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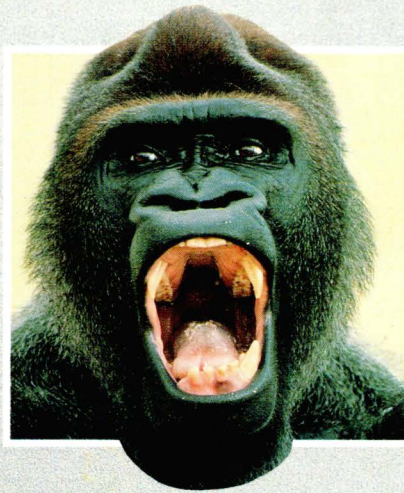
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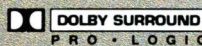
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From the Editor's chair

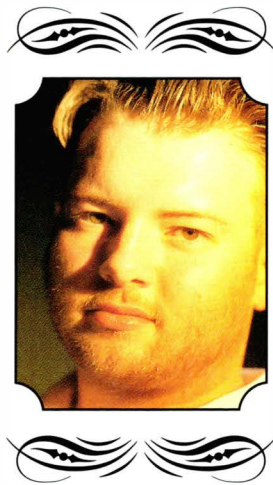
 Welcome to the April 1995 edition of *Hi-Fi Choice*. And what an issue we have in store! First and foremost there's the small matter of that free Maxell UDII • CD tape stuck on the cover, which UK readers and subscribers should now unwrap and gloat over. (Alas, if you bought the magazine on a news-stand outside Britain, you will have to indulge in virtual gloating, because we couldn't put tapes on your copies. Sorry about that.) The Maxell UDII • CD was a Best Buy in our blank-tape guide published with issue 139, so it's quality home taping ahoy!

 You'll recall in last month's column that I promised an update on what's happening with the new digital disc formats. Well, since I penned that line, our columnist Barry Fox has been privy to an exclusive briefing with Philips in Holland at the end of February. So we've decided to hold on for a month so that Barry can bring you a definitive report on the new formats.

 Books about hi-fi tend to be heavy on circuit diagrams and low on entertainment. However, a new tome recently into *Choice Towers* tips the balance firmly in the opposite direction. *The Search For Musical Ecstasy* introduces the unique (if rather myopic) world-view of one Harvey "Gizmo" Rosenberg, valve amp pioneer and self-styled President of the Addiction Brain Trust. His first page provides a remarkable concise summary of the book's contents: "Speculations on an expanded gizmological metacontext for the electro-mechanical art forms which create ecstatic aural metaphors." The book costs around \$20; readers (of a broad-minded but stern disposition) who fancy grappling with his prose should enquire to the Image Marketing Group, 911 Hope Street, Stamford CT 06907 USA. Alternatively telephone +1 (203) 357 7600 or fax +1 (203) 967 9100.

 I have received many letters commenting on the different conclusions drawn by hi-fi magazines' equipment reviews. Well, it would be a very boring world if everyone agreed about everything! Hi-fi, like music, is a matter of personal taste. However, readers should take time to ponder on the amount of hi-fi industry experience that buttresses the reviews you find within the pages of the different hi-fi journals.

In recent years it has become fashionable to believe that the greenest beginner can sit down and listen to hi-fi equip-



ment; then write down impressions of what they heard as a fully-formed magazine review. Insofar as this has encouraged ordinary folk to have the confidence to pass through dealers' doors to listen – and buy – with confidence, this A Good Thing. However, as in any other form of criticism, the art of hi-fi reviewing is to listen beyond the surface patina of musical notes; and instead to hear deeper into a piece of music's tones, timbres, rhythms and dynamics. The true critic focuses on the question of how these four musical parameters can be portrayed so differently from one hi-fi system to another.

Over time, the experienced listener will start to identify patterns emerging from such observations. If this person is sufficiently astute, he or she will then notice certain correlations between the patterns they have identified and aspects of the reproduction equipment. Only then will that person start to be of true worth to the magazine reader; only then will that person cease to write 'Wow! This a great amp – buy one today' and opine instead the more cautionary 'Wow! This amp has many good points, but extended listening revealed shortcomings which might not suit it to your system – make sure to have a good demonstration before purchase.'

We must be very clear about what hi-fi magazines can and can't do. A hi-fi magazine can assemble a number of products at around the same price, and discern the differences between them on as few or as many parameters as desired. Alternatively, a hi-fi magazine can take a product in isolation, and submit it to the subjective impressions of an experienced listener whose preferences are well known. When exceptional products are encountered, the magazine should not be afraid to shout about the fact. At that point, however, the magazine should gracefully hand the baton to the authorised dealer network; after all, it is their job (not the magazine's) to actually exchange products for large wads of folding.

We are all runners in the Great Hi-Fi Relay Race. The manufacturers make the products; the magazines comment on the products, the dealers sell the products, and you, the readers, buy the products. We do this not for the glorification of capacitors and transistors, but because all of us love good music reproduced to its fullest extent. Differences of opinion between magazines are the starter's gun for audiophiles to go out and experience for themselves. It's up to you!

Stan Vincent, Editor-in-Chief



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Advertise equipment you wish to sell for just £5. See page 85 in this issue for the coupon — entries accepted by letter only.

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BACK ISSUES

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Telephone (01789) 490215 • Fax (01789) 490878
Back issues of most the recent issues are available — please call our mail-order fulfilment company, Dennis Direct, on the above number. We regret that at present, we are unable to supply photocopies of articles which are out of print. However, we hope to make this service available shortly. Please watch this space for details.

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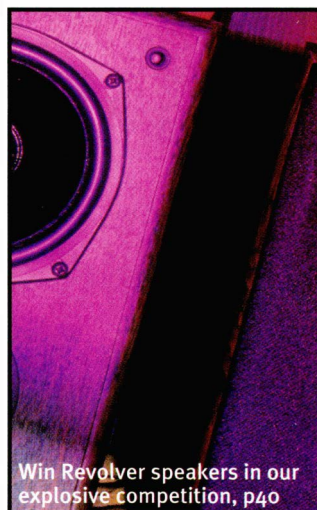
Hi-Fi Choice welcomes all information on new and upgraded products and services, for coverage within the news and review pages. However, the publisher respectfully points out that the magazine is obliged neither to review nor return unsolicited products. The Editor is always pleased to receive ideas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

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THE GET-OUT CLAUSE

While every care has been taken in the preparation of this journal, the publishers cannot be held responsible for the accuracy of the information herein, or for any consequence arising from it. Readers should note that all judgements 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.



Win Revolver speakers in our explosive competition, p40

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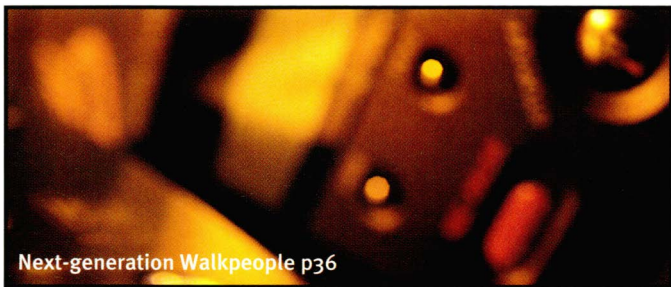
Vent that spleen and you may win a sweatshirt.

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Go digital with new, sleek speakers from Philips



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The highly mobile Alvin Gold stalks about a bit, while strapped to three of the very latest portable digital recorders.

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The HI-FI CHOICE

Charter

Why Hi-Fi Choice is your essential choice

RESPECTED EQUIPMENT REVIEWS

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

UNIQUE 'SWING TAGS' 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.

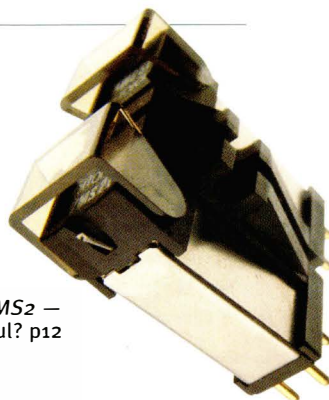


EXPERIENCED WRITERS

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 tomorrow's fusion of images and sound.



Ortofon's VMS2 — cheap n' cheerful? p12

UPDATE

Malcolm Steward files his report from Planet Hi-Fi

Pioneer cuts DAT price at the double



Pioneer's D-05 offers 96kHz DAT for just £800

Pioneer has kept its promise to deliver an affordable version of High Speed DAT technology, with the launch of the D-05. This £800 machine is only the second digital tape recorder which can operate at a 96kHz sampling rate — twice that of conventional DAT recorders, and more than twice the rate used in CD players. The new deck, which is finished in black instead of the satin gold that was used on Pioneer's first High Speed DAT player, the D-07, has a front panel switch that allows users to select 32kHz, 48kHz or 96kHz operation.

To achieve High Speed recording, the tape transport and head drum operate at twice the standard speed.

This increases the recording bandwidth and pushes undesirable anti-aliasing and post-DAC filtering side effects a further octave out of harm's way.

Pioneer is now also planning to introduce a professional version of the D-07. Named the D-9601, this High Speed DAT recorder is expected to sell for £2000. It will feature balanced inputs and outputs and will work additionally at 88.2kHz. This just happens to be twice the rate of conventional CDs, which suggests that the company's interest in promoting high speed compact disc is still alive. To date, Pioneer has only demonstrated this technology privately, but to worthwhile effect.

☎ (01753) 789789

REL's Stormin' Bass

The next product from Richard Lord, the king of sub-bass, will be the REL *Storm* subwoofer. Based on the popular *Strata* design, the *Storm* is now 5cm taller to accommodate a built-in 100w amplifier and features a custom designed 254mm Volt drive unit. This driver will also be offered as an upgrade for existing owners of REL *Stentor* and *Studio* subwoofers.

The *Storm* also sports three XLR inputs to cover a wide range of applications and REL's proprietary Active Bass Control system to further aid system matching. The 10m cable supplied with the *Storm* can be terminated with phono connectors or supplied bare for connection to a pair of speaker terminals. Finished in Grittex black, the *Storm* features a 30mm thick medite cabinet and is expected to be available for £695 in mid-1995.

☎ 0181-207 5050

Harman Kardon cites Citation

The prestigious American-built Citation range from Harman Kardon has been resurrected with a new series of multi-channel electronics and loudspeakers. The first products aim to integrate high quality stereo and home theatre performance. The range starts with the remote-controlled Citation 7.0 Surround Controller Pre-amplifier, designed by 'surround sound legend' Jim Fosgate. This features eight A/V inputs plus two record outputs and main channel outputs. The inclusion of both

on-screen graphics and a fluorescent display allows the device to be operated by "both the neophyte and the sophisticated user." Along with Dolby Pro Logic and Home THX modes, the 7.0 also provides an exclusive Six-Axis surround process, which works with conventional stereo recordings as well as home theatre material. No UK price has been set yet, but Harman hopes to keep it the right side of £3000.

The Citation 7.1 power amp, designed to partner the 7.0

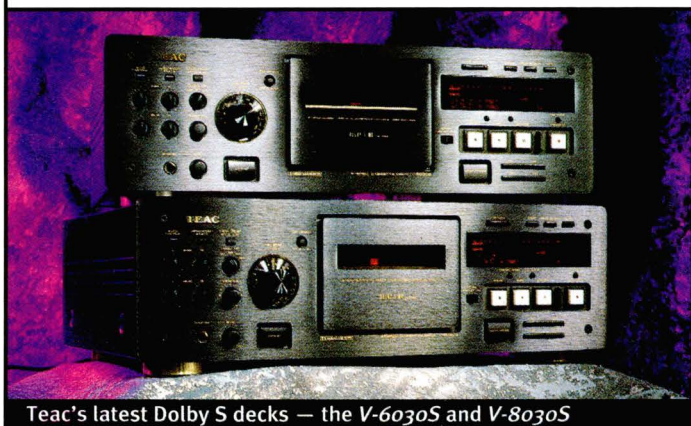


pre-amplifier, uses all-discrete circuitry to deliver 125Watts to each of its four channels, and can supply 400W/channel in bridged stereo

mode. When the 7.1 arrives in this country later this year, it should be priced at just under £2000.

☎ (0181) 207 5050

Teac says yes to 'S'



Teac's latest Dolby S decks — the V-6030S and V-8030S

Teac has added two Dolby S equipped cassette decks to its Reference Series, which will allow owners of the up-market VRDS series CD players to expand their systems with complementarily styled equipment.

The V-6030S is a three-head machine that features a centrally mounted, closed-loop, dual-capstan drive system, comprehensive vibration protection and remote control operation. Priced at £550, it has the 'chunky' look of Teac's VRDS products and uses the same distinctive square white push-button controls. Recording level

adjustment comes courtesy of a rotary control, styled to match the volume control on Teac's A-BX10 integrated amplifier.

The second new deck, the V-8030S, sells for £649.95 and shares many of the features found on its less expensive sibling. However, your extra money pays for a sub-chassis mounted, Quartz-locked, direct drive, dual-capstan transport mechanism. Both machines have independent bias and record level controls for each channel, along with powered cassette-loading drawers. ☎ (01923) 819630

Michell goes Orbetal with Gyrodec update

Twelve years after compact disc first arrived, the high-end turntable market still refuses to lay down and die. The latest attempt at advancing state of the art vinyl replay is the Michell Orbe. This new deck is priced at £1950, which includes a QC power supply but not a tonearm.

The Orbe is based on Michell's fourteen-year-old Gyrodec, which remains in production. The turntable features a new 60mm thick, carbon-loaded acrylic platter, driven by a Papst motor. The latter fits into a 2.5kg machined brass and aluminium housing, which is isolated from the plinth to minimise vibration-induced interference. The platter attaches to a sprung, cast subchassis that benefits from being mass loaded and damped.

This is also isolated from vibration by a three-point, spiked decoupling system using two acrylic bases.

As with the Gyrodec, there's no problem fitting most popular tonearms to the Orbe. Michell supplies drop-in arm mounting plates that simply bolt to the subchassis. Each mounting plate is machined to an appropriate weight for the desired tonearm. The point of this is to give a fixed weight to the arm/plate combination so that the deck's suspension won't need to be reset for each different arm.

The QC regulated power supply that comes with the Orbe provides electronically switched 33 and 45rpm speeds, while an optional motor pulley gives manual speed change to 78rpm. ☎ (0181) 953 0771

Floating On Air Pods

Reference International has announced details of a revolutionary new equipment support and a new turntable. The equipment support is known as the Air Pod, as it allows the supported equipment to float freely — essentially on three columns of air.

Air Pods work by positioning two opposing magnets at either end of a pair of shielded cups. The magnets create opposing magnetic fields to float one cup over another. Perhaps surprisingly, the Air Pods are claimed to leak virtually no stray magnetic flux.

The Air Pod will be available in three sizes to cope with different equipment weights. The AP1 will support up to 4kg and sells for £68. The £75 AP2 will hold 8kg, while the £85 AP3 will hold up to 10kg apiece. Stacking a number of Air Pods increases the weight that can be supported — three AP3s will hold 30kg. Accordingly, the Air Pods will also be sold in three-packs.

The Air Pods are an integral part of the design of the new £5,500 Stratosphere turntable. The distinctive feature of the 175kg Stratosphere is its massive build, hewn from aluminium and brass. Obviously, with such a massive design, there is no form of suspension. It is designed to sit upon three Air Pods and to suit the Graham 1.5T tonearm, imported by Reference International.

☎ (01435) 868004

IN BRIEF

UK Distribution has added another Italian brand, Unison Research, to its roster of products. Priced from £995 upwards, the range includes single-ended triode and pentode designs in distinctive wood-cheeked cases. ☎ (01753) 652669

Sevenoaks Hi-Fi and Video is expanding its retail network with a new franchising deal, directed by Malcolm Blockley (formerly of Hi-Fi Markets). ☎ (01494) 431290

One For All offers programmable remotes, starting at £30, that operate virtually all IR controlled devices. A help-line offers support for customers who experience problems. ☎ (01727) 826516

The Audio File, based in Bishop's Stortford, has taken over the business and premises of Steve Boxshall Audio in Cambridge. The shop will stock Naim, Linn, Rega and more. ☎ (01223) 68305

Following its successful relaunch at the Winter CES, New Zealand's Perreux Technologies is seeking a UK distributor for its new range of hi-fi and home theatre electronics. ☎ (00 649) 570 5484

Van den Hul's new silver-coated D-102V interconnect promises high performance at an affordable price of £39.99 for an 0.8m pair. ☎ (0181) 810 9388

JVC has launched two new tapes. The G1 (ferric) and AF11 (chrome) both come in space-saving sleeve type cases. ☎ (0181) 450 3282

The much-appreciated Chesterfield Hi-Fi Show, now called The Great British Hi-Fi Show, will take place on 22 and 23 April at The Palace Hotel, Buxton, Derbyshire. Entry is free. ☎ (01246) 200096

Following its success with hi-fi stands, Soundstyle has introduced three 'cinema sound' furniture systems. Starting at £170 for the X300 three-shelf table, the range is finished in a choice of seven colours and is supplied with either audiophile cones or carpet-friendly castors. ☎ (01284) 701101

Slick-lookin' home cinema stands from Soundstyle



M A S T E R S O F M U S I C



The new Music Series loudspeakers from Mordaunt-Short Mastery of Sound

This mastery of sound is the result of numerous technical innovations unique to Mordaunt-Short.



