99

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CD players

Now over a decade old, this all digital music source is well established despite high disc prices and the opposition of some hi-fi enthusiasts. Compact Disc's strengths over conventional vinyl are complete freedom from surface noise, ease of use, and more robust software.

However, many vinyl enthusiasts still find CDs sound less involving than top quality vinyl. But, with the dominance of CD in the high street, even vinyl die-hards need a CD player today.

The columns on the right indicate when the facilities shown in the headings are available on a CD player: DAC type indicates the type of 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	Comments	DAC type	Electrical digital output	Optical digital output	Remote control	Track entry keypad	Headphone socket	Variable output	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 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 pussypoos around gentle ballads	Bitstream	•	•	•	•	•	•	132
▲ Philips CD732	140	A+ A cross between Philips CD690 and CD920 is no more technically accomplished but encourages a very lively and entertaining sound	SAA7341	•	•	•	•	•	•	128
Philips CD740	170	A One of several Philips players using a hybrid of DAC technologies. Still sounds insufferably boring, however.	Hybrid	•	•	•	•	•	•	139
Philips CD750	200	A+ The costliest player in Philips range and the last to use its BS DAC lacks a sense of integration and stereo focus.	PDM Bitstrm	•	•	•	•	•	•	137
Pioneer PD-S503	200	A The cheapest Legato Link player yet but another that sounds unpredictable and generally hard work.	PFM Bitstrm	•	•	•	•	•	•	139
▲ Pioneer PD-S703	300	G+ Legato Link and bitstream are combined into a cheaper IC though the player sounds as manipulative and intriguing as ever.	PFM bitstrm	•	•	•	•	•	•	137
▲ Pioneer PD-S901	500	G+ The very refined but confident, crisp and powerful sound of the '901 snatches Pioneer's LLC concept from the jaws of defeat	PFM Bitstrm	•	•	•	•	•	•	119
▲▲ Quad 67	790	E Deceptively sleek in appearance but with a powerful, fluid and captivating sound reminiscent of Meridian's 206.	Crystal BS	•	•	•	•	•	•	124
Rotel RCD-940BX	230	A- A sea-change in transport and DAC technology lies behind the most untidy-sounding and irritating player to emerge from Rotel.	Hybrid	•	•	•	•	•	•	137
▲ Rotel RCD-945AX	230	G Based on the same CD-player-on-a-chip as Philips CD690 but with improved execution and build.	SAA7341	•	•	•	•	•	•	124
▲▲ Rotel RCD-965BX	300	E An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	PDM Bitstrm	•	•	•	•	•	•	100
Sansui CD-X317	250	A Not in the same class as older CD-X311mkII. Same technology but the sound is neither as responsive or engaging	MASH/PWM	•	•	•	•	•	•	107
Sansui CD-X617	350	A This 'double-DAC' version of the CD-X317 is more impressive, sounding light and tizzy with pop but dull with classical CD's	MASH/PWM	•	•	•	•	•	•	112
Sansui CD-Alpha 717DR	1560	G+ A beautifully constructed if rather dated flagship player with an equally sedate and unadventurous sound.	MASH/PWM	•	•	•	•	•	•	124
▲▲ Sherwood CD-3020R	130	G Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	•	119
▲ Sherwood CD-5010R	160	G+ A warm, detailed and enjoyable performance from a solidly built but affordable package.	PDM Bitstrm	•	•	•	•	•	•	124
Sherwood CDC-5030R	200	A- The replacement for the successful 5-disc CDC-5010R sounds messy, disjointed and generally unpleasant. A great disappointment	Bitstream	•	•	•	•	•	•	132
Sony CDP-312	150	G Something of a rough diamond, offering a raft of features and good build but a decidedly technicolour sound.	PLM bitstrm	•	•	•	•	•	•	139
Sony CDP-C345	230	A+ Sony's Hybrid Pulse DAC sounds great in the CDP-311 but in this 5-disc carousel it provides a mere skeleton of a performance	PLM Bitstrm	•	•	•	•	•	•	132
▲▲ Sony CDP-715E	250	E Advanced Pulse technology collides with UK tweaking to produce one of the most fabulous CD players in recent memory.	PLM bitstrm	•	•	•	•	•	•	137
Sugden SDT-1	850	A Bearing in mind Sugden's SDA-1 converter lies at the heart of this player, its unpredictable performance is disappointing	16-bit	•	•	•	•	•	•	119
Teac CD-P3500	200	A A well-meaning attempt to pare-down the CD-P4500 results in a similar looking player with a thoroughly uninspiring sound	PDM Bitstrm	•	•	•	•	•	•	112

CD players continued

Product	Price	Comments	DAC type	Electrical digital output	Optical digital output	Headphone socket	Track entry keypad	Issue No.
▲ Teac CD-P4500	280	G TEAC's first genuine 1-bit player its sound described as having a certain 'organic warmth', very composed and easy-going.	PDM Bitstrm	•	•	•	•	107
Teac VRDS-10	770	A+ A basic analogue stage compromises the potential of TEAC's superb engineering and digital electronics. Lacks bass energy	DAC7	•	•	•	•	119
Technics SL-PG460A	160	A Sadly this player lacks the fire of Technics' earlier budget wonders. It looks similar but sounds terribly apathetic.	MASH/PWM	•	•	•	•	139
▲ Technics SL-PG440A	170	G This mix of the SL-PG520 and '420 fails to benefit from the strengths of either and only just achieves recommendation.	MASH/PWM	•	•	•	•	124
▲ Technics SL-PS620A	200	G+ A costlier, tarted-up version of the SL-PG520A that loses very little in the way of clarity, sparkle or in compelling dynamics	MASH/PWM	•	•	•	•	112
Technics SL-PS740A	250	A Nothing wrong with its technical heritage but Technics' ongoing 'improvements' only serve to stifle the sound of this player.	MASH/PWM	•	•	•	•	137
Yamaha CDX-670	290	G- Yamaha has retained the CDX-660 casework but cut costs with a new multi-task IC that's not entirely de-bugged.	PDM Bitstrm	•	•	•	•	124



CD transports and DACs

A CD player can be split into two basic components; the disc drive or transport, and a device which turns the digital bitstream coming off the disc into an analogue audio signal. This is called a digital to analogue convertor or DAC. Although most players are contained in a single box, expensive players are usually two box affairs.

Although many of these units will be purchased as matching pairs, a DAC can also be

used to upgrade an existing CD player. Thus an early machine with a satisfactory transport can be rejuvenated by adding an outboard DAC.

The columns on the right indicate the facilities available on a transport or DAC. Remote control is self explanatory. The existence of electrical and/or optical digital in and outputs is pretty fundamental to transports and DACs, as a rule electrical outputs are the most desirable. Class 1 transports are those with an output whose crystal clock accuracy that's

better than ± 50ppm (parts per million), certain DACs won't lock onto transports with a lower clock accuracy. DAC type shows the specific convertor chip employed. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound. Phase inversion in the digital domain can make quite a big difference if you've got a high resolution system and golden ears.

▲▲ **Best Buy**
▲ **Recommended**

CD transports

Product	Price	Comments	Electrical digital output	Optical digital output	Class 1	Issue No.
▲ Arcam Delta 250	750	G+ Arcam's best effort yet is a new design based on the Philips CDM9 transport; specification includes Sync Lock facility.	•	•	•	130
▲ Counterpoint DA-11E	1495	VG By rights this transport should be highly incompatible yet it delivers a remarkably vivid and natural sound.	•	•	•	130
▲ Meridian 200	895	G+ Broadly compatible and offering a light, fresh and very bubbly sound that is both natural, engaging and unfatiguing	•	•	•	96
TEAC P-2	3500	G Beautifully styled and constructed but sound is bleached and generally less inspiring than that of the P-10	•	•	•	96
TEAC P-2s	4300	A+ The latest version of Teac's luxury P-2 transport sounds as over-engineered as it looks.	•	•	•	130
▲ Theta Data Basic	1990	G+ A mild-mannered transport capable of marvellous results with lively-sounding outboard converters.	•	•	•	130
Wadia 8	3195	G Includes a budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer.	•	•	•	130