For instance, MCS technology – an injection moulded cone and surround which ensures a precise cross-section profile for exact bass unit performance.

All crossovers are first order configurations based on minimalistic principles because of the excellent performance of the individual drive units. Result? A simple load and fewer components between the amplifier and the final sound. Bi-wiring is possible too on all speakers except the MS10.

No Phase Cancellations

The conventional mid-bass unit dust cap has been replaced with a phase plug. The path length is calculated to eradicate phase cancellations and give excellent dispersion across the critical middle frequencies.

Low colouration baffles have been a design priority in all Music Series loudspeakers. On the MS10, MS20 and MS30 this has been achieved with mica-filled polypropylene tensioned with steel tie rods.



On the MS40 and MS50, a 30mm dual material composite baffle has produced an extremely rigid structure.

Exclusive

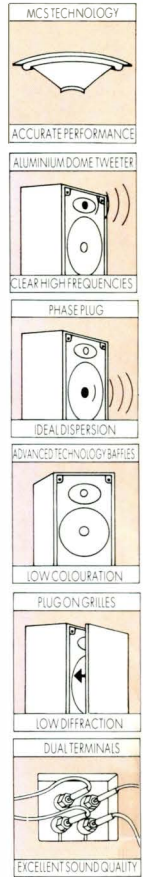
Controlled high frequency performance is achieved thanks to a 25mm aluminium dome tweeter designed and built by Mordaunt-Short.



The ultra thin metal diaphragm and compression moulded rubber surround are mounted on an elliptical low resonance chassis, utilising a high temperature voice coil with liquid cooling and damping.

Making Music

Music first. Music second. Music whichever way you listen to it. With the Music Series, Mordaunt-Short is making music more naturally than ever before. The masters of music are taking their title to heart.



We will be pleased to send you a Music Series brochure on request, together with the address of your nearest dealer.

Mordaunt-Short



IN BRIEF

A radical new £640 equipment support from Acoustic Artists (shown below) uses Acoustic Isolation Islands and the Springdulum (patent applied for) in its fight against unwanted vibrations. ☎ (0151) 734 2753

Reference Music Systems will use the Great British Hi-Fi Show to launch its revolutionary, all-metal *Revelation* loudspeakers. These miniature marvels, the company says, are "as open as panels but can move air like large boxes". ☎ (01246) 200211

Denon's new professional MD recorder, the *DN-995R*, should now have reached the shops, priced at £2750. An improved version of the *DN-990R*, the new model incorporates several enhancements requested by users. ☎ (01753) 888447

Newly arrived from Marantz are the *PM-65* and *SM-500* amplifiers. The £300 *PM-65* is a remote-controlled 70Wpc integrated, while the £350 *SM-500* is an 80Wpc power amp. ☎ (01753) 680868

A new US company has developed the last word in environmentally-friendly audio. Biosoft Inc has announced CD-Disposable, the world's first biodegradable format. The new CD is compatible with the Red Book standard, and even the jewel case is recyclable. After six months or so, the disc starts to decompose, turning brown and giving off a characteristic odour. Disc and case should then be buried in soil, where they will quickly turn into premium-grade fertiliser. CD-D will be targeted at the teenage market, according to Robert A Wilson, Biosoft's CEO.

Oops!

Due to a clerical error in our last issue, the tape type figures for the Aiwa and Harman-Kardon cassette recorders were duplicated. Another error caused the pictures of the two Sennheiser headphones in the Pocket Power supplement to be swapped. Finally, yet another error attributed Chris Beeching's review of the Audio Innovations *P1* phono stage to Jimmy Hughes. Bleedin' clerics, they just haven't been able to do a thing right since we stopped printing in Latin. Apologies to our reviewers, Aiwa, Harman-Kardon and Sennheiser for any inconvenience caused.



No-nonsense CD players from NAD

The 514 CD player spearheads a dozen new products that NAD has promised for this year. Featuring "no frills, no gimmicks, just superior sound quality, functional design and the very latest in circuit layout and components", this audiophile grade machine sells at £340.

One special feature of the 514 is its CDR function. Intended for late night listening sessions, the Controlled Dynamic Range circuit prevents soft passages becoming too quiet while ensuring that loud bits aren't too oppressive. This digital compressor can also be used when making tapes for the car to prevent low-level music being drowned out by ambient noise. The 514 further offers an isolated, buffered digital output designed

to match digital inputs on DACs and tape decks precisely, without signal reflections and overshoot degrading its performance. The player's on-board DAC is a MASH type, which uses a five-pole filter to remove RF spurious and keep the audio band totally clean.

For convenience-oriented listeners, NAD has released the 517 five-disc carousel CD changer. In its attempt to combine single-disc player sound quality with six sofa-bound hours' worth of uninterrupted playing, this £400 bitstream machine uses a DC-coupled output stage and high-grade components. A digital output offers upgrade possibilities and flexibility for high-tech home-tapers. ☎ (0181) 343 3240

High-end LD player from McIntosh



The *MLD7020* was designed for first class sound and picture quality

The McIntosh *MLD7020* is a new high-end Laserdisc player from one of America's best established hi-fi names. The NTSC-only player sits behind an illuminated, etched glass fascia and can handle both CLV and CAV discs. It automatically switches from one side of a disc to the other.

The *MLD7020* boasts advanced digital video processing and noise reduction systems for high picture quality and image resolution. To keep the sound quality on a

par with the video, it uses two bitstream DACs with double-step noise shaping.

The player offers full remote control and will integrate with current McIntosh A/V controllers and remote systems. Identical front panel dimensions to those of the *MX-130* and *C39* Control Amplifiers and the *MC7106* six-channel power amplifier ensure that the £3,600 machine is in aesthetic harmony with its stablemates. ☎ (01483) 454993

New Mirages from Illusion

The perfect speaker is not an illusion. It's a Mirage. Or, that's what the folks at the Canadian Mirage loudspeaker company are saying about its new 90i Series Bipolar designs. Each of the slim, floor-standing models which make up this range uses duplicated arrays of drivers — one forward and one rearward-firing — to generate a substantial, three-dimensional soundfield.

The range consists of three radiator-vented, Bipolar two-ways: the £799 *590i*, the £1075 *890i* and the £1325 *1090i*. All are suitable for bi-wiring or bi-amping, and come in a black gloss with black grilles.

The UK importer, Audio Illusion, also stocks Mirage's non-Bipolar bookshelf range, which comprises four models priced between £199 and £599, as well as the flagship *M-75i*, *M-55i*, *M-35i*, and *M-15i* Bipolar models whose prices range from £1549 to £5995. The top model here claims a usable bass response extending down to 17Hz. ☎ (01753) 542761

Coda is repeated

KEF has been making babies again. Not content with the recent *Coda 7*, it has introduced a more substantial version known as the £180 *Coda 8*. The two share identical styling but the *Coda 8* is housed in a larger enclosure. The *Coda 8* has the same 25m soft dome tweeter as its little brother but uses a 166mm paper cone bass unit. ☎ (01622) 672261

HomeEntertainment

By the time you've read **Hi-Fi CHOICE** you'll know everything worth knowing about the current hi-fi scene, but your consumer electronics wisdom is incomplete until you've read our sister magazine. **HOME ENTERTAINMENT** tells you all about tumultuous TVs, sumptuous Surround, nifty Nicam, dishy dishes, classy cable and all sorts of other good stuff. April issue on sale Friday 17 March.

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01227 766161

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01892 531543

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01634 846859

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West Wickham
0181 777 9321

London - North

Bartletts Hi-Fi

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London - West

A & M Electronics

Tottenham Court Rd
0171 580 1577

ASK Electronics

Tottenham Court Rd
0171 631 5298

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0181 567 8703

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All ● of the above dealers have Sennheiser Infra-red products on demonstration

NEXT MONTH

HI-FI CHOICE

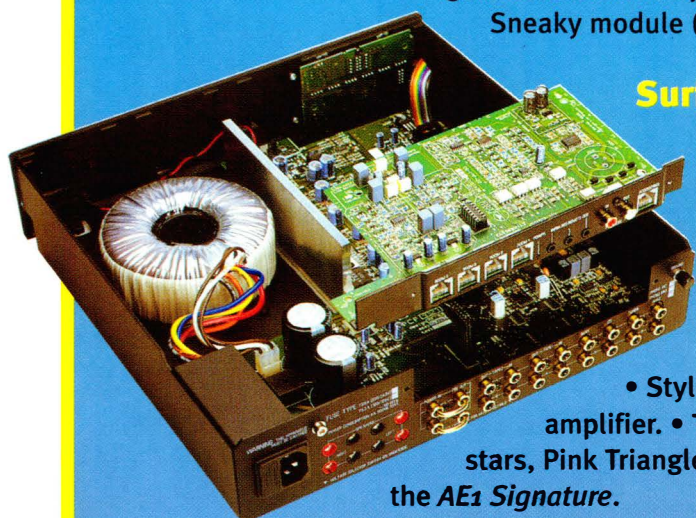
1000S OF FUN THINGS TO DO WITH A PHONO PLUG

Eight of the best

Discover which is the finest amplifier under £300 in our exhaustive eight-way blind listening test. The latest models from Aura, Denon, Sony and many more are given the full *Hi-Fi Choice* blind listening panel treatment, complete with amazing high-tech measurement graphs.

Room for manoeuvre

Multi-room has come of age, thanks to Glasgow's finest — Linn Products. We present the first thorough investigation of Linn's advanced, new, fully-programmable Knekt system, which integrates with the Majik amp via the Sneaky module (left).



Surfing the airwaves

Everything you wanted to know about tuners, but were afraid to ask. Paul Messenger talks frankly about antennae and coaxial cable, then lists his favourite airwave processors, such as the Audiolab 8000T (below).

Plus...

- Stylish European audio with Densen's new integrated amplifier.
- The first speakers from analogue and digital superstars, Pink Triangle.
- Acoustic Energy's new luxury super mini speaker, the AE1 Signature.

Plus loads, loads more!

The May 1995 issue springs into the stores on Tuesday April 11



MAXELL'S UD-CD TAPE CAPTURE



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Choice SESSIONS

New products given the once-over by our keen-eared scribes.

AMPLIFIER

Arcam Delta 290P

PRICE: £400

- ▲ Perfect add-on for the Arcam Delta 290 or Xeta One: crisp, dynamic and detailed.
- ▼ Speakers must have bi-wire terminals to get the best from the addition.

One of the finest products to come *Hi-Fi Choice's* way in recent years was the £480 Arcam Delta 290 — it's a powerful integrated amplifier with tone controls

that don't get in the way, a remote control option, and a sound as fine as you can expect for less than half a grand. The combination of facilities and sound have always made it a difficult amp to upgrade.

Enter the new £400 Arcam Delta 290P, first seen publicly on the *Hi-Fi Choice/Real Hi-Fi Campaign* stand at *Live 94*. It's basically the 75watt power amp stage of the Delta 290 in a box identical to that of the integrated, save for the signal handling controls.

Using the 290 as a pre and the 290P as a power amp offers a slight improvement over the performance of the basic Delta

290, but the real gains start to manifest themselves when the 290 and 290P are used to bi-amplify a speaker. In this case, the 290 is connected to the HF (treble) terminals of a bi-wireable speaker, while the 290P hooks up to the speaker's LF (bass) terminals.

This adds a good deal of controlled low-end grunt to an already weighty sound — equal to about half an octave to the bass of most speakers. Underpinning the bass seems to have a knock-on effect in the mid-band, freeing up and opening out the soundstage. There is also a large attendant increase in overall transparency, although treble

performance is pretty much unaffected by the upgrade.

Most importantly, it leaves the user with a perfect future upgrade path — if you replace your Delta 290 with a preamp you have a dynamic and detailed sounding power amp waiting in the wings. And if you decide to go AV in the future, swapping the Delta 290 for an Arcam Xeta One should give an excellent, tonally matched power amp for those front and rear channels.

Alan Sircom

A&R Cambridge (Arcam) Ltd,
Pembroke Avenue, Denny Industrial
Centre, Waterbeach, Cambridge
CB5 9PB. ☎ (01223) 440964



Bi-amping your system with a Delta 290/290P will give a crisp, detailed sound with oodles of bass

EQUIPMENT SUPPORT

Platform 7

PRICE: £60

- ▲ **Elegant way to upgrade an existing equipment table, and good value for money.**
- ▼ **Slows bass down with many products – there are better support systems.**

Where do you go if you've got a Sound Organisation table (or something similar), but are fed up with medite shelves and want to improve the sound at the same time? Simply add a £50 Platform 7 marble isolation slab and... voilà! Instant high-end!

The Platform 7 idea couldn't be any simpler. A slab of marble is cut to suit your equipment table and then polished. This immediately transforms a drab platform into something far more exotic-looking. The theory is that marble is as acoustically dead a material as you can find, and the additional weight of the Platform 7 mass-loads whatever sits on it.

It certainly transforms the sound of a table, but that isn't necessarily the same as saying it improves it. CD players and preamps gain a cleaner top end as well as greatly enhanced dynamics and bass weight. And though the bass improvements don't extend to weighty power amps, treble improvements do.

But all is not rosy. While the Platform 7 adds clarity to the treble, it also tends to cloud the mid-band and slow down bass transients, making music with deep bass sound out of kilter. Those with Naim or Exposure amps will find that the treble becomes a little too spartan.

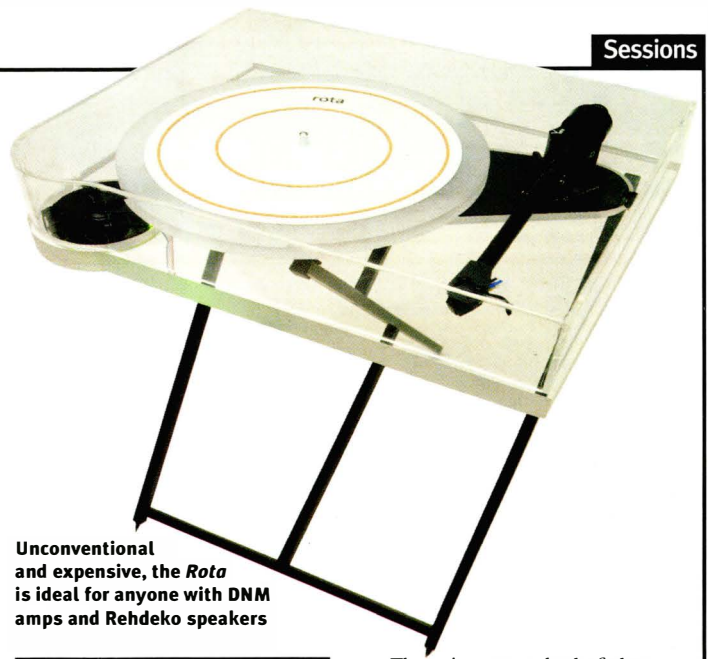
I can think of many systems where the Platform 7 will work extremely well. After all, it's not a vastly expensive way of upgrading an existing table, and will be particularly well suited to slightly warm, valves-into-horns type systems. I still prefer the admittedly more expensive Mana system for its speed, but the low cost and the looks of the Platform 7 will sway many.

Alan Sircom

Platform 7, 3 Abbots Drive,
Wembley, Middlesex HA0 3SB.

☎ (0181) 904 2646

Platform 7 supports: a marble of modern technology



Unconventional and expensive, the Rota is ideal for anyone with DNM amps and Rehdeko speakers

TURNTABLE

DNM Rota 2

PRICE: £4,450

- ▲ **Vivid, unique-sounding deck, highly detailed midrange and great sense of rhythm.**
- ▼ **Distinctive sound not for everybody. Silly names!**

Though a £4,450 record deck is really more of a *Statements* piece than *Sessions* fodder, new turntables are such a rarity today that we thought you should get a brief impression of the DNM Rota 2 before it's submitted for a serious group test in a forthcoming edition.

Following in the DNM tradition of solid-core cable and lightweight non-magnetic components, the Swiss-made Rota 2 is mainly hewn from clear perspex. Exceptions are the ultra-light wooden subchassis and DNM's own *Domo* stand – by far the sheerest, lightest stand on the market today. It even comes with a 16-valve, GTi version of the QR *Ringmat*, only available for the Rota. As you'd expect from the Swiss, the finish is superb. The top of the range Rota 2 is supplied as a complete package, including Rota, *Logic Datum*-inspired Yota tonearm, *Lexa* cartridge and *Domo* stand. And yes, you do get used to the silly names.

The Rota turns almost every piece of current thinking about turntables on its head, even to the point of the on/off LED. This gives its unearthly green glow to the clear perspex deck only when the deck is switched off!

There is a great deal of play in the armboard. The subchassis is suspended from the chassis by rubber bushes, but the main isolatory effects stem from the belt and the way it links to the platter via an isolated sub platter. It uses an inverted ruby bearing, a custom-made motor and a special oil, straight out of the watchmakers.

To properly appreciate the Rota takes some re-education, as it doesn't behave or perform like most other decks. One also needs to re-educate price value judgements, as this product doesn't really look like over £4k of platter-spinner.

As for the sound, it is as open and distinctive as the rest of the DNM range. A lot depends on the set-up of the deck, but it has the ability to get under the skin of a record, with excellent levels of detail and an infectious and up-beat rhythmic sense. Not everybody will enjoy the absolutely honest presentation, but the Rota is never anything less than exciting. For a fast, tight-sounding deck that weighs only slightly more than a large bag of chips, it also has surprising depth and impact to the bass.

Anyhow, those after a more thorough review will have to wait a couple of months. Meanwhile, all those with extensive vinyl collections, DNM amps and Rehdeko speakers should place their order for the Rota 2 immediately.

Alan Sircom

Virtual Reality Audio Systems Ltd,
PO Box 383, Brentwood, Essex
CM14 4GB. ☎ (01277) 227355

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PD-S703 "This is a remarkable CD player for the money with a forthright, dynamic sound. It can slot into systems from very affordable to very serious and deliver real CD magic."

WHAT HI-FI? AWARDS 1994



A-400 "Pioneer's design concept snaps into focus with an amp that seems to bubble with musical detail. A budget bench-mark."

HI-FI CHOICE APRIL 1994

FREephone 0800 480480

 **PIONEER**
The Art of Entertainment

LOUDSPEAKER

Heybrook Heystak

PRICE: £500

- ▲ **Elegant speaker with a highly detailed, level-headed sound quality.**
- ▼ **Could do with an injection of life. Suits lean-sounding equipment.**

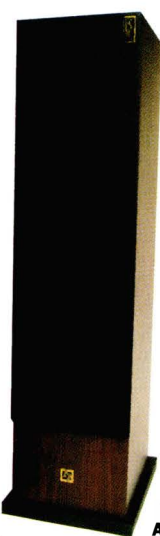
At last, here's another floorstanding multi-driver loudspeaker. First shown at *Live 94*, the £500 Heybrook *Heystak* undercuts the ever-popular *Castle Chester*, *Linn Keilidh* and *Mission 753*. It does this by using acres of wood-grained vinyl instead of the real tree, but you'd have to look very closely to tell the rosewood finish was anything less than a good veneer.

Standing a tad under a metre tall, the slimline *Heystak* uses Vifa's 'Total Concept' drive units throughout. With each speaker sporting a 25mm fabric dome tweeter, two coupled polypropylene mid/bass units and a further auxiliary bass radiator, that adds up to a lot of Vifa units.

Heybrook recommends that the *Heystak* should be placed less than 250mm from the rear wall, that the bi-wire option is taken up, and that it should be allowed a heavy run-in.

Break any of these commandments and you're in for a poor sound.

And indeed, the *Heystak* is as alarmingly sensitive to set-up as such a strict list of instructions suggests. Place it anything more than 300mm from the rear wall and you can kiss that



8000P amps out there, and well worth listening to.

Alan Sircom

Heybrook Hi-Fi Ltd, Estover Industrial Estate, Plymouth PL6 7PL.

☎ (01752) 731313

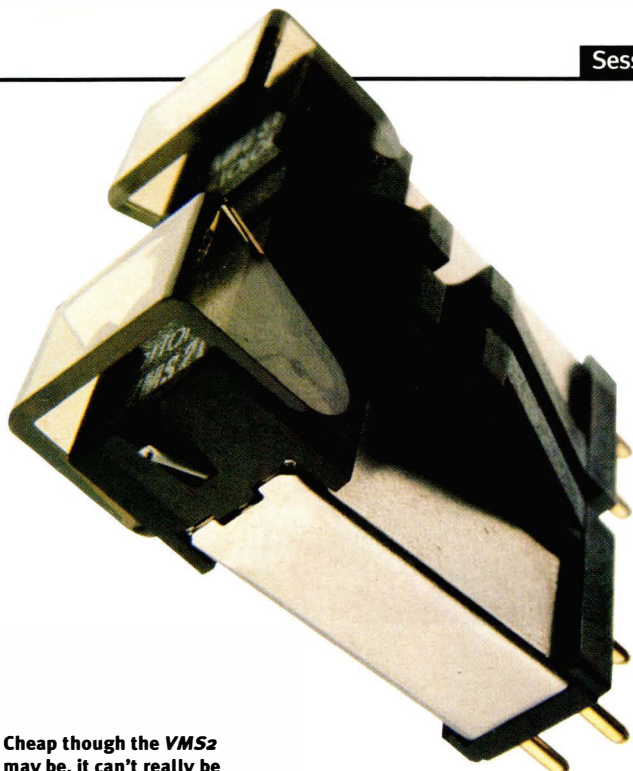
The Heystak can sound a tad passionless but works well with Audiolab amplifiers

bass goodbye; placing it too close to the same wall adds a considerable amount of stodgy, weighty ballast to the sound. We found that the best balance was achieved using Audiolab 8000M monoblocks and DNM solid-core cable throughout, which suggests that slightly lean electronics and the *Heystak* form a good match.

Once run in, the *Heystak* has the sort of highly analytical sound that's often found in Euro-speakers like those from Dynaudio and Morel. The *Heystak* will reproduce a huge amount of information, especially treble. This is a speaker that doesn't favour any kind of music over another, and which will play the hardest rock as adroitly as the most delicate choral piece.

This is perhaps the *Heystak's* one stumbling block. Although supremely detailed, it can sound a little too egalitarian. It's clean, open, bright and fast, but it can also sound rather bland for some tastes. The precision of the *Heystak* can make impassioned music such as Miles Davis' (recently Ultradisced) *Kind Of Blue* sound rather passionless.

On the whole, the Heybrook *Heystak* and its cerebral nature will appeal to many listeners. Granted, it lacks some of the vivacity of a Linn or a Mission, but it is also the perfect partner for all those Audiolab 8000A and



Cheap though the VMS2 may be, it can't really be called a bargain

CARTRIDGE

Ortofon VMS2

PRICE: £10

- ▲ **Cheap replacement for aging cartridges.**
- ▼ **Higher outlay can buy better cartridges.**

What can you buy for a tenner these days? A round? Just about. A CD? Maybe. An Ortofon AT VMS2? Definitely. The Danish company is aiming this king budget cartridge as an instant replacement for tired stylus on ageing low end turntables. As such, it has few pretensions.

Which is just as well. Fitting this ten pound special to a Dual CS505-4 UK proved a rather unedifying musical experience. The soundstage was immediately awash with undisciplined bass, poor focus and a lack of attack. Music certainly issued forth from the speakers, but was rendered lifeless. Turning up the volume failed to improve matters and didn't reveal any more detail.

The VMS2 was reasonably comfortable with small productions where it had relatively few instruments to deal with — Beck's *Mellow Gold*, for instance — but as soon as it was asked to handle anything more complex (*Monster*, REM), things became very messy

indeed. The overall effect was of a screen being placed between the sound and the listener.

Music which has the ability to leave you breathless for more was reduced to a state where it gasped for breath itself.

Switching back to my regular turntable/cartridge combination revealed that what had sounded like an irritating buzz on the Stone Roses' *Second Coming* was actually a pair of maracas!

With regard to depth, there isn't much to add: it's very flat. Overall, this is a cartridge which, while making a clean sound, does not make music. The VMS2 was at its best when running through well-produced records, where its performance was substantially helped.

This probably all sounds very negative, so I'll try to put it in context: the VMS2 is a £10 cartridge, and in today's marketplace, that's almost a giveaway. But the £200 Dual that I used to test it comes with an AT95E that costs three times as much and sounds many times better. If you need a new cartridge and really can't afford anything else, the VMS2 will do the job. But don't expect anything more than a clean, unemotional experience.

Paul Fisher

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



SYSTEM

Sony La Scala 1

PRICE: £1,400

- ▲ **Sophisticated-sounding system that is valid competition for the separates.**
- ▼ **A trifle spitty. Lacks dynamic range.**

By leaps and bounds, the midi system becomes increasingly sophisticated. Companies like Sony are pushing the envelope of technology with the sort of specifications that would be unheard of outside the serious end of high end audio only three years ago.

Take Sony's £1,395 *La Scala 1* system, for example. Beneath the slick alloy-fronted panels beats an audiophile wannabe heart. Aside from a decent CD player, the *La Scala 1* boasts a RDS EON 30 preset LW/MW/FM tuner and a drawer-loading Dolby S tape deck. There is also the option to slot in a matching £549 MiniDisc player later in the year. Unlike the average mini system, where each unit is connected by a single bus cable, there are separate power supply, comms and signal cables, the last being straight-forward phono types. These have colour coded sockets, making for easy connection, though the collection of sockets at the back of the system is less than pretty.

But the real innovation is in the form of the amplifier and speakers. Instead of the standard integrated amplifier/passive-dynamic-speaker configuration, the *La Scala* uses a preamp partnered to a pair of powered active speakers with electrostatic tweeters and dynamic bass drivers. To help the bass units keep up with the sheer transient speed of the electrostatic tweeters, they use a motional feedback system. This monitors the travel of the speaker cone and compensates amplifier output accordingly. As a result there is a finite limit to cabling, which means that the system ideally sits between the two speakers.

Refinement and openness are the keys to the sound of this system. The overall sound is smooth and subtle, with a slight spit, but a fine sense of space around all the instruments, just as you'd expect from an electrostatic. The *La Scala* is one of the few integrated systems that can compare favourably with similarly priced separates. A well-matched separates system will have superior dynamics, volume and bass depth, but would be pushed to outperform the transparency and delicacy of the *La Scala 1*. In short, the *La Scala* sings a siren's song.

Alan Sircom

Sony UK Ltd, The Heights,
Brooklands, Weybridge,
Surrey KT13 0XW.
☎ 0181-784 1144

PREAMPLIFIER

Audiolab 8000Q

PRICE: £1,000

- ▲ **Extremely well-made preamp. Highly detailed, almost no musical intrusion.**
- ▼ **Be prepared to spend a fortune on music.**

With the introduction of the extremely high quality *8000PPA* phono stage last year, Audiolab managed something that few observers believed this relatively staid Huntingdon-based company was could do — it shocked the hi-fi

The Sony *La Scala 1* — one of those rare packaged systems that can compete with similarly priced separates

fraternity. Industry pundits were puzzled why a mainstream company like Audiolab should produce an expensive phono stage for a limited market in the later stages of its life. Something was clearly afoot...

That 'something' was the £1,000 *8000Q* preamplifier. Using Audiolab's own unique and highly stable Zq Technology direct-coupled circuit developed on the *8000PPA*, the six input *8000Q* boasts full microprocessor control and a signal path that is absolutely free of capacitors. The *8000Q* is also the first Audiolab control amplifier not to be fitted with tone knobs, and it even goes without a balance control, although a headphone socket is still extant. In addition to the regular volume pot, there is a further gain control which allows the user to set the volume level to match the system used, or to adjust the volume for late-night listening. As with the *8000PPA*, the control circuitry is inactive whenever music is playing. Finally, the *8000Q* has full remote control with motorised potentiometers, and is built to the usual impeccable Audiolab standards.

Even after only the briefest exposure to the *8000Q*, it's



clear that it is something really special — just like the PPA. The Q has unparalleled levels of clarity and fidelity to the music played. Play a harsh disc and it sounds harsh, play a satiny smooth disc and it sounds satiny smooth. Detail, dynamic range and soundstaging all seem to pass virtually unaffected through the Q's circuitry, but more important is the sheer competence, which simply makes you forget the equipment and concentrate on the music. In many respects, it balances the positive attributes of valve preamps (ease of listening, smoothness, dynamics) with the best of solid state (image focus and detail).

High-enders often suggest that the true test of a hi-fi component is its compatibility; if a component can sound good in any system, you are on a safe high-end bet. If that is the case, Audiolab have a sure-fire winner with the 8000Q. It can add real openness to a huge range of systems, from the prosaic to the profoundly expensive.

Alan Sircom

Cambridge Systems Technology Ltd,
Spitfire Close, Ermine Business Park,
Huntingdon, Cambridgeshire
PE18 6XY. ☎ (01480) 52521



With products like the Kreatura SE and Elixir, Audiomeca is winning itself a reputation for digital excellence

CD TRANSPORT/DAC

Audiomeca Kreatura SE/Elixir

PRICE: £1,300 CDT, £745 DAC

- ▲ Superb CD combo for people who like the sound of valves.
- ▼ Too warm and soft-edged for metal-heads.

Audiomeca is a French turntable company that is currently making a reputation for itself

The 8000Q — the latest in a long line of first class amplifiers from Audiolab

in the digital domain. Its £1,300 Kreatura SE CD transport and £745 Elixir DAC are equipped with methacrylate front panels and stainless steel cabinets. Just like the elegant *Romance* and *J1* turntables, the transport and DAC have a nice luxurious look.

The Kreatura transport sits upon two soft feet and one spike, and uses both lead and epoxy resin to build its weight up to 8kg. Like many of the best players, the Kreatura is based around good old Philips technology. However, like the DAC and the best custom digital audio, this is no blind adherence to application notes.

Take the Elixir, for example; it uses selected components and passive filtering instead of active, the aim being to improve the analogue output. Just as you would expect from a turntable designer of Audiomeca's standard, mechanical and structural integrity is first rate.

To the best of our knowledge, Kronos is the first company to approve the Trichord Clock 2 modification for use with its CD transports. In fact, Kronos offers the Clock 2 package fitted to Audiomeca transports as an optional extra. These SE variants add around £150 to the basic price tag of a *Damnation*, *Kreatura* or *Mephisto*.

As a complete package, the

Kreatura SE/Elixir has a lot going for it. The overall sound is warm and rich, while possessing tightly focused stereo imagery. It also has a cavernous depth to the bass, something which is very much part of the reason why its such great fun to listen to. There is a fair degree of three-dimensionality to the sound. The Kreatura/Elixir combo tends not to favour the likes of Metallica, sounding too warm for its own good. But otherwise this two-box CD player holds a worthwhile quota of life and enthusiasm, without falling into being either too warm or too analytical.

As you might expect, the Kreatura is the superior of the two units, but not by any great margin. In fact, the Elixir DAC comes pretty close to the Best Buy reference at the same price, the Pink Triangle *Ordinal*. Though the *Ordinal* offers superior transparency and detail, the Elixir holds the edge for warmth and sheer elegance. If you love the sound of triodes, this is the perfect digital companion. Only one question remains; why the demonic product names?

Alan Sircom

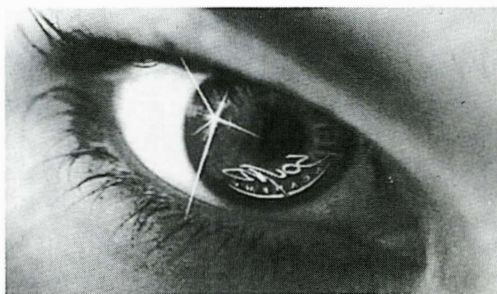
Kronos Distribution, 35 Farlough Road, Newmills, Dungannon, Northern Ireland BT71 4DU.

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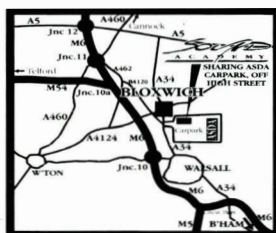
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- ▶ **Full bass, expanded soundstage.**
- ▼ **Some deep resonance at times.**

The Rogers LS3/5A monitors are something of a hi-fi legend.

Based on a BBC design that was first unveiled some twenty years ago, they still excite enthusiasts around the world.

New for 1995 is a pair of add-on ported enclosures to extend the LS3/5A's low-frequency response. The AB1s are as well finished and as solid as the LS3/5As, and can be bi-wired. The LS3/5As sit on top of the AB1s courtesy of four screw-in spikes which, of course, do little for the wood veneer finish but seem to provide rigid enough coupling. The visual effect of the LS3/AB1 combination is one of quiet elegance and is certainly a better match for living room furniture than most monitor stands.

What hits you first, perhaps unsurprisingly, is the presence of deep bass. Less expected is the extra soundstage, which gives a far fuller sound. It's almost as if the bass now has an outlet which frees up the LS3/5As to reproduce that extra detail. For example, *Angie* by the Rolling Stones took on a new presence with the added ported enclosures.

On *Dark Side Of The Moon*, that famous

heartbeat intro resounded through the floor. So did the aftermath of the plane crash as it extends into the clock chimes. This ability to fully extend bass was only occasionally spoilt by a slight resonance on some recordings, but it was always rhythmic and part of the music.

The AB1s are unforgiving of a weak mix or weak vocal performance, and the Stone Roses' Ian Brown suffered on parts of *Second*

Coming. However, the upside is that the resulting powerhouse of guitar, bass and drums is so enjoyable and well defined that you lose yourself in it and just listen. This combination of deep bass and imaging makes the AB1 a very appealing option. Rather nice speakers, these.

Paul Fisher

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Record review

Herbert Howells: *Requiem* (1935); *Take Him, Earth, For Cherishing*

Frank Martin: *Mass* (1922/26)

Vasari, Jeremy Backhouse —

director

United 88033 CD

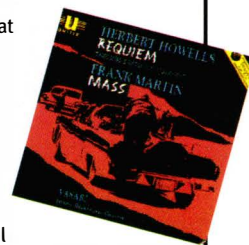
With the interest in surround sound created by the home cinema boom, it's easy to forget that an added sense of height and depth can be produced with normal stereo by using special recording techniques. Sensaura aims to recreate the 3D effect of live music played in a spacious acoustic by capturing the natural cues that suggest height and depth. The system can be heard to full advantage on a new CD released on the United label featuring choral music by Herbert Howells and Frank Martin.