DACs

Product	Price	Comments	DAC type	Electrical dig output	Optical digital output	Phase invert	Issue No.
▲▲ Arcam Black Box 50	450	VG A very measured and sophisticated sound from a DAC that leaves plenty in reserve to accommodate future upgrades.	Hybrid	•	•	•	127
Arcam Delta Black Box 500	750	A+ A very sophisticated unit equipped with Sync Lock and discrete DAC circuitry. Early samples sounded restrained and grubby.	Bit Stream	•	•	•	136
▲ Audio Alchemy DAC-in-the-Box	200	G Despite its slightly veiled sound this giveaway DAC may still rescue the oldest of players from obsolescence.	18-bit	•	•	•	127
Audiolab 8000DACmkII	750	G Just as smooth and refined as its predecessor yet, sadly, still manages to obscure the passion or fire of music.	DAC7	•	•	•	127
Audio Note DAC 1	600	G An oddball DAC with manual de-emphasis switching. Needs a high preamp input impedance if bass is not to suffer.	20-bit	•	•	•	127
AVI S2000MD	549	G Despite using a very different chipset, the S2000MD sounds as civilised and refined as AVI's other digital separates.	16-bit	•	•	•	136
▲ Cambridge Audio DACMagic-1	150	VG Ridiculously under-priced, this DAC is better suited to high-end transports than the budget players it was intended to partner.	Hybrid	•	•	•	136
DPA Digital Little Bit II	400	G A new on-board mains filter promotes a smoother and richer sound at the expense of some life and vitality.	SAA7350	•	•	•	127
▲ DPA Digital Bigger Bit	695	G With either P-10 or Meridian 200 transports it delivers a very taut and dynamic sound, bathed in an open acoustic	DAC7	•	•	•	103
Kinshaw Overture	235	A- A neat enough package that's infested with a variety of technical bugs and severely chastised on audition.	Hybrid	•	•	•	136
▲ Kinshaw Perception	745	VG A two-box converter that sounds loud, quick and very dynamic without tripping over complex material. A good 'un.	Hybrid	•	•	•	136
▲ Meridian 563	695	G+ Warmer but no less detailed than the earlier 200-series, the 563 really comes into its own with top-flight CD transports.	Crystal	•	•	•	127
Meridian 606 DAC7	1350	G By refining the 203's sound further Meridian have also tempered its vibrancy and 'life'. Fickle with other transports	DAC7	•	•	•	101
Micromega Duo BS2	600	G Has a tendency to sound light, airy and 'fast' but it can also become a little hard or - fatiguing with some digital outputs	SAA7321	•	•	•	101
Micromega Microdac	300	A+ Described as a modest but entertaining performer, achieving its sweetest balance with Arcam's D170.3 transport.	SAA7321	•	•	•	113
▲ Mission DAC5	300	G+ Another modest DAC but one capable of a lean but clean and detailed sound that's typical of the DAC7 breed.	DAC7	•	•	•	113
▲ Musical Fidelity Tubalog	499	G+ The animated character of the Tubalog ensures it's a great upgrade on budget CD players.	18-bit	•	•	•	127
▲ Pink Triangle Ordinal	750	E The cheapest dual-differential DAC7 converter available. Offers interchangeable digital filters and top-flight sound quality.	DAC7	•	•	•	136
▲▲ QED Digit	139	G+ Bearing in mind its expressive but very forging performance the Digit is almost embarrassingly cheap	PDM Bitstrm	•	•	•	113
▲ QED Digit Reference	425	G+ No great advance over the basic QED Digit yet its enthusiastic sound is more than competitive at the price.	Bit Stream	•	•	•	136
Select Systems Dacula	400	G The overly warm and heavy bass of this DAC is quite atypical of the Crystal Bit Stream DAC.	Crystal	•	•	•	127
▲ Sugden SDA-1	749	G+ A pleasant surprise from the fuddy-duddies of audio, judging by its 'masses of high resolution detail and tremendous dynamics'	TDA1541	•	•	•	113
Thule Audio DAC-200	799	A A good first effort from Thule even though its fizzy and over-eager sound could do with house-training.	DAC7	•	•	•	136
Woodside DAC1	909	G Fine but slightly dated and costly package in performance terms - but flexible, musical and t well built	16-bit	•	•	•	87
▲ Woodside DAC2	509	G+ Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•	•	•	101

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	VG A very sophisticated combination that sounds silky-smooth without appearing soft or sugar-coated. A bargain two-box player.	Hybrid	•	•	•	•	•	•	133
Audio Alchemy DDS/DTI/XDP/P52	2047	A+ A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	•	120
▲ Cyrus Discmaster/Dacmaster	1900	G+ A powerful-sounding and perhaps slightly heavy-handed combination that cuts right to the heart of its music.	20-bit	•	•	•	•	•	•	133
DPA Digital T-1/PDM2mkII	3245	G An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	•	120
DPA Digital T1/PDM 256	3890	G A highly advanced duet with adjustable dither facility. Sadly its different settings only usher-in different compromises.	Bit Stream	•	•	•	•	•	•	133
▲ EAD T-1000/DSP-1000	2195	VG A two-box player based on Pioneer's Stable Platter CD transport. Its music always sounds fast, furious and fascinating.	20-bit	•	•	•	•	•	•	120
Linn Karik/Numerik	2495	G+ Partnering Linn's Numerik DAC with its Karik CD player (as transport) provides a dry, dynamic but also slightly dirty sound.	20-bit	•	•	•	•	•	•	120
Meridian 200/263	1390	G Now updated with Crystal Bit Stream technology, this popular duet has unfortunately lost much of the charm and poise of the original.	Bit Stream	•	•	•	•	•	•	120
Meridian 500/563	1670	A+ Combined with its own 500 transport, the recommended 563 sounds disappointingly thin, brash and uncomfortable.	Crystal	•	•	•	•	•	•	133
▲ Meridian 602/606	3100	VG Meridian's top-of-the-range two-box player looks and sounds both distinctive and elegant, the perfect partner for a cultured system!	DAC7	•	•	•	•	•	•	120
▲ Monarchy Audio DT-40A/M-33	3090	VG An intriguing combination that provides a beefy and enthusiastic performance via its balanced AES/EBU connection.	20-bit	•	•	•	•	•	•	133
Proceed PDT3/PDP3	5214	G+ The third in a series of unusual transport/DAC combinations and a pairing that retains a powerful, confident and rugged sound	20-bit	•	•	•	•	•	•	120
▲ PS Audio Lambda/Ultralink Two	4900	VG In direct contrast with its appearance, this duet positively sparkles with colour and resonant detail.	20-bit	•	•	•	•	•	•	133
▲▲ Teac P-700/D-700	1500	VG They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•	•	•	•	120
Teac P-2s/D-2	6000	A- Teac's VRDS statement looks a million dollars but sounds rather thin and uninvolved. A great disappointment.	18-bit	•	•	•	•	•	•	133
Theta Data Basic/Cobalt 307	2696	G+ A cautious and slightly over-refined combination that fails to make the best of either component.	Hybrid	•	•	•	•	•	•	133



DAT players

DAT, or digital audio tape, has been on the market for quite some time now but has never really 'made it' as a consumer medium, probably due to the fact that very little prerecorded software has been made available. In the last year or so it has begun to carve itself a niche at the top end of the market replacing reel

to reel tape recorders as the audiophile's tape based medium.

The DAT standard specifies a 48kHz sampling rate, which is higher than CD, so direct copying in the digital domain is only possible on those machines with dual sampling frequencies, ie 48kHz and 44.1kHz. Some machines also record at 32kHz

to give a longer recording time for a given length of tape, this is shown in the LP mode column.

The optical and electrical in/outputs in the column headings are for digital signals, analogue in/outputs are universal. The AES/EBU and S/PDIF socketry is for connection to professional components such as mixing desks.

DAT players

Product	£Price	Comments	LP mode	Remote control	Optical in/out	Electrical in/out	AES/EBU in/out	S/PDIF in/out	Issue No.
JVC XD-Z1010TN	900	A+ Ambitious but ultimately disappointing deck with an opaque musical delivery and more features than you can shake a stick at	•	•	•	•	•	•	111
Panasonic SV-3700	1111	A Slick, powerfully equipped, this pro DAT has a clear, quick and colourful sound somewhat lacking in weight and substance	•	•	•	•	•	•	111
Tascam DA-30	1199	A+ Interesting pro DAT deck with solid, tangible sound quality which is nevertheless lacking in analysis	•	•	•	•	•	•	111



Headphones

There are a variety of different approaches to 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	A Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural	•	•	•	•	99
AKG K135	46	A The K135s don't live up to the usual AKG standards, though they do have the ability to reproduce rhythm well	Supra-aural	•	•	•	•	63
▲ AKG K240 Monitor	82	G Something of a classic, these AKGs are very user friendly in all respects; sonically on the warm side of neutral	Circumaural	•	•	•	•	63
▲ AKG K280 Parabolic	117	G+ A very revealing and unusual twin driver design that uses the same principle as a satellite dish to beam sound into the ear	Circumaural	•	•	•	•	63
▲ AKG K340	191	E Heavyweight cans in most respects, the K340 with its electrostatic tweeter is a very revealing headphone	Circumaural	•	•	•	•	75
▲ AKG K400	118	VG Comfortable over long sessions. Sound is exquisitely detailed, dynamic and uncoloured	Supra-aural	•	•	•	•	121
▲ AKG K500	138	G+ Open and clear, they reproduced music with impressive definition, balance is on the light side but transparency is high	Circumaural	•	•	•	•	111
▲ AKG K1000	646	E One of the best dynamics on the market, hooks directly to speaker outputs and makes much of the competition sound lame	Extra-aural	•	•	•	•	99
▲ Audio-Technica ATH-910	90	G The closed-back 910s are an improvement on the 909s with a nice rhythmic quality rarely found with headphones	Circumaural	•	•	•	•	55