The sound is rich and spacious, with a marvellous sense of breadth and dynamics, and the quiet start of the Howells' *Requiem* is deceptive; the voices soon swell to fill your room. The sound seems to expand as it gets louder, yet does so without a trace of hardness. Compared to conventional close-miked recording, positioning is a tad vague, but the speakers 'disappear' to give a real sense of All Hallows, Gospel Oak, where the recording was made.

Howells' *Requiem* is a beautiful piece; chaste and pure, yet vivid and full-blooded. It is music of great sincerity, completed not long after the death of the composer's son. So personal is this music that Howells withheld it from 1935 until 1980, just three years before his own death. Vasari's performance captures its spiritual depth and its sadness. Also included is Howells' moving motet *Take Him, Earth, For Cherishing*, written after the assassination of President Kennedy.

Frank Martin's profoundly personal *Mass* completes the disc. This was also withheld for some forty years, and finally released in 1963. Martin noted that "This was something between God and me that concerned nobody else."

Jimmy Hughes



Sounds from the Forbidden Planet

Alvin Gold checks his Id before reviewing two monster amps from the Krell Galaxy.

As starter amplifiers go, the £3690 Krell *KSA-50S* looks fairly ambitious. It tips the scales at nearly 24kg, and is capable of producing 50 very conservative Watts into eight Ohms. Offer it a lower-impedance speaker, and this Krell powerhouse happily doubles its output with every halving of impedance — max power is 400 Watts into one Ohm. That's almost enough for space travel.

I had a special reason for wanting to review the *KSA-50S*. It is the grandson of the original *KSA-50*, an amplifier I once owned. The time was the best part of the '80s, and the *KSA-50* was the first US-made amp to attract any real interest in this country. The objection then, sometimes echoed even today, is that it represented of the wrong kind of Americana: overblown, over-engineered, over-priced — and over here.

For me, these criticisms could not have been further from the truth. At the time, I owned what was then the favourite UK audiophile power amplifier of the day (no names, no pack drill). The *KSA-50* was a total revelation. Its freshness and vitality delighted the senses, control and transparency reached new highs, stereo imagery (which opened out the depth as well as the lateral planes) was of a stability and specificity no UK amp could aspire to. The irony was that *KSA-50*'s abilities were turned on their head, described by some as being indicators of its weakness ('stereo depth doesn't exist'). This was a shameful inversion which damaged the reputation of British hi-fi, not just in this country, but in other important markets too.

The original *KSA-50* did have its weaknesses. There was a certain hardness of tone. And the bass, though tremendously authoritative and controlled, lacked the raw physical edge offered by some of the better UK designs. The matching preamplifiers were also disappointing, although the qualities of the DNM preamp (which I used instead) were somehow at odds with those of the power amp. Eventually, the Krell and I parted, but

with more than the usual regrets.

The new models share little with their predecessors, yet in a sense, they share everything. The new *KSA-50S* has similar dimensions, but is convection-cooled with massive external fins where the original used fans. The new amp is massively engineered and superbly finished, as well as being sensibly equipped with balanced (XLR) and unbalanced (phono) inputs, 30 Amp solid brass speaker terminals, and a switchable display. (The latter is to do with Krell's proprietary Plateau Bias pseudo-Class A circuit — but don't ask.)

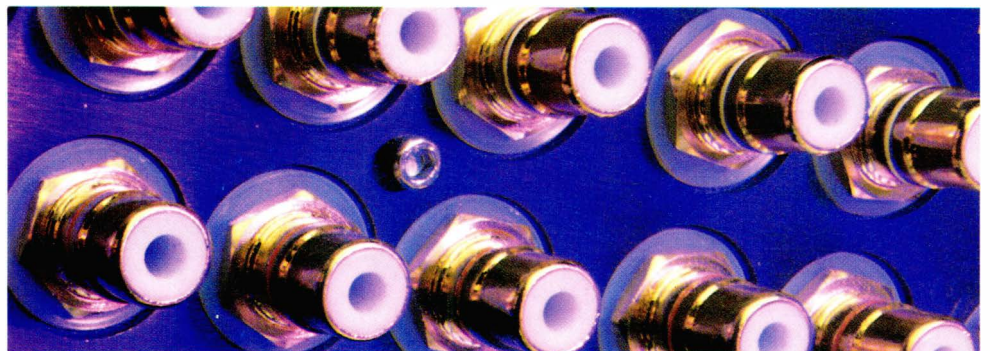
The £4190 *KRC-2* is an active, line-level-only preamplifier (a matching outboard phono stage is available), with four single-ended inputs, a matching tape circuit and two XLR-based balanced inputs. Remote control of pre and power amps is available at extra cost. Volume control is by a multi-turn encoder circuit and a FET ladder network (with a true mute facility), whose gain setting is indicated by a ring of LEDs, or optionally a single LED surrounding the control. Channel balance is adjustable, and absolute phase can be switched.

The key feature, of course, is balanced operation. If you have a suitable source component, this can be continued right through to the power amp: there is no reversion to unbalanced mode inside the preamp. I used the balanced output of a Wadia 23 CD player as the main source, and discovered that in contrast to some well-respected equipment from other sources, balanced mode through the Krells gave a bolder, more dynamic sound, and altogether superior resolution of fine low-level detail.

Don't judge the *KSA-50S* and *KRC-2* straight from the box: they need time

to burn in — a lot of time. I kept both items continuously under power and found that it took a full week before I could get the preamp in particular to loosen up and sound truly transparent.

The consistent sharpness of Krell amplification is a special quality that typical valve-amp freaks will recoil from. And the *KSA-50S* is no exception.





The amplifier gave highly accurate and consistent tonal balances into loudspeakers ranging from Mission and SD Acoustics columns on the one hand, to Martin-Logan *CLSIIz* electrostatics (a punishing load by any standard), on the other. There is no romance in a Krell mediated performance unless it springs from the notes themselves, but there is no longer any aggression or solid state glare either. This consistency and neutrality effectively means that the electronics all but disappear as a factor in the sound equation. Krell doesn't set out to seduce or glamourise the music; these amps simply disappear into the music and allow it to speak for itself.

This far, all is much as I remembered it from the '80s. Apart from the fact that the preamp now matches the quality of the power amp. Indeed, it exceeds it

in the low and mid frequencies. A *KSA-200* I heard briefly with the same preamp was a wonder, and quite out of the *KSA-50S* league in a way that is particular to top-end Krell power amps. In addition, there is a new found sense of purpose in the bass region, which now has more weight and authority. The improvement is a matter of degree: the new amp is ten percent, maybe 20 percent better than before.

However, Krell's combination surprised me by the way it stretches the performance envelope of various components, especially the Martin-Logans. The latter is a speaker I have come to love despite its shortcomings, which include a sometimes plasticky and shallow bass, lack of dynamic range unless the volume is held well in check, and sometimes excessive exuberance in the midband. No amplifier can cure

these inherent limitations in an otherwise exquisitely refined and transparent design, but the Krells went further towards limiting detractions than any other amps I have heard for a very long time. The excellent low level dynamics are retained to significantly high volume levels: bass opens out and the sound as a whole acquires a new sense of discipline and homogeneity.

I can't think of any comparable combination which offers superior overall performance, although some may be better than Krell in particular areas. This, I believe, qualifies the *KSA-50S* and *KRC-2* as state of the art hi-fi components.

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Lucky numbers

Can digital speakers get their signals right? Paul Messenger finds out.

This is just the thing for all you hi-tech trekkies out there: a digital speaker! However, the pedantic might find the use of digital as an adjective a touch hyperbolic. It doesn't count air molecules in and out of a nozzle like a real digital speaker should – this thing has cones and domes which waggle to and fro as on any normal speaker. The only digital bit is the signal input. Which is a trifle awkward since the typical hi-fi amp doesn't have a digital output, but I'll come back to that a little later.

The new Philips product is called *DSS940* and will probably cost around £1000 if the decision is made to put it on sale in the UK. When I rang up one Friday afternoon to check facts, nobody had any real idea when this might be. But the samples that I've had kicking around the past month or three are definitely no prototypes – there's even an eight page colour brochure explaining all about them.

The *940* isn't the first DSS model to come my way. Regular readers may recall a *930* compact floorstander which featured in my July 1993 (*Hi-Fi Choice* no.120) column. Nor is the digital speaker an exclusive Philips initiative. Meridian has been exploring the same field for just as long, and is arguably doing even more interesting things (see issue 140), albeit at much higher prices.

However, Philips has now applied the approach to something more compact and less expensive. The *940* is a gorgeous looking speaker, distinctly hi-tech but with softened lines, thanks to the curved and sloping moulded baffle and neatly integrated port slot, complete with little status LEDs. Even so, £1000 seems expensive for a pair of two-way 8.5 litre speakers until you check out what else is involved here: a whole mess of electronics, including some pretty sophisticated DSP (digital signal processing) technology, plus two power amps in each speaker.

Which brings us on to the Why? question. The glossy brochure claims that the *940* offers "superb sound from small, easily positioned enclosures, plus sophisticated connection and control facilities". Such a statement does

contain its fair share of truth, but is still something of an oversimplification.

My own feeling is that the best reason for this speaker lies in the simplicity of its connection system, as well as its consequent flexibility for multi-room applications. The cable, which feeds the speakers from any (digital) source is only a couple of millimetres in diameter, so it's easy to tuck behind the edge of a carpet. It can also be passed daisy-chain style to three separate loud-speaker pairs in different rooms. You're restricted to one source at a time, but individual remote volume control in each room is standard. So, although this speaker is not the most flexible multi-room option around, it's certainly a simple one.

Besides the little co-axial signal/control cable, each speaker needs to be supplied by mains power, which could prove inconvenient, depending on house wiring. However, active amplification is not without its benefits. Principal among these is the facility to optimise the drive units and port for the electronics deployed. (Siting circuitry in a high vibration environment is a minor drawback.)

The amount of digital signal jiggery-pokery could take pages to explain in detail, but the key advantage is probably the active drive element. Tweeters are often nasty little resonators which are very difficult to drive, especially when the amp is decoupled from the driver by a capacitor (and often other components too), as in conventional passive systems. The active drive sorts out the frequency band electronically (digitally on the *DSS940*), delivering

The Philips DSS940s are capable of startlingly good sound, but you'll need lots of mains plugs to take advantage of their multi-room capabilities

just the high frequencies to the tweeter's power amp. The output transistors of this 20W continuous, 75W peak power device then direct-drive the voice coil of the 25mm moulded polyester dome tweeter.

The *DSS940*, like most of the other active systems I've heard so far, sounds unusually sweet and coherent at the top end. Its output is delicate, subtle and exceptionally detailed.

I'm less convinced about the bass end of things, but have to admit the *DSS940* can probably beat any similar size £1000 passive speaker in most respects. Loudness and headroom are very impressive – indeed, the wide dynamic range is my second favourite sonic feature.

However, in-room measurements showed that the bottom end only extends down to 50Hz. This is due to a clever, if slightly disconcerting trick. The bass extension is improved as the level is reduced, which explains why the *940* sounds larger when playing quietly than when working hard.

My main quibble with the brochure is its pictures of the speaker in a bookshelf. The bass alignment clearly favours free space sitting, with (surprisingly) no option to change the characteristic digitally. I also find it hard to accept its claims for ideal crossover behaviour. To my ears, the speaker sounds presence-dulled, and my measurements (in-room, far field) indicate a ~5dB dip centred on 3kHz. The compensator makes little difference to the energy response here, but it does subjectively improve mid-band focus.

A more serious limitation arises from the digital nature of the *940*s. I got the best sound when driving them directly from a Linn *Karik* CD transport. But in order to use conventional analogue sources like vinyl disc, radio or TV sound, it's necessary to use a digital preamplifier with built-in analogue-to-digital converter. A Philips *DSC950* costing a further £400 sounds a little bland, while the rather better sounding Meridian *562* costs £895 without operating some of the control facilities.

Despite the criticisms, the Philips *DSS940* is a good loudspeaker. It demonstrates how the digital speaker concept is gradually becoming more refined, while promising plenty of future potential. However, while UK customers might consider the £1000 *DSS940* an interesting prospect for the main lounge, I feel Philips will have to come up with something altogether more affordable for secondary rooms to get the multi-room dimension off the ground.



HELP!

James Michael Hughes is our life buoy in the hi-fi maelstrom

Query of the month

Each month we're giving away a one metre pair of Precious Metal Silver Signal 75 interconnects to the writer of the most interesting letter. If you've any system queries send them to the snail mail or e-mail addresses given on pages 2-3. Address queries to the Help! Dept.



A cable for our lucky winner



NAD's 306 amplifier can take the slight bass shyness out of ES-11 speakers

Upgrade dilemma

Q I own a system which comprises a Pioneer PD-S801 CD player, a NAD 3225 amplifier, and Epos ES-11 speakers. I want to change the amp, and I am considering whether to buy the Audio Innovations Alto, the NAD 304 or 306, Naim Nait 3, or the Technics SU-A900/11. All are available locally, but from different stores, so I can't compare. Which would be best?

A Centeno, Saudi Arabia

A The NAD 306 is a good all-rounder, and its switched Bass Eq facility could help the ES-11's slight bass shyness. It's quite powerful too, and in this respect, the Nait and Alto may prove slightly under-powered, although the Alto gives a very sweet beguiling sound.

Low budget improvement

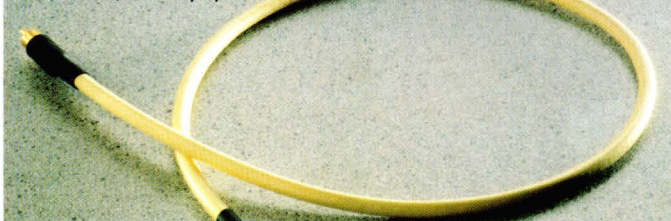
Q I'm slowly upgrading via the secondhand market (cos we're broke), and I recently

acquired a Kenwood CD transport DPX9010 and Meridian 203 DAC. The sound is excellent, but I wonder whether the coaxial digital interconnect (labelled Drivewire) is as good as it can be. I'm also curious as to why the eq light on the DAC never seems to illuminate.

Alan Leslie, Avon

A QED's Digiflex cable might be a good starting point, especially if you want to keep costs down. However, to which degree it will improve on your existing cable is hard to judge at a distance. You can also try DNM's Reson spaced-conductor single strand solid core. Although primarily intended as an audio interconnect, it works remarkably well as a digital cable, providing a slightly crisper and more open sound than many co-ax cables. The eq light on your Meridian DAC will only illuminate when a pre-emphasised CD is played. You clearly have no CDs mastered with pre-emphasis — yet!

A QED Digiflex cable could bring more out of Alan Leslie's CD/DAC equipment



On the road to insanity



Can Marantz's CD-63SE do the trick for J Alexander?

Q Where do I start? There are so many separates on the market, that as a first-time buyer, I am utterly confused! For the past four months, I have been attempting to draw up a shortlist of components for a CD based system. I am willing to spend up to £1,500 for a system that provides a very open and transparent sound, a soundstage of depth and three-dimensional detail, plus clear treble and midband. Energy and drive are also required. In addition, I want deep and powerful bass with excellent definition. The system should be able to cope with classical music, plus soul and jazz — both complex and simple arrangements. Am I asking the impossible?

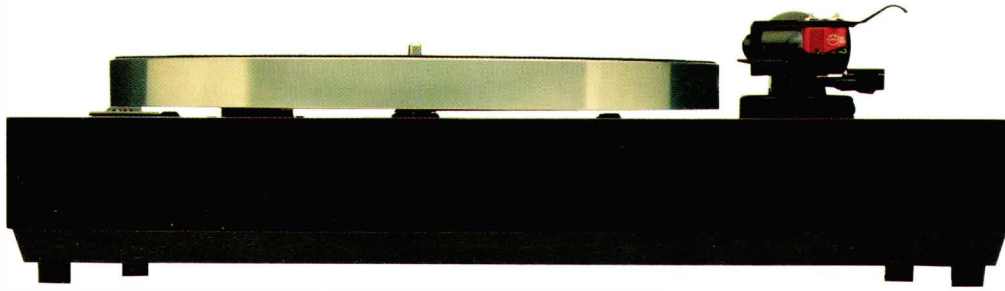
So far, my proposed system consists of a Technics SU-A900/11, a Marantz CD-63SE CD player and Mission 753 speakers,

but I've also looked at the Audiolab 8000A and Arcam's Delta 290 amps, as well as the Sony CDP-715E CD player. Will any of the above provide me with what I'm looking for?

J Alexander, SE London

A Your projected system looks very promising on paper, but there's always an element of luck involved in getting great sound. Of course it helps to choose good components which work well together, but sometimes you'll hear great sound from quite unlikely combinations — and rotten sound from a collection of 'Best Buys'! So, before you drive yourself insane, why not find a nice friendly dealer who will demonstrate several different sets of equipment. That will help you in gaining an idea of how things sound. Your requirements are pretty stringent, but with careful selection and a sympathetic room, you should achieve good sound.