Headphones continued

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
Audio-Technica ATH-9000	246	G Electrorets which connect to the amps speaker outputs, it sounds a little too smooth but would suit aggressive amps	Circumaural	•				111
Beyer DT311	45	A+ Uncharacteristically tight, unrefined sound quality from otherwise well engineered 'phone	Supra-aural	•		•		133
Beyer DT411	59	G A reasonable but not very thrilling headphone that doesn't really offer enough at the price	Supra-aural	•		•		111
▲ Beyer DT911	199	VG Probably too revealing for many headphone amps these are very subtle and fine if expensive cans	Circumaural	•		•		111
▲ Beyer DT990	119	VG A significant pair of dynamic headphones; they have a smooth and yet revealing neutral sound that is hard to criticise	Circumaural	•		•		55
▲ Jecklin Float Electrostatic	399	E These electrostatics have an openness of sound rarely found in the breed, with good dynamic range to boot	Circumaural	•			•	55
▲▲ Jecklin Float Model One	75	G+ Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	Circumaural	•			•	55
▲ Jecklin Float Model Two	99	G+ Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. Lacks adjustment	Circumaural	•			•	63
JVC HA-D690	40	A Competent but rather undistinctive cans, a bit middle of the road and well suited to aggressive sources	Supra-aural			•	•	111
JVC HA-D910	65	A Broadly acceptable if unexciting design with low level losses and some colourations	Circumaural			•	•	121
Kenwood KH-1000	20	A- First step up from a true mini: a near miniature which is cheap, comfortable and inoffensive	Supra-aural	•			•	121
Koss TD/60	30	A- AM radio like bandwidth limitations and colourations, and rather flaky build	Supra-aural			•	•	133
Maxell HP-3000	30	P Solid, smooth sounding but congested and undynamic. Includes in-lead controls.	Supra-aural			•	•	133
▲ Pioneer SE-400D	37	G- Acceptable if unexciting all-rounder, with good long-term comfort levels.	Supra-aural			•	•	133
▲ Ross RCH-300CD	20	P In-lead controls are the highlights of this shoddy, sometimes aggressive sounding design.	Supra-aural			•	•	133
▲▲ Sennheiser HD320	40	E Superb value: articulate, accurate and musically effective, but location on ears can be uncertain.	Supra-aural	•			•	133
▲▲ Sennheiser HD440 II	35	A+ Still the one by which others at the price are measured, though now slightly leaden sounding, cold treble	Supra-aural	•			•	121
▲ Sony MDR-CD1000	170	G+ A fine sounding and comfortable headphone that's likely to work well with most sources	Circumaural			•	•	111
▲ Sony MDR-CD450	45	G Fair acoustic isolation and comfortable circum-aural construction, moderate sound quality	Circumaural			•	•	133
▲▲ Sony MDR-CD550	60	G+ A very competent headphone, creates a remarkable sense of space for a closed back design and sounds natural to boot	Circumaural			•	•	99
▲ Sony MDR-CD750	90	G+ Reasonably comfortable and eminently listenable these Sonys have characteristically good bass power and relaxed hf	Circumaural			•	•	111
▲ Stax Gamma pro/SRD-X pro	678	E The Gamma pros are like a stethoscope for your hi-fi, revealing subtleties that many loudspeakers fail to resolve	Circumaural	•			•	63
▲ Stax Lambda Signature/SRM-T1	1644	E The Signature when combined with the SRM-T1 valve driver must be the most transparent headphone available	Circumaural	•			•	72
▲ Stax SR Gamma	239	G+ The next model down the Stax range from the Lambda, the Gamma is an excellent headphone with little to criticise but the price	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRD-7SB	674	G+ An industry reference, frighteningly revealing, bringing across more information than loudspeakers costing twice as much	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRM-1	1239	E Extracts layers of information that other headphones only hint at. The SRM-1 has more edge than the SRM-T1	Circumaural	•			•	75
Technics RP-F10	100	A Another very comfortable sealed model, modest sound isolation and uneven sound favouring bass	Circumaural			•	•	121
▲ Vivanco SR606	40	G+ Although slightly overblown at times, this model is easy on the ears and essentially enjoyable.	Circumaural	•			•	133
▲▲ Vivanco SR808 Classic	55	G A new mid price reference from a new and interesting source. Good all round, no obvious shortcomings	Supra-aural	•			•	121



▲▲ **Best Buy**
▲ **Recommended**

Loudspeakers

Last item in the hi-fi chain, to some extent the loudspeaker is merely the slave of what has gone before, capable only of reproducing a signal as good as it is fed. Nevertheless the distortions (colorations and stereo effects) introduced by loudspeakers (and rooms) tend to be more immediately obvious than those anywhere else in the chain, so careful choosing according to taste is very important.

The average loudspeaker consists of a smallish

enclosure, much of which may have begun life as part of a tree, plus a couple of drive units hidden behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. Variations on the above formula are specifically identified in the entries. The designer's primary task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the

bass extension (how low does it go), shown as 'bass from', for the given box size. After that such subtleties as coloration (or lack of it) and dispersion come into the equation.

Careful placement of the loudspeakers within the room is as important as the initial choice of model. See siting columns for guidance. For good stereo they need to be more or less the same distance from nearby walls. Models not ticked as 'floorstanding' will require rigid stands.

Loudspeakers

Product	£Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site in free space	Site close to wall	Floorstanding	Issue No.
▲ Acoustic Energy Aegis 1	452	G Rich and slightly heavy balance doesn't mask fine mid/treble coherence and transparency. Entry level for all-metal drivers	39x21x26	28	84			•	118
Acoustic Energy AE1	950	G Amongst the best miniatures around, shows exceptional mid focus and coherence, but is pricey and could be more agile.	29.5x18x25	48	84			•	102
▲ Acoustic Energy AE3	1650	G+ Solid, authoritative and impressively accurate – if a shade ponderous and slow	63x26.5x37	23	85			•	86
▲▲ Allison AL100	100	A Loud and lively budget wall-mount is bigger and beefier than most of the competition, if lacking some subtlety and refinement	33.5x24x21.5	30	87	•			94
Allison AL105	170	A- Pretty enough in appearance, sonically the AL105 doesn't really make the grade at the £150 asking price	37x24x21	45	87	•			78
▲ Allison AL110	220	G- Compact bookshelf model is a little dry and mid forward, but bass is extended and solid	40x24.5x22.5	28	86			•	102
Allison AL120	420	A Pretty well balanced if slightly mid forward, but sound quality is a little disappointing for the price	63x28x27	30	88			•	98
Allison MS 200	220	A- Small and solid as a brick, this micro-miniature has limited bass and bright balance, but sounds agile and communicative	25.5x14.5x15	50	85	•			106
▲ Apogee Caliper Signature	3995	G+ Power hungry full range ribbon panels have remarkable transparency and delicacy, loudness and 'grunt' are a bit lacking	122x70x6.5	30	81			•	81
▲ Arcam Delta 2	300	G Pretty luxury compact sounds a shade forward and coloured but has dynamic and lively bass for its size	37.5x22.5x27.5	40	87			•	94
ATC SCM20	1461	G+ Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82			•	86
▲ Audio Note AN-E/B	1300	G+ Lovely coherence, great midband dynamics and transparency, extended bass and high sensitivity — pity it's so darn ugly!	80x36x28	20	91			•	106
▲ Audio Note AN-J/B	799	G+ Light damping and local unevenness adds some coloration, but doesn't spoil the very lively, dynamic and coherent sound	58.5x33x24.5	25	90			•	110
Audio Physic Tempo	2000	G Tall and unusually styled floorstander has stunning stereo precision but suspect in-room bass tuning	107x22x28-46	28	86			•	143
▲ Audiovector 3X	1500	VG Monolithic floorstander has a restrained but time-coherently informative sound plus a fine in-room balance	103x22x27-35	20	88			•	143
Aura SP50	400	A Two very tasty drivers rather outclass the cabinetwork; a capable but slightly dull compact stand mount	40x22x25	30	87			•	126
B&W 2003	190	A- Flashy and assertive ghetto blaster styling is not reflected in the rather bland, if well balanced sound	43x21x25	30	88			•	122

Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site close to wall Sensitivity (dB)	Site in free space Sensitivity (dB)	Floorstanding	Issue No.
▲ B&W DM600i	180	A+ Smart cosmetics and a very even balance overall, but dynamically rather bland; amplifier current demands are quite high	35x20.5x25	25	88	•	135
B&W DM610i	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 VI	1650	A The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Boston Acoustics 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	• • •	128
▲ 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	350	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	699	G+ A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	• •	98
▲ Castle Durham 900	299	G Lovely veneer and lots of engineering create a very upfront, coherent and exciting sound — maybe too much so for budget systems	40x21.5x24	45	89	•	135
▲ Castle Howard	999	G+ Ably fills the price/size/sound gap between Chester and Winchester; a spacious semi-omni with a rich, laid back balance	104x23x35	25	87	• •	132
▲ Castle Trent II	190	A Very classy finish for the price, plus a sound that passes muster without setting anything much alight	33.5x18x20	50	88	•	122
▲ Castle Winchester	1499	G+ Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25	87	• •	90
Castle York	349	A+ Pretty little real wood compact has an engaging transparency, good balance and fine timing, could do with more authority	43x22x26	30	86	•	110
▲ Celestion 1	109	A Pretty basic performance but at a very basic price — it all sounds a bit scrappy and untidy, but its heart's in the right place	27.5x16x21	50	87	•	114
▲ Celestion 3 MkII	130	A+ Smooth and polished by budget speaker standards, if a bit laid back for some tastes	31x18.5x20	45	87	•	130
Celestion CS135	139	A- Compact hideway passive subwoofer lacks serious bass extension; for high sensitivity speakers only	52x19x34	45	88	• • •	128
▲ Celestion 15	389	G Big box and bang for your bucks, short on subtlety and control, but long on both enthusiasm and perceived vinyl wood grain	103x20.5x25.5	28	90	• •	114
Celestion 9	269	A Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	102
Celestion 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
Dawn Audio Chorus FS	698	G Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	• •	11
▲ 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
Epos ES25	1505	G+ Handsome floorstander with fine intrinsic sound quality but a rather uneven and bass heavy balance	94x23.5x35	22	87	• •	143
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
▲ 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 highly analytical, partly due to distinct and not always comfortable upper-mid forwardness	96x27x20	25	85	• •	102
▲ Heybrook Solo	189	A+ Discreetly styled, sounds a little untidy in both bass and treble but handles complex rhythmic material much better than most	36x23x22	28	87	•	90
▲ Heybrook Trio	359	G Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	118
Impulse H7	785	A Ultra-compact horn has fine midband contrasts but very little bass and detached treble; gives amplifiers a hard time	87x15x30	45	85	• •	132
Infinity Kappa 6.1i	995	A Good extension and laid back balance from high-tech drivers in classy cabinet, but bass is fat and slow and dynamics unconvincing	97x30x24	25	89	• •	132
Infinity Modulus	795	A+ Carefully conceived and beautifully built. Undeniably attractive in the mid and treble, it failed to handle the bass as well	30x18x26	45	84	•	86
▲ Infinity Reference 10	200	A An engaging and lively sound from a prettily finished and substantial small bookshelf size model	36x23x23	50	87	•	98
Infinity Reference 20	300	A Well presented and balanced with good bass control, but somehow lacks convincing cohesion and agility.	46x27x24	27	88	•	102
▲ Infinity Reference 30	400	G Budget price floorstander has good overall balance and bass extension, but is rather coloured and uneven	86x27x24	25	89	• •	122



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Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
Infinity Infinitesimal sub	499	A Cute but pricey amplified subwoofer is too small to deliver real bottom octave grunt	34x34x34	40	NA	•	•	128
Jamo Cornet 40.3	130	A Pretty presentation and a strong box, but poor driver fixing. Decent if bright sound	32x20x22	48	86	•		130
Jamo 447	500	A- Very prettily styled, but build and sound quality is disappointing for the price	81x19x29	40	89	•	•	138
Jamo 707	900	G- Superb styling and cosmetics but indifferent build and engineering quality; decent balance apart from detached bass	105x26x39	25	88	•	•	132
JBL Control 1 Plus	250	A Sub-miniature with forward midrange and real bass; highish price partly justified by near-indestructible Pro build	23x15.5x14	50	89	•		90
JBL L1	479	G Good power handling, decent transparency and deep but current hungry bass from a compact and solid enclosure	40x21x25.4	47	87	•		121
▲ JBL L20J	800	G+ Lovely if pricey bookshelf model has that old JBL magic, full of bounce and brio, needs a good quality stand and can sound a bit heavy	44x26x28	30	87	•		138
▲▲ JBL L90	1300	VG Large horizontal bookshelf model vindicates classic three-way 'studio monitor' format, with lively dynamic drive and fine balance	40x60x34	23	91	•		143
JBL ti1000	1500	G Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45	89	•		118
▲ Jordan JH400	590	A+ Piano finish hexagon has single full range driver and controversial sound, with uneven balance but delightful mid coherence	33x24x30.5	50	83	•		106
▲ JPW AP2	180	A Offers real wood veneer at a bargain price; performance is cleaner but broadly comparable to P1 Vinyl overall	43.5x25.5x26	45	86	•		106
▲ JPW AP3	225	A+ Pretty good stereo and well balanced overall it had its own character which is well suited to vinyl replay	52x25x29.5	57	90	•		46
▲▲ JPW Gold Monitor	80	A Great sound for pound value through bass and midband, but the top end's rather coarse	27x18x18	50	85	•		130
▲▲ JPW Minim	79	A- Very civilised but dynamically limited, the Minim is well suited to the smaller room and where limited loudness is acceptable	27.5x18x19.5	28	85	•		82
▲▲ JPW Mini Monitor	60	A- Ultra cheap Richer Sounds special is lightweight and short of welly, but a snip for surround sound use	27x18x17	50	85	•		122
▲▲ PW P1	170	A+ 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	A A lot of highly competent loudspeaker for the price, with a safe sound that's unlikely to disappoint.	43.5x25.5x26	32	87	•		102
▲▲ JPW Sonata	115	A+ Well balanced and integrated, offers fine sound if limited bass and dynamic range, plus real tree wood at a nearly silly price	32x23x20	55	86	•		71
JPW Sonata Plus	135	A- This luxury variation on the redoubtable Sonata theme features a metal dome tweeter, and isn't the better for it	32x23x21	30	87	•		90
JPW Ruby 1	500	G Very pretty but pricey luxury metal-cone miniature has good, if slightly edgy balance	32x19x21	42	85	•		139
▲ JRT AD1	500	G+ A fair share of cosmetic deficiencies do little to spoil the impressive coherence and timing	59.5x28x36	28	86	•		86
▲ JRT AD1 Micro	389	G Delightful life and coherence, gives surprising impression of scale; some aggressive tendencies but very open to system tuning	28x17x21	50	87	•		94
▲ KAR Volante	600	G+ Beautiful real wood floorstander doesn't sound as big as it looks, sound is coloured but lightning fast and great fun	88x21x27	40	88	•	•	138
▲ KEF 104/2	1595	G+ A reference point for dynamics, preferred without KUBE, suited to many rooms. Good stereo, high sound level	90x28x41.5	50	92	•	•	60
KEF K120	169	A Physically pretty and sonically competent but undistinguished bookshelf size model has good sensitivity but limited extension	34x20.5x26	45	87	•		106
KEF Q30	349	A Fine focus from Uni-Q driver, but lacks drive and time coherence; acoustically smaller than it looks	73x19x29	44	88	•	•	126
KEF Q50	500	A Compact twin-driver floorstander with Uni-Q treble, and a rather midbass heavy overall balance	84x19x28	30	88	•	•	139
KEF Q80	569	A+ Uni-Q floorstander has good stereo and fine midband coherence, but bass lacks extension, drive and resolution	85x24.5x26.5	45	87	•	•	106
KEF Q90	739	A- Generous floorstander has even balance and decent extension but fails to communicate excitement and involvement effectively	90x25x32	25	88	•	•	118
KEF AV1	2499	G- Awesomely built, finished and powerful subwoofer lacks the subtlety and unintrusiveness for top class hi-fi applications	43x56x50	<20	NA	•	•	128
▲ Kenwood LS-770G	260	G Impressively communicative bookshelf model has fine vigour, scale and dynamics, if not the smoothest sound around	48x27x25	25	89	•		106
▲ Kenwood LS-500G	500	G Japanese designed and built luxury compact delivers an invigorating and exciting sound; an interesting contrast to some lazier models	45x23x26	48	89	•		118
▲▲ Legend II	200	G Liveliness, coherence and fine information retrieval justifies the odd looking moulded baffle construction	37x21x30	48	88	•		122
▲ Linn Kaber	1298	G+ Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforgiving	89x19x29	25	85	•	•	118
▲ Linn Keilidh	595	G+ Stunning timing and coherence and awesome bass drive, especially with ceramic plinth; sounds a bit shut in	83x20x27.5	22	87	•	•	114
Living Voice Air Partner	11990	E Formidable horn design with astounding transparency, dynamics and speed. Its idiosyncracies are compensated by sheer energy	165x64x92	40	101	•	•	117
▲ Lumley Monitor Reference 3	895	G+ Lovely free stander suffers from indifferent bass alignment, but is fast, coherent, solid and very informative indeed.	87x27.5x28	30	90	•		106
Lumley Monitor Reference 4	375	A All metal diaphragm and real wood at fair price; balance uneven — upper mid forward with suspect bass tuning	36x17x23	44	86	•		126
Magneplanar SMGa	668	A Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85	•	•	46
Meridian Argent 1	995	G+ Beautifully built, finished and shaped, has fine bass extension and virtual absence of 'boxiness'; needs a big amplifier	33x27x27	28	83	•		98
Meridian Argent 2	875	G Beautiful high-tech 'large compact' delivers extended, smooth and neutral sound with fair speed. Slate Audio stands essential	48.5x21x29.5	23	85	•		94
Meridian M30	950	A Pricey active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA	•		46
Mirage M-890i	1075	G Intriguing 'bi-polar' (omnidirectional) design gives spacious, very smooth but rather heavy and laid back sound	103x25.5x20.5	20	84	•	•	143
Mission 731	130	A- 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	A Attractive presentation but a rather dull and thick sounding speaker, and a tad pricey too	40x20x30	40	87	•		141
▲▲ Mission 733	300	A+ Stylish floorstander represents a lot of speaker for the money, and sounds pretty good too	86x20.5x31	45	87	•	•	139
Mission 751	300	A Attractive luxury miniature has great sonic potential, but our review samples have been marred by sample variations	32x17x27	45	86	•		126
▲ Mission 752	500	G+ 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	G+ Gorgeous presentation and potential for open transparency. Floorstander with lots of drivers that gives lots of loudness	90x22x30.5	45	88	•	•	114
Monitor Audio MA200	200	A 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	A+ Goodlooker with solid engineering sounds lively and coherent with plenty of power handling, but also a bit shut-in and coloured	40x22x26	40	89	•		135
▲ Monitor Audio MA202	450	G- Uneven but informative and easy-listening floorstander delivers decent scale from big vinyl box	89.5x22x28	28	88	•	•	139
Monitor Audio MA1200 Gold II	1200	G Pricey but classy floorstanding variation on MA800 theme; beautifully voiced midband, heavy midbass	93.5x17x27	28	85	•	•	122
▲ Monitor Audio Studio 6	800	A+ Pretty but pricey metal diaphragm compact has clear and transparent midband but is ultimately lacking in vim, vigour and drive.	35x22x25	45	86	•		118
Monitor Audio Studio 12	1000	G A beautiful looking compact floorstander, but sound and content are a bit on the small side for the price	97x16.5x21	28	86	•	•	143
▲ Mordaunt-Short MS05	110	A 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	A Hi-tech baby has fine bass/mid integrity but the top end is less appealing	30.5x18.5x21	50	86	•		130
▲ Mordaunt-Short SW-1	150	A- Prettily finished and inexpensive passive subwoofer is only really useful with sub-miniature speakers	24x58x25	40	85	•	•	128
▲▲ Mordaunt-Short MS20	180	G Sober 'bookshelf' model uses hi-tech plastics to deliver a notably good midband at a very sharp price — a fine all round compromise	36.5x21.5x22	40	87	•		135
Mordaunt-Short MS50	540	G- Big value big box with fine engineering content and big lazy, laid back sound; lacks charisma	91x25x33	22	86	•	•	138
Morel 704 II	1000	G+ Classy compact three-way floorstander has firm, deep bass with a lively midband, but twin-tweeter treble is less satisfactory	80x23x21	20	87	•		143
Morel Bassmaster 602	1200	G+ Superbly built compact stand-mount, did well in listening tests but suffers (enjoys?) upper midband peak	24.5x40x22.5	25	84	•		114
▲▲ Musical Technology Kestrel	250	A+ Cute little metal cone floorstander brims with clever ideas; sounds very clear and clean if cautious	80x2-20x19	40	84	•	•	139
Musical Technology Eagle	1400	G+ Huge but very cleverly styled floorstanding two-way has massive low bass output but lowish midband sensitivity. Good material value	sub-20Hz	84	•	•	•	143
NAD 801MM	100	A- A rather undistinguished sub-miniature with low sensitivity and indifferent sound quality	27x18x18	48	84	•		130