A warm welcome for D Fulford's old vinyl, offered by Linn's LP-12



Warmth for my old vinyl

C I recently purchased an Audiolab 8000C/8000P pre/power combination and a pair of Mission 753s. I still have my old Thorens TD-280 with A&R C-77 cartridge, plus a Denon DCD-1290 CD player. The turntable has never sounded that good to me, and I obviously need to upgrade it soon. Can you recommend a turntable, arm and cartridge combination that sounds reasonably detailed but warm and lively? My LPs are quite old, and I don't want a sound which is too sharp and analytical.

D Fulford, via fax

A The Linn LP-12 has a fairly rich and warm kind of tonal balance, although later examples with the Lingo power supply and other updates sound less euphonic. A new Linn LP-12/Basik/Akito costs just under £1,000, and would perhaps be closest to what you're looking for. You could also consider the secondhand market; many users are dispensing with vinyl and expensive upmarket turntables do not hold their prices. There are some amazing turntable bargains to be had at the moment. Just keep in mind that buying used gear is always a bit of a risk.

Out of breath

C I have a PS Audio Lambda CD drive (with AT&T connectors), a Reference Link preamp/DAC, a Copland CTA 501 power amp, and a pair of Sonus Faber Minima Amator loudspeakers on Foundation designer stands. My listening room is only 4.5m x 4.5m, but I still feel the amps run out of breath during louder passages. Should I change to something like a Krell KSA-50S?

Henry Mok, Hong Kong

A Sonus Faber speakers are pretty hard to drive, and it could well be that your 30W output Copland amp isn't quite up to the job. Changing to a Krell KSA-50S should provide the driving ability and power you need, despite the fact that it is only slightly more powerful on paper. It should be possible to use the PS Audio's balanced outputs, as the Krell offers balanced inputs, and the result will be an extra 6dB gain, as well as improved sound quality.

Better than perfect

C My system consists of a Philips CD-850 CD player, Musical Fidelity B-1 amplifier and bi-wired B&W DM-630 speakers, as well as a Nakamichi DR-2 cassette deck and Hitachi



A REL Stentor subwoofer can add some of that 3D depth to J Hamer's system

FT-5500 tuner. I've listened to the Deltec Little Bit and QED Digit DACs, plus Pioneer A-400X and Audiolab 8000A amplifiers at home, but do not feel that any one component gives the improvement I'm looking for. With a budget of £500, how can I best improve my system?

C J Pantling, Sussex

A It could be that your system is so well-balanced and suited to the room in which it's used, that changes like an add-on DAC or a better amplifier only provide marginal improvements. You could upgrade the CD player with Trichord's Clock 2, which would not change the system's tonality, but should improve analysis and detail, plus cleaner treble and greater dynamics. Unfortunately, you won't be able to audition Clock 2 before purchase, and fitting it to your player will invalidate your warranty. Alternatively, try Arcam's Alpha 5 Plus CD player.

Wanted: 3D experience

C My system consists of a Philips CD transport (Trichord Clock 2 modified) with Pink Triangle da Capo DAC, a Russ Andrews modified Pioneer A-400 amp, and Epos ES-11 speakers on dedicated stands bi-wired with Chord Flatline cable.

I don't think the amp and speakers are doing justice to the DAC, but which would you suggest replacing first? I eventually hope to experience a 'walk into' 3D soundstage. At the moment, height and depth are very poor. Budget is £2,000 now, with a further £2,000 available at the end of the summer.

J Hamer, Isle of Man

A You're right to suspect that amp and speakers limit your system's ultimate potential. However, it may be possible to get the sort of sound you're after simply by adding a good subwoofer, like Rel's Stentor. Many systems lack depth because a sharp tactile treble is not balanced by an equally full, rich bass. Reproducing the lowest frequencies will help create the '3D' holographic effect you seek, as well as making your system sound subjectively bigger and more powerful, with greater dynamics and increased spaciousness. Hear your existing set-up with a Stentor before deciding that your amp and speakers are definitely inadequate.

Alternative cabling

C Despite the claimed advantages of bi-wiring loudspeakers, I have yet to be convinced that it produces a



It takes strength to drive a pair of Sonus Faber Minima Amators



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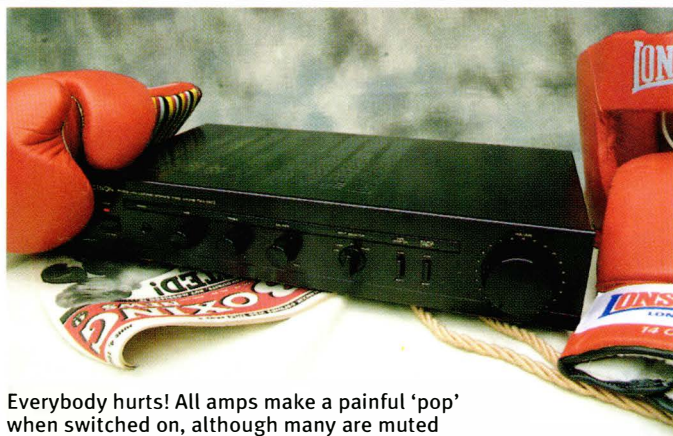
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Everybody hurts! All amps make a painful 'pop' when switched on, although many are muted

significant improvement in sound quality. However, if you remove the crossovers from each speaker, put them close to the amplifier and run individual lengths of cable to each drive unit, the improvement is unimaginable! Why isn't this done more often?

D Edwards, N Devon

A The wiring method you describe has many advantages; the physical removal of all crossover components from the vibrating speaker cabinet greatly reduces microphony effects, and it eliminates unpredictable influences from the drive unit's magnetic fields. Roksan employed a separate crossover box for their Darius speaker, but there are some drawbacks. One is cost — more plugs and sockets are needed, and the manufacturer has to provide a nicely finished case for the crossover. Another potential hazard is damaged tweeters, should bass and treble wires be transposed!

Another hi-fi choice

Q I have two HFC Best Buy components in my current system — namely a Sony CDP-715ECD player and a pair of Mordaunt-Short MS-20 speakers. I now wish to upgrade my old Creek 4140 amplifier. What would you recommend with a budget of £300 to £450?

M Miller, Aberdeen

A The Creek is a nice, smooth warm-sounding amplifier, and it's likely you will get a sharper,

brighter, and more articulate sound by replacing it. The latest Audiolab 8000A is very good, as is the Technics SU-900/II. If CD is your only source (no need for a phono input) and you don't mind an amp without tone controls, listen to Orelle's SA-100, which sounds very full and rich.

A machine that goes 'pop'

Q I have a Denon PMA-250/111 amplifier driving Mission 760iSE speakers. Every time I switch the amp on, it makes a 'pop' through the speakers, even if the volume is turned down to zero. Is this anything to worry about?

P Mackinnon, West Yorks

A Nearly all amplifiers make some noise when switched on, due to surges of current. However, most amps have a relay that mutes the output for a few seconds when first powered up, so that this sound is not audible. Unless the pop on your amp is very loud and causes the speaker cones to move visibly, there should be nothing to worry about.

Upgrade for sore ears

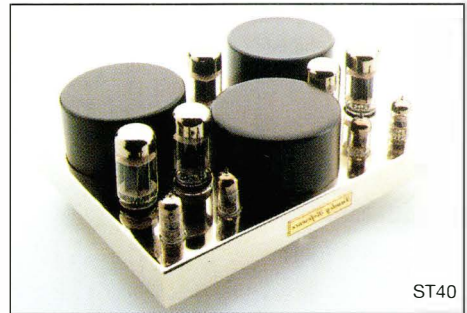
Q My present system includes an Arcam Alpha 5 CD player, and I was thinking of upgrading it by going for Arcam's 'Plus' option, or Clock 2 from Trichord. My amplifier is a Musical Fidelity preamp with bridged Typhoon power amps driving Monitor Audio MA-14/II's.

This combination lacks warmth, and after a while, it can sound tiring and rather bright.

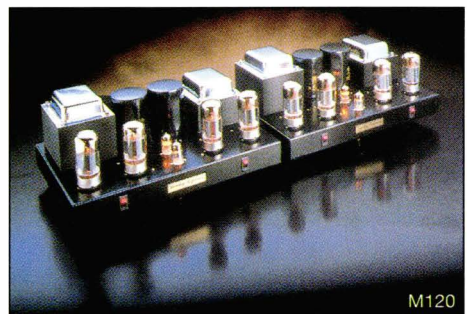


M Miller wants to replace his Creek's 4140 amp for a sharper sound

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M120



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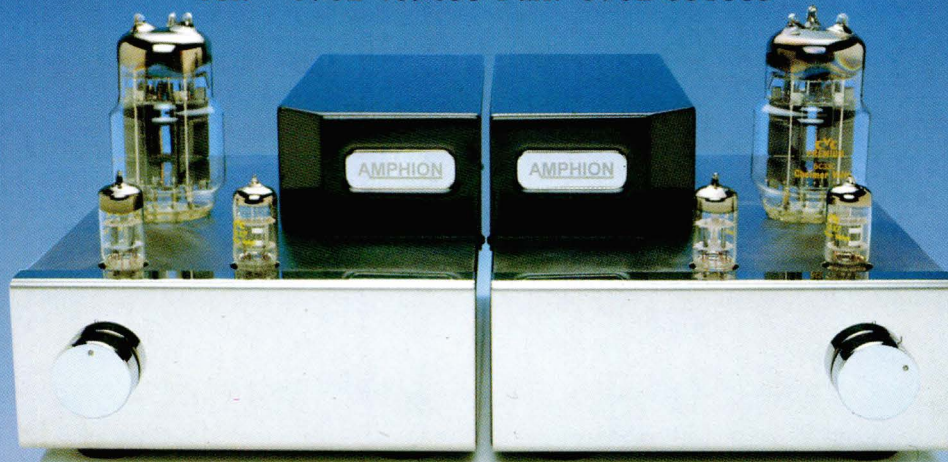
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SD Acoustics SD-3 — more bite than *Interview With The Vampire*

Will any of my proposed CD player upgrades cure this?

M Harman, Twickenham

A Modding your CD player will improve clarity and sharpness, which makes the sound crisper and cleaner, but not richer or warmer. Because the treble will be cleaner and purer, the result should be more listenable. But you may also find an increase in brilliance and attack, which only highlights the things that currently annoy you. Ultimately, you may need to look at a different amp and/or pair of speakers to get a warmer sound.

Amplifier agony

Q I am currently using a Marantz CD-53 CD player (modified with Trichord Clock 2), an Audio Alchemy DAC-in-the-Box, an Arcam Alpha 5 amp, and Mission 780SE speakers on sand filled stands. Clock 2 made an amazing difference, but I feel both player and speakers would benefit from a better amp. I need loads of tight accurate bass, open detailed midrange and treble, plus pinpoint soundstaging for driving rock/grunge. With £500 to spend, what should I consider?

S Lester, Staffordshire

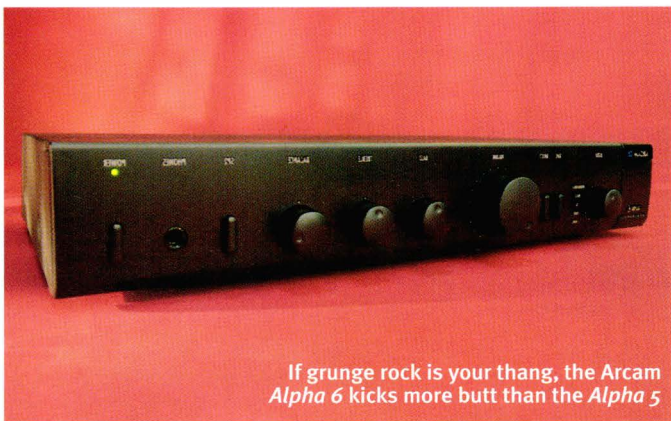
A What a pity you didn't go for the Arcam Alpha 6, rather than the Alpha 5. The 6 gives a sharper, tighter, and more dynamic sound than the 5, and will be closer to what you're after. If you find a dealer willing to give you a decent part exchange, it might be worth going to an Alpha 6. Otherwise, try the Arcam Delta 290, and Kinshaw's Overture integrated. The Audiolab 8000A is also worth listening to, but it may prove a trifle polite for hard rock and grunge.

Arcam or what?

Q I'm building a hi-fi system from scratch, and after reading your latest reviews, I have decided to buy a Sony CDP-715ECD player and a Rotel RA-930BX amplifier. However, I need some advice on speakers. With about £400 to spend, I was thinking of Arcam Delta 2s. Could I do better?

S Moise, via the Internet

A The Arcams give a very full and warm sound, and produce surprisingly deep bass for their size. Try listening to the Rogers LS2a/2 (also quite warm), or the SD Acoustics SD-3 if something with more bite is wanted. Mission 733s are good buys, as are Epos ES-11s.



If grunge rock is your thang, the Arcam Alpha 6 kicks more butt than the Alpha 5

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What's In A Review?

I read your journal as well as another leading hi-fi magazine, and I can't help noticing the conflict in comments and views between the two titles. This must surely cause confusion to readers who are looking to buy new gear or upgrade their existing systems.

I believe it is often a matter of one review shedding a different light on a product. In my opinion, the key point when buying hi-fi is to be as critical as possible. The excellence of a product may be obvious, but the flaws may take more finding (or listening). I find that when two

reviews clash, one is simply highlighting the flaws. In 'real-world' price brackets, there will always be flaws, even if they are only small ones. The function of reviewers is to provide constructive criticism — that is all too often avoided.

Steve Lester, Burton-On-Trent

Clock A Doodle-Do

Some time after going to the expense of having my Philips CD-850 re-clocked, it started to skip. Repair costs were quoted at £170 for a new transport, so I declined the offer and started to audition new CD players. After several varied and very

Letter of the month

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

So get scribbling and send in your views on anything to do with hi-fi or music to: The Editor, Hi-Fi Choice, 19 Bolsover Street, London W1P 7HJ, or send a fax on 071-323 3547.



Same as it ever was

Your editorial 'New Wine In Old Bottles' (HFC 140) has caused me to reminisce. I go back to the dawn of hi-fi civilisation. From 1954, I was part of the team at what was then the Mullard Radio Valve Co. Ltd. We designed a range of amplifiers, preamplifiers and tape equalisers which led the world at that time.

The debate ranged between Triodes, Beam Tetrodes and Pentodes; between Distributed and Ultra Linear operation. How shocked we were when the Yanks got 50 Watts out of tubes when we could only get 30. Speakers were bass-reflex, stereo didn't exist, the best records were Decca FFRR and pick-ups were moving-coil, moving iron, and so on. But the most wonderful thing was that everyone argued about the sound. The first transistor amps were introduced around 1957 and delivered a massive 200mW. Wonderful days!

I changed to industrial electronics in 1960 and didn't think about hi-fi again until

1972, when I set up my present firm and started importing speakers to make money. (For a few years, we had one of the most popular bookshelf speakers — the Videotone *Minimax II*.) Re-emerging into the hi-fi world, I found the same debate about sound quality still raging. How clean was the sound, how good the sound-stage, what made things sound better or worse — and that valve amplifiers were making a comeback.

In 1995, I find the old debate still raging, and I'm starting to spend my money again. My friend has just demonstrated Dolby Surround and here I go again. The sound quality achieved now is stunning in comparison to all those years ago; but then, as now, the quality of the recording dominates. How can the record industry still produce so few really excellent records?

And now, even though my ears cannot possibly hear above 10kHz, I know thicker cables will help...

Cliff Hardcastle, Bromley

enjoyable auditions, I acquired a Marantz CD-63SE. I thought that the re-clocked Philips was good, but it doesn't come close to the Marantz — a remarkable machine in every respect, and worth the extra cost over the CD-63 (also better than the Philips!).

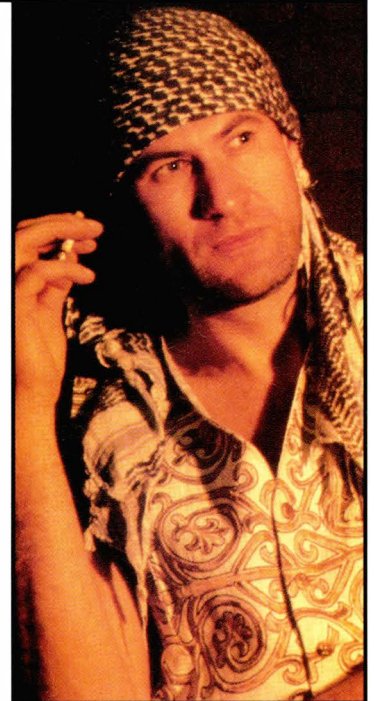
T L Barber, Huntingdon

The Editor adds: *We are planning an in-depth investigation of the 'Trichord Clock Phenomenon' in a forthcoming issue. In the meantime, you should be aware that fitting of the Clock 2 modification will probably void any warranties that still apply to your CD player.*

Fish, Or Chips?