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V J HI-FI, 29 Guildhall St, Folkestone. (01303) 256860. Mission, Kenwood, Tannoy, Marantz, Sony, Rogers, Denon, Musical Fidelity, Quad, Yamaha. Dem and home trial facilities, free local install. No appts necessary, service dept. Amex, Diners, Visa, Access, Int free credit. Instant credit. Mon-Sat 9-6. **BADA**

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STAMFORD HI-FI CENTRE, 9 Red Lion Square, Stamford, Lincs PE9 2AJ. (01780) 62128. Pioneer, Technics, Marantz, Cyrus-Mission, Rotel, NAD, Yamaha, Kenwood, Quad, plus all major speaker manufacturers. Expert advice, comparator demonstrations, on two floors, part exchange Hi-Fi purchased for cash. No appointments necessary, home trial facilities, free installation, service department. Mastercard, Visa & credit charge, finance available. Mon-Sat 9-5.30pm, closed Thursdays.

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HI-FI EXPERIENCE, Lion House, 227 Tottenham Court Road, London W1P -HX. Tel Help Line 0171-580 3535 24 hour, fax 0171-436 4733. Agencies include: Arcam, Audiolab, Bang & Olufsen, Castle, Celestion, Chord, Cyrus, Denon, Heybrook, Harman, IMF, KEF, Marantz, Mission, Musical Fidelity, Meridian, Nakamichi, Nad, Pioneer, Quad, Rotel, Shearman, Tannoy, TDL, Yamaha. 8 listening rooms, 3 years guarantee. Free delivery and simple installation (M25 periphery), home cinema specialist.

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NORFOLK

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AUDIO IMAGES, 7 All Saints Rd, South Lowestoft, Suffolk NR33 0DL. Tel: 01502 582853. For full details see our main entry under Suffolk.

BASICALLY SOUND, The Old School, School Rd, Bracon Ash, Norwich NR14 8HE. (01508) 570829. Audio Alchemy, Arcam, Micromega, Naim, Denon, Spendor, Audiolab, Sound Organisation, Epos, Rotel, Royd, Heybrook, TDL, Nakamichi, etc. 2 comprehensive dem rooms. Home trial. Free installation. Visa, Access, HP facilities. Tues-Sat 9.30-1, 2-5.30.

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LISTEN INN, 32A Gold Street, Northampton. (01604) 37871 (Fax) (01604) 601430. Linn, Naim, Rega, Epos, Royd, Mission, Cyrus, Arcam, Audiolab, Neat, Creek, Quad, Denon etc. 2 Dem Rooms

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DEALER Directory

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SUFFOLK

AUDIBLE DIFFERENCE, Near Diss, Norfolk — see main entry under Norfolk.

AUDIO IMAGES, 7 All Saints Rd, Pakefield, South Lowestoft, Suffolk NR33 6JL. Tel/Fax: 01502 582853. Quad, Triangle, Arcam, Castle, Rotel, Moth, JPW, Finlux, Audio Innovations, plus the amazing Rothwell range. Separate demo room, no appts nec. 10-6.30 Tue-Thur, 7pm Fri, 6pm Sat.

BASICALLY SOUND, The Old School, School Rd, Bracon Ash, Norwich. (01508) 570829. For full details see entry under Norfolk. **BADA**

BURY AUDIO, 47 Churchgate St, Bury St Edmunds, Suffolk, IP33 1RG. Tel (01284) 724337. Arcam, Castle, Heybrook, LFD, Marantz, Meridian, Monitor Audio, Michell, Musical Fidelity, Orelle, Pink Triangle, Proac, Quad, Rotel, Ruark, Target, van den Hul, etc. Single Speaker Room. No appointments necessary. Home trial fac. Free Installation. Access, Visa, Switch. 9.30-6pm Mon-Sat. Closed Wed. **EASTERN AUDIO**, 41 Bramford Rd, Ipswich. (01473) 217217. Established nearly 20 years. Easy parking, dem room. Mon-Sat 9.30-6. Quad, Arcam, Marantz, Meridian, Denon, Nakamichi, Audioblab, Technics, NAD, TDL, Celestion, Mission and B&W. **BADA**

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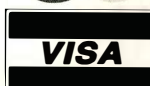
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Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site close to wall	Floorstanding	Issue No.
▲ 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	1821	VG Clever multi-box enclosure gives big scale sound with small box agility. Lively and punchy — smoother but more up-front than before	88.5x26.5x16-27	25	87	•	•	143
▲ 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-4UJK	250	A+ Latest version now balances pretty well, with a lively and coherent if bass light sound; dull packaging	37x21x27	42	88	•	no	139
▲ Polk LS50	800	G No enthusiast tweaks here, but plenty of power and beautiful overall balance from a good looking compact floorstander	84x23-27x29.5	25	90	•	•	138
Polk LS70	1200	A+ High sensitivity and lots of loudness potential, but in-room balance has far too much midbass boom; mid and treble are very laid back	96x31x37	22	91	•	•	132
Polk RM 1000W	349	A- Not a true subwoofer at all, but rather the bass section of polk's elegant upmarket three box speaker system	31x52x33	45	90	•	•	128
▲ Professional Monitor Co LB1	998	G+ Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	•	•	110
Professional Monitor Co AB1	1600	G Bulky stand-mount transmission line has lovely panel-like transparency, slightly shut in balance, and needs a big room	79x27x43	22	89	•	•	114
▲ Quad ESL-63	2384	G+ This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	•	•	60
RATA Two-Way	1795	G Essentially the mid and top sections of the Three-Way, bass is very limited but fast and tight, while midband is dynamic and invigorating	46x32.5x25	50	92	•	•	143
▲ 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 Kite 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 Kite	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 LS3/5A + AB1	1200	G+ Clever AB1 stand/subwoofer helps the classic 3/5A miniature monitor give its best shot. Loudness is limited but balance lovely	93x19x16.5	45	83	•	•	143
▲ 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 Talisman 2	700	G Less ideologically committed than some compact floorstanding rivals, its key strength lies in fine all round compromise	86x25x31	30	86	•	•	118
▲ SD Acoustics SD3	399	G Port firmly blocked, the new SD3 has the agility and charm of a quality miniature, with good bass extension but low sensitivity	38x19.5x29	25	83	•	•	106
▲ SD Acoustics SD5	1235	G Bass tuning and coherence suspect but forward midband is delightfully smooth; high class drivers include ribbon tweeter	112x20x30	30	86	•	•	132
▲ SD Acoustics SD1	1650	G+ A large scale, airy and unusually detailed system with excellent dynamics. A warmer balance than original model	123.5x38.2x32	50	90	•	•	60
SD Acoustics Ribbon	2950	G+ Amplifier sensitive, Ribbon is a lively and loud hybrid marred by some colorations; some like it, others don't	152x30x(15-30)	30	91	•	•	81
Shahinian Arc	1675	G Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	•	•	110
Snell JIII	770	G Dated styling belied by fine sensitivity and bass extension, and a lively if slightly untidy and not quite coherent sound	58x33x25	30	89	•	•	118
▲ Spendor S20	579	G Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	•	•	102
Spica Angelus	1295	A A little bass shy and soft in the bass and lower mid, otherwise tidy, extremely lively and fluid, if uneven overall	116.8x53.3x26	50	86	•	•	60
Spica TC50	649	G This triangular-profile 'grown up' miniature is a shade boxy and laid back but has good rhythmic and musical integrity	40.5x33x29	55	88	•	•	71
Spica TC50SE	849	G A heavily UK-modified TC50, the SE sounds less boxy and more spacious, but lacks some of the urgency of the standard model	40.5x33x29	55	88	•	•	71
▲ Systemdek Systum 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 slamin' 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 D500	1560	G Big luxury heavyweight has muscle and balance but a little short of poise and delicacy. Fine stereo but hard work for amps	96x16-30x35	20	90	•	•	143
▲ 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

Systems is a generic title that we've chosen to describe any form of complete system package. Fundamentally what we're talking about here is midi and mini systems, you know those all singing all dancing, lights blazing systems that hi-fi snobs are allergic to. Sold on the basis of their ability to play virtually all mediums at the flick of a remote control switch stack systems offer a plethora of features, and the dearer the system the more complex they tend to

become. With things like double cassette decks, multi preset tuners, CD players and graphic equalisers supplied as standard the big boys of the stack world offer such luxuries as Surround Sound, separate chassis for different components and occasionally a record player. They usually have a few line inputs for extra sources and a few are available without loudspeakers. As the latter are often the weakest part of a stack system buying good quality speakers separately will bring

worthwhile improvements. The section headings for stack systems include size of the complete stack without speakers and rated output per channel — where a system has more than two channels this is indicated in the comments. Tuner presets and the existence of a remote control are self explanatory. A blob in loudspeakers shows that they supplied, an "o" indicates that they are optional. The final column is for those of you with records to play.

▲▲ **Best Buy**
▲ **Recommended**

Systems

Product	£Price	Comments	Size: HxWxD (cm)	Rated output Watts	Tuner presets	Remote control	Loudspeakers	Turntable	Issue No.
▲ Denon D110/S	870	G Nearly hi-fi from pretty but pricey silver stack; richer, fuller speakers would help	37x27x33	40	30	•	o	•	125
Goodmans System 700	600	A Separates flexibility and upgraeability in remote midi package; anodyne sound	69x35x37	50	20	•	•	•	125
▲ JVC Adagio G7	799	A Wondrous 2-speaker surround movie sound system, but a very uneven package elsewhere. Four by 20W output	42x28x28	20	40	•	•	•	125
▲ Kenwood HD-1000	1000	E Mini lifestyle system, well built with minimalist facilities and exacting performance standards all round	30x27x35	40	30	•	•	•	131
Marantz 1020	1000	G Component lifestyle system which is as elegant on audition as it is to look at	22x42x32	30	20	•	•	•	131
Onkyo L-909	1200	G Simple yet flexible lifestyle mini system suffers iffy cassette deck set-up, but otherwise satisfies	38x28x32	40	30	•	•	•	131
Philips FW91	999	A+ Good looking and performing package rendered expensive by inclusion of DCC deck	37x26x32	60	30	•	•	•	125
▲ Technics SC-CH950	1000	A+ Classy if rather bland allrounder includes useful Dolby Pro-Logic AV capabilities	42x27x34	60	39	•	•	•	125



Tuners

The radio medium operates at a much lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live Prom concerts can rival all other sources from a hi-fi perspective.

Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for certain transmissions in the UK.

Something of a hi-fi afterthought, tuners are often selected merely to match a chosen amplifier

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.

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,

▲▲ **Best Buy**
▲ **Recommended**

Tuners

Product	£Price	Comments	Presets	FM	LW	MW	Signal strength meter	Automatic tuning	Manual tuning	Issue No.
Aiwa XT-003	120	A- Economically designed and built in the UK, but trade-offs have a marked influence on FM and AM sound quality.	30	•	•	•	•	•	•	93
▲ Aiwa XT-950	150	A Decent enough performance all round given the modest price, though RF tweaks have limited value	24	•	•	•	•	•	•	129
Arcam Delta 280	350	G+ Fine sound quality marred by mild synthesiser whine; RF performance only average, remote £60 extra	20	•	•	•	•	•	•	120
▲ Audiolab 8000T	700	VG Unusually combines fine sound quality and RF performance (inc AM); superb ergonomics are a joy to use	39	•	•	•	•	•	•	120
Aura TU-50	300	G Tonally neutral, but with rather poor imaging and a certain woodenness to the sound.	16	•	•	•	•	•	•	109
▲ Denon TU-260L	120	G+ Bare minimum of features. Careful designwork promises a surprisingly open and vivacious sound, so don't overlook it!	20	•	•	•	•	•	•	93
▲ Denon TU-580RD	220	G Fine feature package including remote and RDS, plus excellent RF performance and decent sound quality	30	•	•	•	•	•	•	120
Harman Kardon TU9200	219	A The listening panel appreciated its liveliness, but found it a little muddled.	32	•	•	•	•	•	•	109
▲ Harman Kardon TU9400	299	G+ Striking in appearance and with a sound to match, it comfortably exceeded our expectations. On stereo FM it's HK's best yet.	24	•	•	•	•	•	•	93
Harman Kardon TU9600	499	G Good bass and detail, and good - perhaps slightly enhanced dynamics	24	•	•	•	•	•	•	109
JVC FX-362	140	A- Disappointing all round performance — watch out for aerial input overload in strong signal areas. Tuning knob unspecial	40	•	•	•	•	•	•	129
Kenwood KT2050L	150	A- Decent RF capabilities despite simple front end. Sounds a bit bright and ergonomics are a bit complex	30	•	•	•	•	•	•	129
Kenwood KT-3050L	170	A Excellent RF performance and plenty of features including RDS, but did sound rather ordinary under our conditions	39	•	•	•	•	•	•	120
▲ Linn Kremlin	1995	E Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	80	•	•	•	•	•	•	120
▲ Magnum Dynalab FT101	825	G+ Although expensive for its fairly minimum set of facilities, its excellent sound makes up for what it lacks elsewhere	0	•	•	•	•	•	•	72
Marantz ST-53	170	A+ Sweet sound could well satisfy audiophile sensibilities, but selectivity is not great	59	•	•	•	•	•	•	129
▲ Meridian 604	1350	VG Unique digital convertor makes most sense in Meridian system context; smooth sweet sound with fine front end	30	•	•	•	•	•	•	120
▲ Naim NAT 01	1453	E There may be better sounding tuners in the world, but we have yet to hear one	0	•	•	•	•	•	•	50
▲ Quad FM4	434	G+ Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•	•	•	•	•	•	50
Quad 66	532	G+ Very pretty and compact but technically unadventurous. Smooth sound but only makes sense in Quad system context	19	•	•	•	•	•	•	120
▲ Rotel RT-930AX	175	G- A competent rather than exciting performer, with low audible interference though slightly compressed and muddled sound.	20	•	•	•	•	•	•	108
Sherwood TX-3010C	120	A Lots of features and fine RF discrimination for price. Sound is communicative but inconsistently tacky	30	•	•	•	•	•	•	120
▲ Teac T-X4030	120	A Not exactly special, but still a well balanced, tolerable and capable allrounder at a very reasonable price	20	•	•	•	•	•	•	129
Yamaha TX-350L	130	A- Enticingly pretty and compact presentation but performance isn't great; beware of aerial overload	40	•	•	•	•	•	•	129

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Astral Audio	Aberdeen	01224 582825	Fleet Audio	Fleet	01252 811088	Grandix	New Malden	0181 336 0012
Hi-Fi Excellence	Aberdeen	01224 322520	V.J. Hi-Fi	Folkestone	01303 256860	B & B Hi-Fi	Newbury	01635 32474
Aston Audio Ltd	Alderley Edge	01625 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	01432 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	01799 523728
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	Bloxwich	01922 473499	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
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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	Bartlett's Hi-Fi	London	0171 6072296	Square Deal Electrical	St. Albans	01727 852501
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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
Bury Audio	Bury St. Edmunds	01284 724337	Hi-Fi Care	London	0171 6377879	Ward & Williams Ltd	Stockport	0161 440 0201
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	Chantry 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 779321
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
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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
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**Please Telephone 01252 373434 Fax 01252 371818
for further information**



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POWER TO THE PEOPLE

I know that there is considerable concern out there about exactly where the Hi-Fi scene is heading, and it's true that little of anything interesting is happening to stir the public's interest. As a result we have 'the real Hi-Fi' campaign to try and combat the onslaught of midi systems from the Far East! The problem it seems to me, lies in the quality of advice offered by the average shop, as although there is no doubt that a good 'separates' system does sound better, there are thousands of people out there with systems sounding worse than midi-systems because shops are simply trying to make money and seem to have little interest in having happy customers.

Two recent cases spring to mind; in the first, the customer asked the dealer to come and listen to the problem system, which the dealer did, but wouldn't accept that it sounded awful. I was asked to listen, agreed, replaced speakers and the system sounded fine. Nevertheless the front end was a hotch-potch and equally good sound could have been achieved for less money, but may not now be cost effective to sell. In a second case, the customer had a good CD player and turntable plus amplifiers and speakers from a well known manufacturer costing £6k approx. The

sound was bright with no depth or feeling to the music. By disposing of the amps and speakers for £3k and replacing with AVI amps and ATC 20 speakers for £3k, means that the customer can now enjoy his music - but he's still lost £3k! If any of this rings a bell please give us a ring, but we are so busy sorting out problems it may take time to get around to see you!.



VALVE AMPS

Talking about power, we constantly get asked about valve amps and have to confess that in general most are underpowered and restrict one in the choice of speakers. Most of those we sell, such as ATC and Ruark, need power and hence the main one we use is the Cadance 100 watt monoblocks which will even drive ATC 10, 20 and 50's, giving superb bass definition.