There is a problem with the less-expensive CD players you are reviewing: the constant flow of new models that sometimes get worse. The magazines seem to disagree too much about the sound quality of these players, which makes me wonder a lot about product variability. Of course, one magazine often reviews an A70742XD while another does the 'vastly different' A70742XE with the extra switch. Whichever one we choose, it will in any case be rubbished by a new, even more passionate review of the A70742XF next month. The poor beginner probably decides that tropical fish might have been a safer hobby after all!

Edward Courtney, Gloucester



Sub-tropical Fish — a better hobby for the confused?

The Editor replies: *You're right that 'new' does not necessarily mean 'better'. Magazines disagree about hi-fi products because sound quality is so hard to quantify; I would like to believe this journal gives the most objective view of sound-quality's subjectivity — trust our reviews accordingly. Finally, readers should not worry when their systems have been superseded. Obsolescence is inevitable, and you have to buy eventually. Find equipment you like, then settle down to enjoy your music — and watch the fish...*

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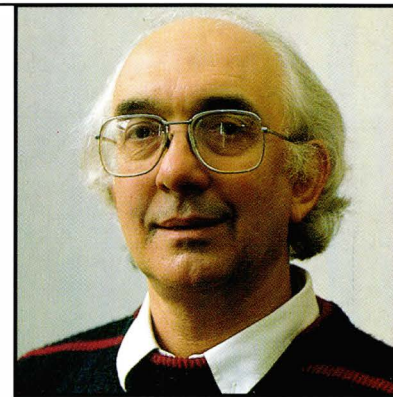
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21st Century Fox

Barry Fox reports from Las Vegas on the good, the bad and the downright crazy ideas that will shape the future of the home electronics industry.



So what caught my eye at this year's Winter Consumer Electronics Show in Vegas? Some positively cringe-making Keynote Speeches, for one thing.

Joe Clayton, Head of Thomson and RCA in the US, told how the launch of DSS, the direct-to-home digital satellite system, had been a roaring success. "Digital destiny," he explained, "is now an important part of the American dream". As much as anything else, Americans hate their cable companies, who deliver terrible pictures and sound, and then charge a high price for rotten service.

Reed Hundt, Chairman of the Federal Communications Commission which controls American broadcasting, said that as an ex-Yale lawyer he "did not know one darn thing about digital TV". But after 20 years of courtroom experience, he "was happy to talk about it anyway". He too sees digital technology as part of the American Dream.

Next stop was an audio-visual spectacular staged by Intel, famous for the Pentium chip. The company somehow managed to omit any reference to the problems the Pentium has when asked to add up long numbers. Best spin-off so far is an update of Space Odyssey. Re-titled 2000.9998, *The Pentium Odyssey* has Hal-the-computer inside a spacecraft labelled "Insel Intide". Hal has a full 31.9 bit operating system, but remembers when he was powered by an old-fashioned 485.98. Threatened by shut-down, with only seven chances in five of surviving and a sale price of \$1988.8942, he threatens to kill the other 3.792 crew members.

Sony's audio-visual spectacular was another Digital Dream, just down the corridor from Intel's. But Sony played a really clever trick. Every visitor was loaned a MiniDisc player and a disc with a recorded commentary on the exhibits. Visitors only had to skip to the next

track when moving from one exhibit to the next. So, everyone visiting the exhibit got some hands-on brainwash experience of the latest MD player, without even thinking about it.

Philips concentrated on CD-i—there was no audio and no DCC. There was no sign of DCC on the Technics/Panasonic stand, either. "But that doesn't mean that we may not still be selling it," said Panasonic's PR man, Bill Pritchard.

The computer section of the show gave an interesting clue to the next step into the Digital Dream. PC users are always looking at new ways of backing up their data. Tape is painfully slow, and often unreliable. Magneto-optical discs are still expensive. Most people are waiting until the low cost of Mini Disc is spun off into the computer world. And this, incidentally, may well kick-start the rediscovery of MD for audio. PC users will suddenly realise that their disc drive can record and play an hour of music as well as data.

Several computer companies are now selling CD-ROM writers with software that lets a PC write CD audio. The Smart And Friendly CD-recorder costs \$1500. It dubs at twice the normal speed and comes with Corel software to design and print jewel-box artwork. Smart And Friendly also sells a Video CD version. For under \$5000, it transfers VHS video to digital video disc.

Whether the music and movie industries like it or not, recordable CD

is getting into the hi-fi world via the back-door computer route.

Do you suffer from too many remote controls, with the one you want always down the back of the sofa? A new multi-remote could be the remedy. No attempt is made to pre-program One Call's memory at the factory. Instead, it is empty and ready to receive whatever code the user's equipment needs. To load the code, the user phones a service line and tells the operator what equipment is to be controlled. The operator then types the model number into a database, triggering a code stream that travels down the phone line as a warble tone, like fax data.

The makers have previously tried building a microphone into the remote so that it couples acoustically with the earpiece. But this proved expensive and unreliable. The new system works like a transformer. As audio signals run through the coils in the handset's ear piece, they generate a weak electromagnetic field which leaks into the space around the handset. If the remote is within 10cm of the handset, the field will be picked up by a coil within the remote. It then decodes and memorises the incoming data stream. The loading process takes around ten seconds.

And if the makers update their database with the codes needed for new equipment, owners can just phone up for a new download when they replace old equipment. Availability over here? Around £25 each in time for Christmas.

Back to Panasonic's stand, for the weirdest, daftest, most puzzling gadget of all. The RQ-V197 portable cassette player can be switched to a mode in which the headphones vibrate to distort the music. A tiny coil and spring shakes the unit like an off-balance washing machine. I pondered long and hard over why you might want to do this. Panasonic's demonstrator seemed unsure at first, but then thought that it might be useful for anyone wanting to simulate the effect of standing too close to the speaker stacks at a rock concert.

"You are too old to like them," she quickly suggested.

Well, that's a relief.

Hey, who needs binaural when you can have Panasonic's vibrating headphones instead?





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“Is that a digital personal pocket, or are you just pleased to see me?”



Alvin Gold finds out which is more arousing: mini MiniDisc machines or a dinky DCC

High quality home recording systems have had their ups and downs, though the emphasis has been very firmly on the downs.

Sony's Elcassette, the thinking man's cassette, fell at the first fence. DAT seemed a promising contender when it arrived in 1987, but its price and the lack of prerecorded software banished it to the lofty realms of pro audio. You've probably forgotten all about the digital system using Betamax cassettes, which preceded DAT — I know that I have. And, of course, the one-time king of the recorders, open reel, was the first to be laid waste by compact cassette, the medium that everyone still keeps trying to improve on.

A cocktail of competing standards, complexity, expense and obscurity have conspired to keep high-quality recording an arcane affair. Yet in the handful of years they have existed, MiniDisc and Digital Compact Cassette have held out the promise of CD-quality sound — at budget prices.

With DCC, Philips' brainwaves was to resurrect the S-DAT technology (fast moving tape and a stationary multi-track head) that it had played with

some years earlier, slowing the tape to a workable speed, and incorporating a revolutionary new idea: data reduction. This brought signal

storage requirements down to a level compatible with the S-DAT technology and a conventionally sized cassette. In a neat application of psychoacoustics, data reduction was designed to throw away only the musical data that the brain would ignore anyway.

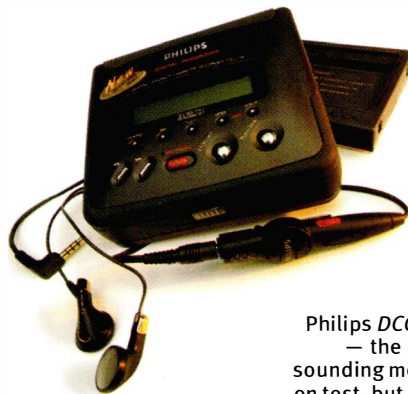
DCC was designed to be compatible with analogue compact cassette in the sense that cassettes can be played,

to be insupportable — practical DCC hardware has had to be made much more precisely and expensively than was originally intended. The second speed-bump was Sony, which quite unexpectedly pulled a rabbit from the hat in the shape of MiniDisc.

MiniDisc (MD) took the same basic data reduction idea as DCC and applied it to CD technology. This spawned a five-inch, 74-minute disc at the shrunken diameter of 2.5 inches. For longevity and ease of handling, the disc is housed in a sealed caddy. A sophisticated application of magneto-optical technology resulted in a recordable/erasable version of the disc which could be read by laser, and rerecorded at will.

Being disc based, MiniDisc track access is practically instantaneous; DCC has all the irritations of cassette except that it is always auto-reverse. By common consent MiniDisc is the sexier package, being intrinsically smaller, lighter, faster to respond and more transparent in control logic than DCC. In addition, the discs are a fraction the size of DCC cassettes. However, for reasons that have never been properly explained, Sony chose to package the discs in library cases that are actually bulkier than cassette boxes.

However, the playing field is not as uneven as it may at first appear. It is not widely understood that Philips, being first in the ring, was able to ring-fence



Philips DCC170 — the best sounding model on test, but also the bulkiest and heaviest

though not recorded, on any DCC machine. And it was supposed to be built up from a handful of high-tech chips and a tape mechanism that could be replicated cheaply by existing low-tech production plants. The tapes would be similarly low tech, using cheap video stock and duplicating equipment almost indistinguishable from that which makes cassettes.

Two obstacles upset the applecart. The first was that Philips' ambitions for simplicity of manufacture turned out

The Specimens	
PHILIPS DCC170	£250
SHARP MD-M11	£450
SONY MZ-R2	£450

its PASC data reduction technology with patents, making it very difficult for Sony to equal the sound quality of DCC with its ATRAC system. And DCC's backwards compatibility, the ability to continue using ordinary cassettes, must also be in its favour.

On paper, the two systems seem to have just about everything going for them, especially for quality music on the move. But until recently, the one thing lacking has been well designed and practical equipment.

Now read on...

FEATURES

Philips DCC 170	★★★★★
Sharp MD-M11	★★★★★
Sony MZ-R2	★★★★★

After the false start a couple of years ago, when just a handful of DCC and MD hardware was available, the last few months have seen a veritable avalanche of highly capable personal stereo recorders that deserve to be taken seriously.

There are plenty of detail differences between the three models on test, but many of the basics are shared. All three, for example, are capable of recording as well as playing back. (This is not a trivial comment: both formats have spawned non-recording players.) All three units can record from analogue and digital sources, using optical or electrical inputs in each case.

Record levels are fixed when recording digitally, because recording in the digital domain amounts to nothing more than copying a stream of bits. However, digital copies of digital copies are prohibited by the obligatory Serial Copy Management System, the anti-piracy measure foisted on digital recorders by music business fatcats. Analogue recording is always possible, of course, but inevitably involves some loss of sound quality. All three of these machines access tracks directly by number and can display track titles, but uniquely in this group, only the Sharp can record its own track titles.

The Sony and Sharp both have a red-hot new feature that genuinely contributes to intuitive operation. This is a 'resume' device, which means that when you press play, the music will start where it last stopped, as long as the unit hasn't been opened.

All three models can be operated from the mains or from rechargeable batteries, but there are some important differences. The MiniDisc models are supplied with Lithium Ion batteries that can be recharged at any time, and supplemented or replaced by standard alkaline batteries housed in external

bolt-on holders. The Philips slums it with a heavier and bulkier NiCad. This must be run flat before recharging if service life is to be prolonged (due to the so-called 'memory' effect).

One important limitation of the two MD portables is that they can't convert sampling rates. Thus, they won't dub digitally from a 48 or 32kHz DAT or (in the future) DBS broadcast. Both devices run at CD's 44.1kHz, and that frequency can therefore be recorded subject to SCMS giving the go-ahead. The Philips DCC player, however, can record from 32, 44.1 and 48kHz sources, switching automatically as required.

Another intriguing difference is in these units' handling of mechanical disturbances; the DCC copes with just about anything short of an England football international. As a breed, disc recorders and players are inherently less happy about being jostled as they are played, but in the MD system, a ten-second solid-state memory allows the music to continue while the laser picks up the tune where it left off. This reserve isn't available when recording, however, and both MD players need to be held still or left on a solid surface when recording. This is especially important at the end of the recording, when the TOC (Table of Contents) track is updated. Any disturbance at this point, and the whole recording is lost. Let's hope that future MD decks buffer the TOC write process to guard against this potentially troublesome situation.

Finally, we should note that the Philips is among a new generation of players just being phased in, which incorporate 18-bit resolution A/D and D/A converters; the PASC core of DCC is already claimed to give better than 18 bit resolution. And don't forget that the Philips plays back all types of analogue cassette, from ferric to metal, with or without Dolby B noise reduction.

Other relevant points are listed in the table at the end of this feature. Note the close similarity between the two MiniDisc units in size, battery life and other vital statistics. Note also the chunkier proportions of the Philips DCC, which is about 50 percent larger than the others if both weight and bulk are factored into the equation.

There is an entertaining aside to the features count. Although the Philips is capable of recording from optical or electrical inputs, the optical input cannot be used for recording when the unit runs with the rechargeable battery. This is an obscure limitation for which there is no obvious explanation. The prize for the oddest and most obscure feature, however, must go to Sony's MZ-R2, which can add time and

date stamps to recordings. The maker notes in the instructions that the clock 'normally loses about 2 minutes a month'. The mind boggles as one's belief in quartz crystals buckles...

SOUND QUALITY

Philips DCC 170	★★★★★
Sharp MD-M11	★★★★★
Sony MZ-R2	★★★★★

When listening to recordings being made on the two MiniDisc machines, I could not be sure whether the headphone output was reproducing the data-reduced signal being stored on

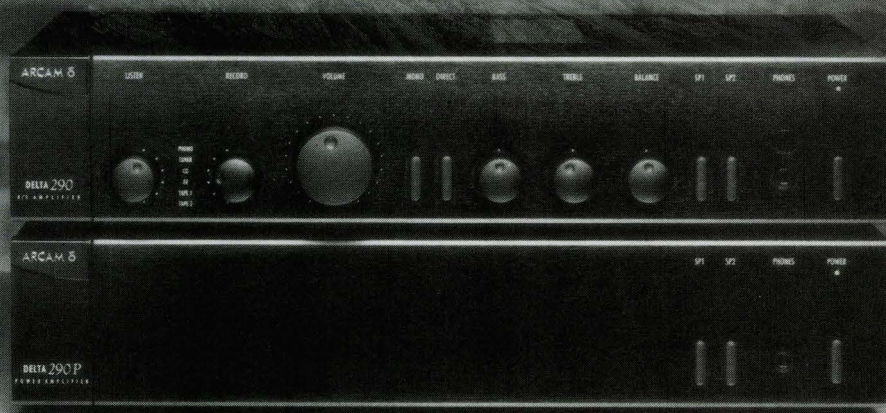


Sharp MD-M11 — the smallest model in this test was let down by poor headphones

disc, or just a facsimile of the full-resolution signal entering the input jacks. If the former applied, we can conclude that much of the loss in sound quality identified on test was attributable to ATRAC. If not, then the analogue monitoring chain lacked transparency to an extent that effectively swamped losses due to data reduction. Spatial and dynamic cues were suppressed selectively during the more dynamic, spiky moments, though smoother, simpler sounds were less affected. Both of these features have been previously identified as characteristics of ATRAC, so my guess is that the monitor signal is the data-reduced version.

The two MD portables didn't like powerful female voices in their upper registers (eg Whitney Houston dubbed digitally from a CD source) and they certainly didn't like solo piano (Uchida/Debussy), which sounded wooden and unsubtle. But the pair smooched along happily with sustained string passages, and on much of the slinkier material from the *Sleepless In Seattle* soundtrack; artists like Harry Connick and Nat King Cole. Cymbals sounded dull and smeared, and had an oddly distant quality that was also noticed with upper strings — which sounded homogenised and lacking in separation.

close your eyes and see



the Arcam Delta 290 amplifier and the new Delta 290P power amplifier

Close your eyes and see how a 75 watts per channel amplifier with "real clout" can, at the same time, be "subtle and intriguing." For this is how Audiophile magazine regards Arcam's Delta 290 amplifier. Discover why the 290 is one of "Britain's Top Ten Best selling amplifiers" with a "weighty, well-judged, detailed sound," (in What Hi-Fi's? view). Prove to yourself that "amplifiers of this calibre are certainly uncommon," as Hi-Fi Choice sees it. Finally, realise why Corey Greenberg of Stereophile magazine gushes "In the truest testimony to its easy superiority, the Arcam was the one I chose to listen to when I just wanted to listen to my fave recordings at night before I laid me down to sleep. To me, that sez it all." (Now that's *really* closing your eyes and seeing...)-Stereophile, July, 1994, Vol.17, No.7.

Next, witness the latest addition to the Arcam family, the Delta 290 power amplifier. Capable of operating in both stereo and dual-mono

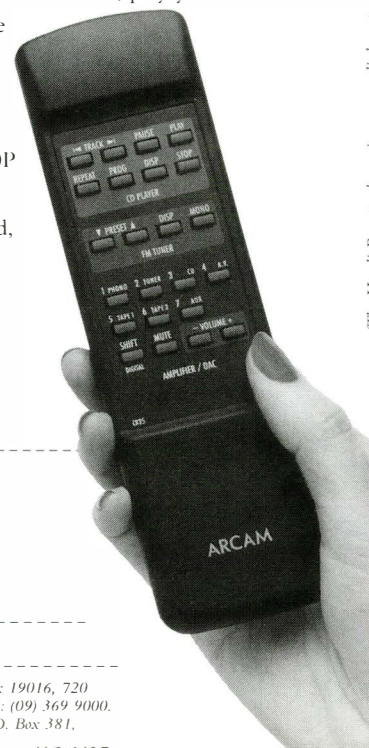
modes (for bi-amping), the 290P gives any hi-fi or audio video system a whole new outlook, outperforming other power amplifiers costing twice as much.

Finally, put the 290 and 290P together, along with a pair of bi-wireable loudspeakers. Leave the 290 connected to the speakers' treble drivers and connect the 290P to the bass units. Now, play your favourite music; though you might have heard the epithet "working in perfect harmony" before...now you'll understand it.

Just listen. Simply sample the experience that is the Delta 290 and 290P amplifiers.

Just close your eyes, open your mind, and see the light.

ARCAM



For more information on the Delta 290 and 290P or other Arcam products, complete the coupon and post it to:
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Tosay that stereo sounded like mono would be putting it too strongly, but three-dimensionality was lacking in richly reverberant MD recordings: this appreciably diminished the sense of presence. The originals were inevitably more interesting, livelier and more vital. Almost as a matter of definition, this sounds like the ideal qualification for background listening, with high-octane material de-energised for comfort and convenience when your mind is focused on something more important. It seems that MD is at its weakest with music that is particularly dependent on musical leading edges. With programme material like this, the pool of bits available for encoding the ragged musical edges is under the greatest pressure.

Beyond these general observations, there were detail differences between the players. The Sony was smoother and more neutral through the midband, while the Sharp was sharper and more dynamic at the expense of identifiable upper midband colorations. As you would expect, the digital inputs were better than the analogue ones when recording from a digital source, but these things are of less importance than the earlier observations.

Although there isn't a bucketload of difference between the Sony and the Sharp in the key areas, there is one peripheral difference which should be noted by those after music on the move. The Sony is equipped with what can only be described as state of the art earphones, which are plenty good enough for sustained fatigue-free listening. They are unusually uncoloured, yet have a surprisingly civilised treble. Bass quality is also better than expected. By contrast, the Sharp earphones have a raucous treble and a black hole where the bass should be. The Philips phones weren't in the Sony's league either, but are still a highly acceptable design that sounded lively and open, with bags of detail, but some midband raggedness where the Sonys sounded like silk.

Earphones aside, it was obvious from the first few notes of Metallica's *Holier Than Thou* that the Philips was made of sterner stuff. In contrast to the two MD machines, the DCC sounded bold and vital, and ultimately more engaging — there was more going on, giving the aural senses more of a workout.

For the first time in this test, the treble sounded clean and crisp, without the fried-eggs quality of the MD recorders, but with plenty of detail and a more palpable sense of presence. There was less to choose in the bass, but the midband was similarly more vital and engaging — and in stark contrast

to the MD experience, classical piano was also a quality item on test. The Philips was much more consistent than the others, with none of the rather crudely-drawn quality that becomes apparent on MD when the music turns stressful. In general, the DCC machine came much closer to accepted standards of high fidelity than the others, and indeed could often be mistaken for a domestic DCC deck. If I wanted to bootleg an essential concert, this is the one I would choose.

The Philips provides mute testament to the continuing strength of the analogue audio cassette as the *de facto* standard for audio carriers and was quite good with analogue cassettes. Though a little treble shy, and with intermittent episodes of fast wavering pitch (but no programme wow), it sounded reasonable, and should fulfil your analogue requirements in any other than quality-first situations.

VERDICT	
Philips DCC170	★★★★★
Sharp MD-M11	★★★★★
Sony MZ-R2	★★★★★

In the end, the test outcome was quite clear-cut. If you want small and sexy, go for the Sony or the Sharp. Sonically they could have been shelled from a pod, but the Sharp has better search and programming features, and track titles can be recorded. The Sony was a little cleaner sounding, especially in the midband, but its main advantage is a very superior sounding earphone.



Sony MZ-R2 — smooth and neutral in the midband, and supplied with excellent headphones

The Philips can't match the other two on their home turf. Despite recent improvements whose effects can be gauged in the new mains-based decks, the DCC170 remains frustratingly slow when finding tracks, rewinding to the start of a new recording, or laying down an intro passage.

The DCC170 has a good display, and the controls worked well — though the important headphone volume control was awkwardly placed. It is effectively jog-proof, whether recording or playing back. The Sony and Sharp were largely jog-proof during replay, but not when recording.

The superiority of the Philips can be summed up under three headings: sound quality, compatibility and cost. The Philips is by far the best sounding model of the three. It can play your old cassettes (thereby offering a hedge against the paucity of prerecorded DCC tapes in the shops). Finally, the DCC170 costs little more than half the price of the two MiniDisc players.

SPECIFICATIONS COMPARED (based on maker's figures)			
	PHILIPS	SHARP	SONY
SYSTEM TYPE	DCC	MD	MD
SIZE	99.8 x 38.1 x 111.6 MM	84 x 29.8 x 106 MM	84 x 29.9 x 106.8 MM
WEIGHT	420G	300G	310G
RELATIVE SIZE/WEIGHT*	1.6 / 1.4	1 / 1	1.01 / 1.03
BATTERY LIFE - PLAY	150 MINS (DIGITAL)	150 MINS	150 MINS
	210 MINS (ANALOGUE)		
BATTERY LIFE - RECORD	120 MINS	120 MINS	120 MINS
RECHARGING TIME (90%/100%)	-/3 HRS	1.5/5 HRS	1.5/5 HRS
BATTERY TYPE	NI-CAD (INT)	LITH** (INT)/ALK*** (EXT)	LITH** (INT)/ALK*** (EXT)
AUTO/MANUAL LEVEL RECORD (ANALOGUE)	BOTH	BOTH	BOTH
BASS BOOST	3 STEP	2 STEP	3 STEP
HEADPHONE VOLUME LIMITER	NO	NO	YES, SWITCHABLE
TRACK EDITING	YES	YES	YES
TRACK PROGRAMMING	NO	YES	NO
REMOTE CONTROL	IN EARPHONE LEAD	IN EARPHONE LEAD	IN EARPHONE LEAD
MAXIMUM RECORDING TIME	90 MINUTE (2 x 45)	74 MINUTES	74 MINUTES
PRICE	£250	£450	£450

*size relative to Sharp (= 1) LITH** Lithium battery/ALK*** Alkaline battery



win!!



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Blow the average hi-fi system away with £3,000 worth of Revolver speakers

Shoot up in your friends' estimation by winning one of 12 pairs of small-bore speaker superstars from Revolver. Perfect for playing your Guns N Roses CDs — just don't play too loud, or your neighbours will come gunning for you.

Revolver loaded into the hi-fi industry last year, in an attempt to do battle in the great budget speaker shoot-out. Instead of getting caught in the cross-fire, Revolver has been climbing up the loud-speaker charts with a bullet. Revolver speakers are all named after guns — Dirty Harry's Smith & Wesson .44 Magnum ain't among them, but famous shooting names like *Berretta*, *Colt* and *Purdey* are.

The four first prize winners will not have to kill for a pair of floor-standing £250 *Purdey* speakers. Named after the makers of hand-crafted shotguns, the elegant two-

way speaker uses a 19mm dome tweeter and 130mm bass drive unit made especially for the company to make the speaker blow holes in its opposition. The four second prize winners will each receive a pair of *Colt* stand-mounted speakers, complete with RSI stands, worth £220 a pair. Named after the makers of the *Peacemaker* and the *Colt 45*, these will be sure to trigger a broad smile across any listener's face.

Four more lucky winners to ricochet out of the post-bag will each see a pair of *Berretta* speakers and RSI stands, worth £170. These compact speakers are named after the tiny gun that superceded the *Walther PPK* in James Bond's arsenal. All 12 lucky winners will also receive an extra blast with a *Revolver* sweatshirt, while the next 50 names will each find a *Revolver* T-Shirt in their sights. The rest of you will just have to shoot round to your local *Revolver* dealers for a quick salvo. Hasta la vista, baby!

1. What sort of weapon is the bespoke gunsmith Purdey best known for?

- a) Light Assault Rifle
- b) Sub-Machine Gun
- c) 12-bore Shotgun
- d) Semi-Automatic Pistol

2. What was the famous nickname for the Colt revolver of the Wild West?

- a) Peacemaker
- b) Breadwinner
- c) Pacemaker
- d) Lawgiver

3. Name James Bond's preferred gun, until 'M' insisted that he swap to a Berretta?

- a) BFG9000

b) Luger

c) Walther PPK

d) Smith & Wesson .38 Special

4. What, according to Clint Eastwood in 'Dirty Harry', is "the most powerful hand gun in the world"?

- a) Smith & Wesson .44 Magnum
- b) Colt .45
- c) Berretta
- d) Heckler & Koch Waterpistol

5. What make and size of bass drive unit is used in the Revolver Purdey?

- a) Glock 9mm
- b) Revolver 130mm
- c) Uzi 9mm
- d) Howitzer 250mm

HOW TO ENTER

To enter the competition, simply answer the six questions on the back of a postcard or sealed-down envelope, and send with your name, address and telephone number to: Revolver Competition (HFC504A), Hi-Fi Choice, Tower Publishing Services Ltd, Tower House, Sovereign Park, Market Harborough, Leics LE87 4AU. Entries must be received no later than first post on Tuesday 30 May, 1995.

COMPETITION RULES

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

REVOLVER

And... The man

Hi-Fi Choice

What's all this computer games business about anyway? And is it going to kill your hi-fi? Alan Sircom fights fear with knowledge.

If the computer revolution was an armed struggle, we'd be in the middle of World War III. Looking back to when Compact Disc was new and we still called it DAD (digital audio disc), computers at the time were either simple and slow or big and slow. Generally, the nearest thing to home computer games was Pac-Man in the nearest pub.

Today, an ever-increasing number of homes have a computer or computer game of some description in their home entertainment arsenal. These range from humble calculator-style affairs through hand-held Nintendo GameBoys to multimedia PC and Apple Mac computers — many of which would be equally at home in professional environments.

In the future, computers will have an increasing part to play in home entertainment. The latest machines on the market can play conventional CDs with as much ease as interactive CD-ROMs; the next generation may well add the option to play complete films on a single disc.

This revolution in home computing has had an obvious effect on music and hi-fi buying trends. When the computer games market began to take off, music sales experienced a dramatic downturn. Today, however, as new bands flourish and sales of music are picking up again, people demand more from their home entertainment. Games are not only expected to be packages of 'fun and action' — they also need to provide excellent picture quality and the finest sound. So, slowly but inexorably, the computer games industry turns to the hi-fi world for high-quality sound. As the performance of the systems continuously improves, the requirement for good sound increases.

Pet favourites

Although one could cite the Apple II or the Commodore PET of the '70s as the first home computers, Britain entered its home computer era back in the early '80s, thanks to a brace of Clive Sinclair's machines. First the ZX80, then the ZX81, and finally the ZX Spectrum of 1983/84. These machines were cheap enough to be the Christmas present that every teenager lusted after — even more than a Claire Grogan poster.

The ZX Spectrums offered far more for the teenage psyche than simply new technology — they offered computer games. The software designers became stars and Clive Sinclair made a huge fortune, only to blow it on C5s and deely-boppers. Computer companies proliferated, using a plethora of different systems; Acorn/BBC (with its massive educational support), Atari ST (still popular among musicians), Commodore Amiga, Commodore 64, Dragon, MSX, Vic 20 and many others had their followers.

The audiophile as vigilante: "Touch my hi-fi and you're dead, silicon scum!" But it needn't be like this...

Around the same time, computer giant IBM developed its PC (personal computer) standard. Although primarily intended for business use, it became clear during the latter half of the '80s that this format would also dominate the home computer market. Platforms like Atari and Amiga still have their followers, but new gamers are now more likely to buy a PC than any other computer format.

If you are thinking of buying a PC for home use, it is worth considering the multimedia option, as you never know when the need for games will hit you. Also, if you have children, there is now some superb educational software, which doesn't involve gratuitous violence. However, if you do want gratuitous violence, few sports get more violent than the popular *Doom II*, where you can blast away the mutants.

A good specification for a games PC today would use a 486 DX2 processor, running at a clock speed of 50MHz-66MHz, armed with 320 Megabyte hard disc drive and at least 8 Megabytes of memory, SVGA graphics and colour monitor, a CD-ROM driver and a SoundBlaster sound card. Such a machine would ideally be supplied with the most up to date versions of MS-

DOS and Windows operating systems.

There are also many people who are after an arcade-type game, without the



Don't fear th

added expense of serious computing power. These consoles have traditionally been made by the two companies seen as the big players in the arcades, Nintendo and Sega. They offer direct connection with the TV (computers generally run off a monitor, not a TV screen) and interchangeable games which are fun to play, if as intellectually stimulating as an in-depth interview on *The Word*.

A recent development has been the multinational home entertainment companies getting involved in dedicated games consoles. The most successful venture to date has been Philips CD-i. This can play audio and current FMV (full motion video) discs, along with dedicated CD-i interactive games and educational software. Its current competitor is Panasonic's comparatively new 3DO machine, which also uses a 12cm CD to play games.

However, what could be the most interesting development has only just been launched in Japan; Sony's *PlayStation*. This CD-ROM based unit, packed with '90s chip technology, is suggested to be a formidable opponent to existing machinery. Inveterate game-players suggest that PlayStation may well be the ultimate games console, although the PC is still the master for strategy games. PlayStation is expected to arrive in Britain in the latter half of 1995.

The Missing Link

So, what rôle does hi-fi have to play in the multimedia future? Quite simply, as people begin to link the computer with the rest of the home entertainment system, the hi-fi will take its natural place, playing any audio signals with as much grace as it can muster. Adding even a cheap amp and shielded speakers to a home PC can transform the basic performance, providing that extra sense of realism, especially when compared to the £20 powered speakers often used with computers.

At the moment, only a select band of companies are supplying speakers of a hi-fi quality for computer multimedia. These include Aiwa, Bose, JBL, Sony and Wharfedale. In particular, the Bose *Acoustimass* system is one of the few especially equalised for working in the near-field, which is ideal for listening



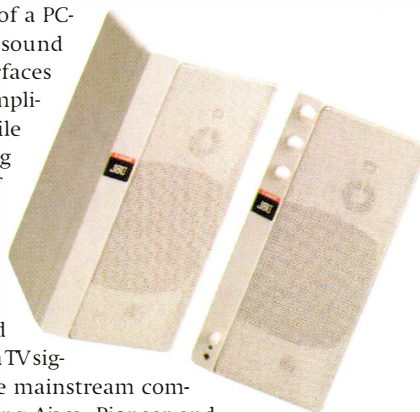
close to a monitor.

However, beneath the cover of research and development, many hi-fi companies are busy developing computer-friendly products for the next stage of multimedia entertainment. At least one British company is actively considering the feasibility of a PC-compatible sound card that interfaces with its latest amplifier system, while another is toying with the idea of an AV amplifier which can accept SVGA video input from a PC and convert that to a TV signal. Many more mainstream companies, including Aiwa, Pioneer and Sony, are currently developing computer peripherals, such as modems and CD-ROM drives.

Meanwhile, the US audio giant Harman is branching out into the world of software. Harman Media is a new company, producing programs intended to aid linking components together. But it's early days yet.

Right now, the hi-fi and computer enthusiast are two very separate individuals. But with each passing day, more computer buffs are getting into hi-fi, while hi-fi enthusiasts are becoming just as familiar with SCSI leads and RS232 ports as they are up to date with the latest phono leads and speaker cables.

Will Sony's PlayStation be the new Walkman of computer games?



JBL have created special speakers for computers...

...The Media 3 (above) and Media 2 (left) are just two in the range



No more Next Big Things?

For years, hi-fi pundits have stayed in business by proclaiming the demise of one format and the dawn of another. However, the more we learn of the topsy-turvy consumer electronics cosmos, the more it becomes apparent that such black-and-white observations are naïve. Just look at the hoary old debate of CD vs vinyl. Sure, vinyl has ceased to sell in bulk, but it still sells, and people still buy turntables. DAT was declared a commercial disaster, but it's a staple of the professional recording industry. Even if MiniDisc makes no further inroads into the consumer market, it has a promising future as a high-tech jingle-player for radio stations. With the possible exception of the Bermuda Triangle, there are no markets on the planet in which products simply disappear overnight.

So, audiophiles should not succumb to anxiety if the popular media proclaims that hi-fi is dead and the future is in computer games. Naturally, interactive media has the potential to become a potent form of entertainment in years to come (in truth, it has still made little progress from the most basic stages). However, tomorrow's domestic environment will be defined not by one 'system' reigning supreme, but by harmonious coexistence between hi-fi, computers, surround sound products, interactive media and impressive, big-screen displays. The sophistication will not be in processor speeds, but in ease of use and seamless integration between domains of music, drama and computer data.

The only problem for audiophiles is in convincing the manufacturers not to adopt a one-track approach. People will still want good-quality music in ten and twenty years' time. And even if the music industry spontaneously combusts, there is a vast canon of music already recorded which right-minded folk will revisit to the end of time.