CALLING SCOTLAND

Many in Scotland are miles from any Hi-Fi shop, and as I could be visiting a couple of customers up there shortly, do give me a ring if you would be interested in a visit.

ELECTROCOMPANIET

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Turntables – cartridges

Cartridges fall into two groups: high output models, capable of working directly into most amplifiers and categorised as having a normal (N) output, and more expensive low and very low output models (L, VL). Stereotypically, low output cartridges use the moving coil principle of operation, have better mechanical integrity and tighter tolerances, and give better performance but

at much higher cost. With CD now the dominant medium many amplifiers are no longer equipped with the necessary phono input for a cartridge and a separate phono stage is necessary. Valve designs need either an extra head amp or transformer to cope with the low output of moving coil cartridges.

Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs

benefit in overall balance from optimised amplifier capacitance loading. The mechanical characteristic of cantilever compliance ('springiness') needs to be considered in the light of the effective mass of the tonearm, and to achieve a good match compare the effective mass requirements figures with the actual effective mass of specific arms. 'turntables' and 'tonearms' sections.

Turtables – cartridges

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲▲ Arcam C77	30	A+ A sensible moving magnet package with good bounce at a competitive price	6-16	N	•		48
▲▲ Arcam C77Mg	40	A Punchy sound quality with plenty of extra energy to liven things up. The solid body seems well worth the extra £10	4-8	N	•		67
▲ Arcam E77Mg	60	A Our sample had a disappointing stylus, but gave a coherent, rich and laid back sound, with good 'scale'	3-8	N	•		48
▲ Arcam P77Mg	73	A+ Preferred to its cheaper partner by virtue of a better tip. Channel balance could have been better	4-9	N	•		48
▲ Audio Note IO IIV	1395	E One of the best, giving 'an extraordinarily relaxing midrange clarity', needs a transformer	8-18	VL		•	100
▲ Audio-Technica ART1	850	VG This is a delicate and very fluid-sounding MC that tracks well, offers very low distortion and exceptionally good separation	9-18	L		•	72
▲ Audio-Technica AT-420E	36	A Better suited to pop recordings, this MM bears some of the sonic hallmarks of the Linn K5	7-14	N	•		67
▲▲ Audio-Technica AT-95E	20	A Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ Audio-Technica OC-5	130	G For the price, it's unusually effortless and detailed, but it tends to become rather relentless and tiring after a while.	5-14	L		•	103
Audioquest AQ 404i-L	500	G+ Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge	8-16	L		•	84
Audioquest AQ 7000	1295	G+ Stunning stereo imaging and good detail at low levels are spoiled by less-than-perfect tracking and high sensitivity to arms.	6-20	L		•	91
Denon DL103	100	A+ Good performance in bass and general 'life' is seriously let down by its spherical stylus which kills subtle details.	9-22	L		•	103
▲▲ Denon DL110	70	G Firmly recommended as a fine all-rounder, this high-output MC model is likely to perform well in nearly all circumstances	6-16	N	•		48
Denon DL160	90	AG Although listeners just preferred the 110, its brother here proved a twin in lab tests and is still "thoroughly competent"	6-16	N	•		43
▲ Denon DL304	200	VG Uncolored, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	450	VG Clear, detailed, neutral and generally very informative - excellent.	6-18	L		•	91
Dynavector XX-1	988	G+ Good, but not immensely competitive at the price, and not helped by comparison with the low output version	7-15	N		•	84
▲ Dynavector XX-1L	988	VG Very clear, very detailed, no troubles with tracking; response lift around 20kHz seems to do no harm	7-13	L		•	84
Empire Benz Micro MC-Gold	150	G Nothing is obviously wrong, but nothing is stunningly right either. Safe, but perhaps a little too safe	7-17	L		•	103
▲ Empire Benz Micro MC-Silver	150	G Ultimately not the peer of the MC Gold is more appropriate to the sort of equipment it's likely to be partnered with	8-18	N		•	103
▲ Empire Benz-Micro MC-3	800	G+ Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
Glanz GMC-10LX	80	A+ Bearing some of the hallmarks of the '10EH, the '10LX is still less competitive in the sonic stakes	7-15	L		•	67
▲ Glanz GMC-20E	129	G+ Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	G Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	G As with 1012, a touch harsh; detail and transient purity improved, though, and it goes well with electric guitar!	5-11	N	•		85
Goldring 1042	90	G Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	A A lightweight and frisky-sounding MM that appears to be based upon the same body as the Nagaoka mm4	7-15	N	•		67
Goldring Elite	200	G The basics are right, and it will cheerfully tackle any source material, but its sound possesses a certain dirtiness	8-18	L		•	103
Goldring Eroica H	100	G- More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	G Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
Goldring Excel	549	G Errs on the warm and heavy side of neutral. Strong bass lines are its forte, but resolution of subtle treble details is weak	6-13	L		•	72
Goldring Excel GS	600	G+ True high end quality in its lack of colorations, but tracking seems indifferent and high levels tend to sound rough and edgy.	9-20	L		•	103
▲ Linn K5	49	A+ Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	G Linn threw this model into the leading pack by beefing up the Basik's bodywork and adding a super stylus	6-15	N	•		Col
London Maroon	199	A+ Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
London Super Gold	339	A- Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Miltek Aurora	299	G+ An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲▲ Ortofon 510	32	G+ For the price, a good blend of virtues weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	55	A+ Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	85	G+ Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
Ortofon 540	110	A Graced with FGII stylus but possessed of too high a compliance for broad arm matching. It could also sound a little unforgiving	3-8	N	•		67
▲▲ Ortofon MC10 Super	85	G "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	110	G+ A good all-rounder, with outstanding performance in detail retrieval, even if it can be very slightly bright and close-up	10-24	L		•	103
▲ Ortofon MC3 Turbo	110	G Not terribly subtle, but it obviously doesn't aim at that. The 3 Turbo is bright, cheerful and bouncy - take it as it comes!	10-24	N		•	103
▲ Ortofon MC3000 MkII	950	E Low levels of body resonance are a real ear-opener. Nothing to criticise elsewhere; one of the very best	9-16	VL		•	84
Ortofon MC5000	1500	G Review sample could not be fully run-in, limited tracking ability, bright and forward sound, though imaging is excellent	12-20	VL		•	91
Rega Bias	34	A+ Difficult to mount in some arms due to its shallow build, the bias offers a gentle, refined SQ	4-10	N	•		67
▲ Rega Elys	74	G Clearly superior to the Bias, despite their common heritage, the Elys is both more detailed, accurate and musically convincing	8-15	N	•		67
▲ Roksan Corus Black	130	G Recognisably related to Corus Blue, but distinctly more civilised and smoother.	7-12	N	•		91
Roksan Corus Blue	75	G Roksan-specified modified Goldring 1012; slight harshness detracts from otherwise good sound.	7-12	N	•		91
▲ Shure ME97HE	55	A+ It won't turn a sow's ear of a turntable into a silk purse, but will at least keep going and produce an acceptable result	8-20	N	•		48
Shure V15 VMR	220	A+ Initial listening gave promising results, but extended familiarity gave the feeling of a lack of energy and a "shut-in" sound	5-12	N	•		38

Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
van den Hul Grasshopper III/IIA	3200	E Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	6-10	L		•	122
▲ van den Hul MC One	975	G+ This extended all the positive qualities of the '10 but added greater authority and scale worth it for the extra money	6-12	L		•	60
van den Hul MC One/High	1100	G+ Slight softening on transients was the only real flaw, but it didn't quite seem to have that special touch one expects	8-15	L		•	84
▲ van den Hul MC Two	1300	G+ Connected directly to any standard MM input it rewards with a highly detailed yet fluid and musically convincing portrayal	6-13	N		•	72
▲ van den Hul MC10	775	G+ A neutral balanced performer giving transparent midrange, fine depth and focus with firm extended bass. Gosh!	5-10	L		•	60
▲ van den Hul MM1	275	G+ If woody midrange coloration could be tamed, the excellent imaging and admirable security would make it excellent	7-15	L		•	103



Turntables and tonearms

Specialist turntables are what high fidelity sound is all about, CD may offer silent backgrounds and flat frequency responses but they can't match the dynamics and superlative timing that serious turntable users take for granted. Turntables at the cheaper end of the market (sub-£350) tend to be supplied with matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices amongst the

separate motor units and tonearms. Careful partnering and set-up is essential for these components, but 'sympathetic' combinations exist.

The columns show from left to right, 'arm effective mass' relates to cartridge compatibility with regard to compliance (springiness) and is explained in the 'Cartridges' introduction. 'Suspended subchassis' — decks which have some form of internal isolation, generally in the form of

springs but occasionally more solid materials such as rubber. 'Manual' and 'Automatic' refer to the operational tendencies of the deck/arm combination — automatic high end turntables are as rare as hens teeth. 'Cartridge' — if one is supplied. 'Belt drive' as opposed to direct drive is the preferred method in most quality decks. An 'Electronic PSU' offers switchable speed change and a 'smoother' power supply for better sound.

▲▲ **Best Buy**
▲ **Recommended**

Turntables

Product	£Price	Comments	Arm effective mass (g)	Suspended subchassis	Automatic	Cartridge	Electronic PSU	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	G+ Good sound in all areas - bass, clarity and neutrality all in the top class and bettered by very few decks at price	13	•	•	•	•	79
▲ Dual CS-503-2	160	A Not wholly inspiring; generally coarse and wooly sound is at least not offensive, but easily bettered by the CS505-4	10			•	•	91
▲ Dual CS-505-4	200	A Consistent sounding and well isolated turntable. It is slightly lacking in balls, compensates with a consistently unmuddled presentation	10			•	•	103
▲ Kuzma Stabi/Stogi Reference	2000	G+ Beautifully made solid oak plinth, the Stabi also sounds very clear, detailed and extended. Stogi Reference is very capable.	12	•	•		•	91
▲ Linn Basik	299	A+ Strong midband analysis and imagery, clean if sharp treble is matched to a good if occasionally wooden bass	10		•		•	103
▲ Linn LP12 Basik/Akito	904	G Trails the full LP12 significantly, but pace, rhythm, timing etc. still in top class, and bass tauter than of old	10	•	•		•	103
▲ Linn LP12-Lingo/Ekos	2642	G+ The classic reference is improved by the Lingo but charming character remains. Ekos is well made and suited to many decks	9	•	•		•	91
▲ Michell Gyrodec	697	G Sweet and natural sounding player, well suited to Rega RB300. Aesthetics, and the acres of clear acrylic are very distinctive	NA	•	•		•	55
▲ Michell Syncro	325	G A happy blend of qualities endows the stylish Syncro with a blend of subtlety and force - the mailed fist in the velvet glove	NA	•	•		•	67
▲ Pink Triangle Anniversary	1495	E Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny	NA	•	•		•	91
▲ Pink Triangle Export	890	E The PT TOO with built in PS. Retains features of great transparency and neutrality. Review sample had highish motor noise	NA	•	•		•	91
▲▲ Rega Planar 2	185	G A remarkable product at the price, surprisingly articulate and confident	11.5		•		•	48
▲▲ Rega Planar 3	250	G A long time leader in its category, the '3 (with excellent RB300 arm) sounded nicely 'musical' in a balanced and coherent manner	11.5		•		•	48
▲ Roksan Radius/Tabriz zi	740	G Design is subtle, refined and easy on the eye. Musically it offers exceptional performance with a minimum of fuss	9		•		•	103
▲ Systemdek 1.920	235	A- The motor unit is derivative of the Rega Planar 2 with a Moth arm. Up tempo even bright at times but never lacks enthusiasm	12		•		•	115
▲ Systemdek IIX/900	230	G A high performance budget turntable which is particularly strong at fine detail resolution and imagery	NA	•	•		•	103
▲ Systemdek IIXE/900AP	388	G+ The acrylic platter'd IIXE is one of the most capable budget decks on the market, good resolution, dynamics and timing	NA	•	•		•	103
▲ SME Model 20A	3763	E Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval.	10.5	•	•		•	118
▲ Thorens TD-3001/TP90SF	760	G Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas	NA	•	•		•	103
▲▲ Thorens TD166 VI/UK/RB250	280	A- Refined and articulate sound with well focused imagery, suitable for use with good MM and budget MC cartridges	11.5	•	•		•	103
▲ Thorens TD2001	650	G- Similar to TD320 but much dearer - why? Sound is comfortable but not very detailed	15	•	•		•	91
▲ Voyd 0.5	3368	E Halfway between standard and Reference Voyds with the latter's platter and bearing. Superb finish, colourful and dynamic sound	NA	•	•		•	72
▲ Voyd Reference	5950	E Voyd's flagship, equipped with three substantial motors, a Lexan platter and brute PS. A strong contender for world's best	NA	•	•		•	C91
▲ Well Tempered WTAT	1800	G+ Intriguing/challenging design. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards	7.5		•		•	67

Tonearms

Product	£Price	Comments	Effective mass (g)	Height adjustment	Pivoted	Parallel tracking	Issue No.
▲ Alphason HR100S	490	VG S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	10		•	•	C86
▲ Kuzma Stogi Reference	1000	VG Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	12		•	•	79
▲ Linn Ekos	1297	VG Superb, state of the art design which builds significantly on predecessor Ittok's strengths	9		•	•	67
▲▲ Moth arm	95	G+ The ultimate budget arm? Refined, detailed, sweet and natural	12		•	•	60
▲▲ Rega RB300	139	VG Despite its modest price it sets exceptional performance standards and could be used on many high end turntables	11.5		•	•	60
▲ Roksan Tabriz	190	G+ Targetted at the Xerxes, this is a good alternative to the Rega arms in many cases - a trifle bright	9		•	•	91
▲ SME 309	568	VG Beautifully made and finished, fully adjustable, a highly neutral performer	10		•	•	79
▲ SME Series IV	528	VG Superb engineering and finish with a finely balanced sound, impressive stereo focus and low colouration	10.5		•	•	60
▲ SME Series V	1233	E Excellent in all respects, this arm arguably sets the standard for pivoted arms regardless of price	10.5		•	•	60

Personal messages

British hi-fi has just lost one of its founding fathers. Paul Messenger remembers Raymond Cooke OBE, 1925-1995.

Raymond Cooke was a very special individual, both to the British hi-fi industry as a whole, and to me personally. Rather than attempting a formal obituary, I want to pay personal tribute to someone who not only influenced me profoundly, but on a wider stage played the leading role in post-war growth, which built the international reputation enjoyed by British hi-fi today.

I shall miss Raymond greatly, above all for his sharp and challenging mind, which always forced me to think things through more thoroughly than my natural sloppiness would encourage. I'm certain I became a better editor and journalist as a result.

I first met him very early on in my magazine career, twenty odd years ago, and my remarkably clear memory of the event only underlines its significance. I had just recently started work as Features Editor on *Hi-Fi News*, and Raymond was writing us an article on loudspeaker technology. However, deadlines were getting very close, I was getting nervous, and Raymond was somewhere out in the Far East.

Then I got a call from his secretary. He hadn't forgotten, and we would have the article; Mr Cooke would be landing in Heathrow at five and then come straight to the office. The Merc SL purred into the Link House car park at six thirty (pre-M25), and Raymond apologised for leaving me hanging on and for the fact that the end of the piece had been written longhand on the flight back (pre-laptop).

With manuscript in hand my worries were receding, and as Raymond briefed me on the illustrations I started to realise that he knew more about my job than I did. Compared to the copy I was used to receiving from technical writers, his was immaculate, notably well structured and exceptionally precise in its language. I later found out that during his technical directorship at Wharfedale (prior to setting up KEF), Raymond had been responsible for tidying, polishing and editing the revised editions of Gilbert Briggs's famous books on loudspeakers.

Perhaps because he could have done the job as well or better than most journalists, Raymond was a stern critic of

the hi-fi press. He disliked the trends towards both subjective and comparative reviewing, so this particular new kid on the block was twice an offender, writing a column called *Subjective Sounds* in *Hi-Fi News* (the elder brother to *Personal Messages*); and just about to take up the editorship of the most comparative of reviewing journals – the one and only *Hi-Fi Choice*.

My first few months at *Choice* particularly tested our friendship. The second edition of *Loudspeakers* was well under way when I joined, its predecessor having sparked all sorts of controversy, including actual legal action. A number of speaker manufacturers including KEF had decided not to cooperate with review samples, yet KEF had just launched what probably was the most important new British speaker in a decade, the *Model 105*. *Choice* obtained its own 105s, carried out the reviews, and published *Loudspeakers 2* with the KEF featured on the cover and carrying a deserved Recommended flash. I sent Raymond a copy, apologising and explaining my reasons, while welcoming his criticism of the reviewing and

the extended introduction I'd written.

There was no rancour or irritation in his response. Instead, he was totally positive. Still disliking the idea of trying to review 50 or more loudspeakers at a time (those were the days!), it seemed as if Raymond also accepted my best excuse – that if we weren't doing it then someone less capable and responsible probably would. He also took the time and trouble to read the whole thing thoroughly, made numerous helpful suggestions for future improvements, and sent me various examples of how overseas journals tackled loudspeaker reviewing.

While Raymond had all the stubbornness of a self-made Yorkshireman, and would argue his point with fierce conviction, he was also erudite and intellectually broad-minded. Like all the good speaker engineers I've met, he was fully aware of our lack of knowledge, and used his overseas ambassador rôle to great effect in spreading ideas internationally. It was via Raymond that I first met Franco-Japanese audiophile/journalist Jean Hiraga. A consequence of that meeting was the first English language article about the sound quality of cables and interconnects, which I had translated from French (not Japanese!). Back in 1977 (ish), this was blasphemous but fascinating stuff.

Meeting up with Raymond was always educational. We worked quite closely together for a short period in 1985 while I was working on a corporate brochure for KEF, and I quickly developed a real fascination for the whole history of loudspeakers and their evolution. The man was a natural teacher, and could put his finger on anyone of innumerable sources, while his analytical mind made the most interesting links and connections.

Through the decades when he led KEF as well as the Audio Engineering Society, an inveterate jet-setting workaholic lifestyle took its toll, and Raymond suffered lengthy bouts of illness in recent years. When we last met, at Penta/Ramada '94, he seemed stronger and more vigorous than for some time, so his sudden death in March was a great shock. My lasting regret is that he didn't enjoy health in retirement long enough to write the definitive history of hi-fi. It's a fascinating story which deserves to be told, and I'm sure Raymond could have told it best of all.

Raymond Cooke OBE — a great international ambassador for the British hi-fi industry.



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