There's one sure way to guarantee the future of the hi-fi industry: support it. By all means buy a computer, but save some money for new hi-fi gear — equipment available now is better than it has ever been. And at the end of the day, a computer is just a tool. It does the job, with greater or lesser speed depending on specification, but that's it.

With hi-fi, the job of sound reproduction is never so clear-cut — but when it is done properly, by a system that really sings, the satisfaction is incomparably greater than that of wiping out any number of pixelated aliens.

Stan Vincent

e bleepper



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Speakers

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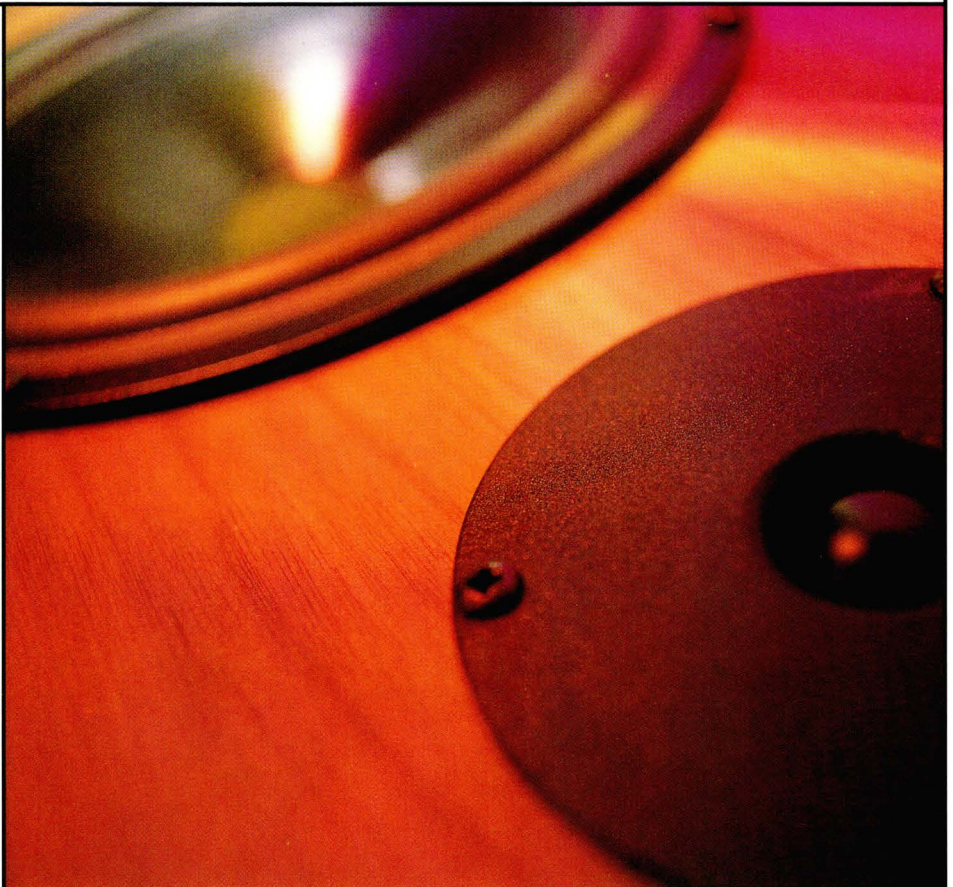
Following February's test of £250-£500 speakers, this assessment features eight models in the price category immediately below: £100-£250. This price band may seem a little broad in the marketplace context, but it includes a number of examples in the key £100-£150 budget miniature sector, which accounts for the majority of hi-fi speaker sales. These will stand in stark contrast to what can be achieved with a little more money and a larger box.

All are so-called 'bookshelf' type models, which means specialist stands (or in some instances, a wall bracket) can be added underneath to provide support which will let the speaker work to the best of its abilities. Since the addition of a stand can easily put an extra £100 onto the overall cost, making value comparisons between some of these bookshelf models and the less expensive floor-standers is by no means straightforward.

For example, contrast the £200 Mission 732 in this group with the £300 floor-standing 733 covered in February's tests. Apart from the cabinet size, they're very similar. But with subtly better voicing and no need for a separate stand, the larger model turns out to be significantly better value on our tests. However, that is not to say this will always be the case. The larger the cabinet, the more difficult it is to suppress the panel resonances which colour the sound, and the harder it is to control the mechanical support rôle and driver interaction effects.

There are no glib and easy answers here: the bookshelf model is inherently more flexible, leaving the choice of stand type and height up to the purchaser. But there's no denying that many people dislike ironmongery cluttering up the lounge, and often prefer the floorstander purely on aesthetic grounds.

You are, of course, free to place your bookshelf speaker on a convenient bookshelf, room divide or other piece of furni-



ture, and save some money in the process. Just be aware that such a system is never going to sound anywhere near as good as one which uses proper loudspeaker placement and support. And for guidance to the latter, check out our regular round ups on speaker stands.

Running through the cast list, there are two real tinies here, from Mordaunt-Short and Monitor Audio. Both are significantly smaller than the familiar 7-10 litre miniature stereotypes which have led the UK market for the past umpteen years, so it's appropriate to label them sub-miniatures. They're not the first – MA's *Monitor One* and the Zyp *A1* are smaller still – but the fact that two such tiddlers turned up in a trawl of eight models does suggest that the hi-fi speaker is threatening to shrink even further, especially since the Mission 731 and Tannoy 631 are also smaller than their predecessors.

With the GLL *Mezzo* occupying the middle ground, and somehow looking less fashionable for that, the venerable JPW *P1*, the all-new Mission 732 and the revised B&W *610i* all look distinctly bulky by today's standards – even if twenty years ago they would probably have been considered too small to take seriously. To find out how successful this down-sizing operation has been, read on through the reviews and conclusions.

The cast list

B&W 610i	£250
GLL MEZZO	£170
JPW P1	£170
MISSION 731	£130
MISSION 732	£200
MONITOR AUDIO MA200	£200
MORDAUNT-SHORT MS 05	£110
TANNOY 631	£150

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B&W 610i

B&W has been building successful bookshelf loudspeakers since long before I took over reviewing speakers for *Hi-Fi Choice*, and I guess it would be possible to track the *610i* right back to ancestors like the famous *DM110*, reviewed way back when *Choice* was a pocket-sized *A5* device. More immediately relevant, as well as easier to find, is the original *610* (see issue 102, which is coincidentally the same issue that last covered the *JPW P2*), when the asking price was £200. Exactly what the 'i' suffix signifies is not apparent at first glance; certainly there's nothing improved or injected on the presentation or configuration side of the things, which looks exactly as before.

The new price represents a 25 per cent rise over three years. This isn't a cruel or unusual

increase, but it is significantly more than the increase in average pay packets over the same period, and significantly more than the relatively modest inflation rate that has applied. And as I'm sure you've noticed, consumer electronics products usually lag well behind overall inflation.

That said, the price still makes reasonable sense in the current market (providing you leave the *JPW* out of the equation). The B&W is a quite big, solid speaker, comfortably larger and heavier than the £150-£200 models assembled here. Examining the construction in detail brought an almost overwhelming feeling of

déjà vu — I'd be most reluctant to identify the i-type changes with any conviction, and without setting the two side by side for scrutiny.

The cosmetics are smart, contemporary and reasonably restrained, if rather plastic. Grey mouldings cover the front panel, adding an edge chamfer that slims the appearance and improves the structural stiffness. The moulded frame grille continues the chamfer and successfully creates a more sober-suited aesthetic. Soft plastic inserts are used to cover the driver mounting hardware and create some further contrast.

Despite its bulk, the speaker has a substantial feel that is reflected in its 8kg weight. The vinyl woodprint box is fairly well stuffed with wadding and built up from 14mm chipboard. Baffle stiffness is augmented by the front moulding, through which the drivers are secured. Six coarse-pitch screws hold the main driver in place, with four of these biting quite tightly right through into the chipboard.

The main driver has a 150mm plastic cone, a pressed frame and a fair size magnet, while the tweeter has a large 30mm metal dome covered by a phase compensator ring which provides some limited physical protection against prying fingers. Twin terminal sets provide a bi-wiring option and feed a fairly simple PCB crossover (four elements plus resistors) with tag connections throughout.

Sound Quality

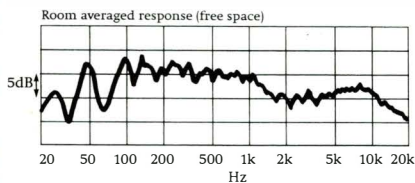
Echoing the findings of the original *620* review, the *620i* polarised opinions and split the panel into pros and antis, leading to an average result that is a little disappointing for a £250 speaker.



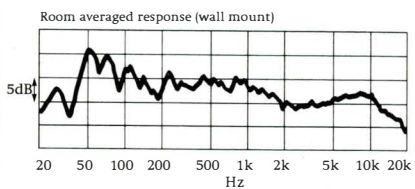
LAB REPORT

The biggest model in the test group, and a sealed box design too, the *610i* was almost bound to produce decent bass extension. Even so, the -9dB in-room at 20Hz is a good figure. Bass alignment is good too: our tests indicate that wall proximity can be used to 'tune' the balance to suit room, system or taste.

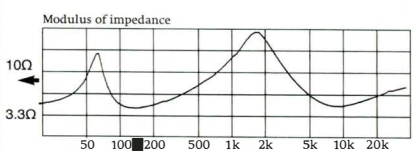
The broad midband is reasonably flat and even, registering a high 89dB sensitivity at the expense of a current-hungry amplifier load. The trend is gently downward with increasing frequency, with a broad shallow depression through the presence region (1.2-5kHz), prior to recovery between 6 and 9kHz.



Balance is good, if a little bass light. It's also down-tilted from mid to treble and a little lacking in presence energy.



Wall reinforcement adds too much midbass; midband is well balanced if uneven; the presence region is slightly depressed.



Sealed box loading ensures good bass extension, but low impedance will make heavy demands on the partnering amp.

Cosmetically the sound is pretty good, with an balance that is flatter and more even than most, a satisfying sense of weight and power at the bottom end, and a good impression of headroom and scale. But it also all sounds rather squashed and uninvolved, and both dynamics and dynamic range seem distinctly challenged, giving a net result which is easy on the ears but isn't very involving or satisfying.

The bottom end has plenty of weight and is pretty well defined on simple material, but it can be quite difficult to distinguish individual instruments and what they're doing when things get complex. The impression is not so much of a speaker that's slow, as of one that's congested and smeary, uncrisp and a bit blurred.

Conclusion

Exactly what B&W has injected into this new 'i' variation on the *610* theme remains a little nebulous, although there are indications that the balance is now rather smoother than before.

VERDICT

- ▲ A smooth modern variation on the classic large bookshelf theme
- ▼ Slightly heavy and dull balance doesn't reach out to grab the attention

SOUND ★★★★★

VALUE ★★★★★

PRICE £250

✉ B&W UK Ltd,
Marlborough Road,
Lancing, West Sussex
BN15 8TR.
☎ (01903) 750750

The bass is a tighter too, but the review findings are very similar indeed to those of its predecessor, again indicating that the smaller and more agile £180 *600i* (issue 135) may prove the better all round package.

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GLL MEZZO

The *Mezzo* name resurrected for this new £160 speaker stretches way back into the days before hi-fi became a mass-market product, ultimately to the M-series models which helped put the Goodmans name firmly on the hi-fi map. Reconstituted as GLL, the company is making the most of its heritage, and — with the new *Mezzo* and *Magnum* models priced at £160 and £200 respectively — hoping to repeat the success enjoyed by recent variations on the *Maxim* theme.

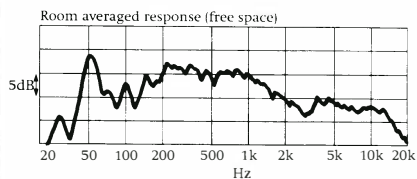
Checking back through the family tree, I find previous *M300* and *M500* models (issues 82 and 94) which cost £100 and £130 back in 1990/1, and since the *Mezzo* is closer to the latter than the former in size and weight, the new model's £160 price tag looks very

LAB REPORT

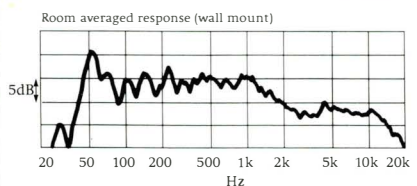
The *Mezzo* delivers a very decent 89dB sensitivity rating across the broad midband, and does so despite presenting a relatively easy amplifier load.

Bass alignment is dominated by the port output, centred on its 50Hz tuned frequency. Wall reinforcement fills out the upper bass well, but in so doing it leaves the 50Hz peak some 5dB too strong.

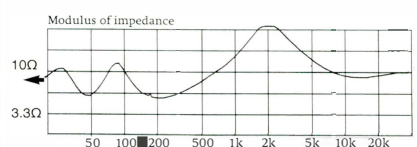
Relative treble output is well down with respect to the midband too. Output falls a rather dramatic 9dB between 1kHz and 2.5-4kHz, and there's only minor subsequent recovery, a characteristic bound to give a sound that is restrained to the point of being dull.



Over-restrained presence and treble plus a midbass peak are the most obvious characteristics, along with a fine midband.



Although the bass-to-mid balance is pretty good, the port-tuned output at 50Hz is rather dominant.



The trace shows a relatively easy amplifier load, mostly above 6 Ohms, with reasonably well-damped port-loading

reasonable. Comparison against the others assembled for this group test also indicates an above-average quantity of engineering for the money, though the *Mezzo* is still some way behind the leader of the pack.

That said, it's not the prettiest speaker around, especially when clad in a rather tacky 'mahogany' vinyl wrap like our review pair. The driver fixing

arrangements are completely concealed under a plastic overlay, which would have left the grille-off appearance looking very clean and tidy were it not for a rather large badge with arcane gilt lettering alongside the cat-with-one-ear logo. Badge and cat haters at least have the option of a well-engineered grille with flared plastic frame.

Quite what to do if you blow one of the drive units, short of shipping the box back to Havant, is not immediately obvious, as there seems no way of getting at the drivers without ripping off the baffle trim. But GLL assures me that this is the correct procedure, that it's not difficult, and that replacement self-adhesive trim is supplied. The *Mezzo* is rather dumpy by current fashion, but that is excusable on acoustic grounds.

The enclosure is built from 12mm chipboard, and the rear panel graced by a quite large port. A simple hardwired crossover is fitted inside the terminal block, feeding the drivers with good gauge wire, and the inside of the box is stuffed with damping fibres. The main driver has a pressed frame and a good size magnet plus a 115mm plastic cone and soft rubber surround. The 19mm metal dome tweeter diaphragm is protected by a shaped phase compensator. Apart from noting that woodscrews are used, I'm unable to comment on their effectiveness.

Sound Quality

Sonically the *Mezzo* is a bit of a mixed bag — something which tends to be true for all budget speakers — but on this occasion the strengths and weaknesses are rather more obviously polarised than usual.

Attempting to weigh up the pros and cons, the panel delivered a middle-of-the-road verdict, which is fair enough for a speaker at a middle-of-the-road price. The broad midband is most



impressive, arguably the best in this group, combining evenness and liveliness with delicacy and coherence. But the presence is obviously dull and very shut in, and the treble, though restrained, is far from sweet.

The bass can be rather overbearing at times but has little in the way of genuine power, and can get congested when the going gets tough. It also has a tendency to sound boxy, detached and one-note, but mostly avoids obscuring the more important things going on further up the band, and gives that very decent midband a good chance to communicate with the listener.

Conclusion

The *Mezzo* lags behind the pack in terms of box build and presentation, but still represents a very respectable package for the price. The port output definitely errs on the enthusiastic side, perhaps in an attempt to make up for a main driver which definitely favours the midband, while the dramatic downturn in the presence region will certainly not be to every taste.

Assessed by absolute standards the GLL *Mezzo* would just miss out, but in the context

of the budget hi-fi systems it's clearly intended for, where treble is inclined to be untidy and the midband is where things work best, it ought to make a pretty good match, and so deserves a Recommended swingtag.

VERDICT

▲ The midband is a genuine class act; a decent size speaker for the price

▼ Cosmetically a bit tacky, treble is decidedly dull, and bass alignment poor

SOUND ★★★★★

VALUE ★★★★★

PRICE £170

✉ Goodmans Loudspeakers Ltd, 3 Ridgway, Havant, Hampshire PO9 1JS.
☎ (01705) 492777

JPW P1

It always seems a little unfair that the *Choice* review schedule is devoted almost exclusively to new models. It's logical enough, inasmuch as that we never quite manage to catch up with all the 'new' — often merely revised — speakers which appear. But it's a policy that seems tough on manufacturers who create a design that goes on selling and lasts long after the expiry of the three-year cycle practiced by most leading brands, usually without any additional review stimulus.

But it's also worth asking whether long-lived models really do stand the test of time, and whether a Recommendation at £125 in 1988 (issue 59, for archivists) still slices the gravy at £170 in 1995. That was in the days when I was editing rather than writing, but I did review the

vinyl finished *P1V* three years ago (issue 102), and that provides a relevant context and similar enough measurement regime to figure out what has changed. The answer, firmly backed up by the measurements, seems to be very little indeed — even the price seems to have gone up more slowly than the opposition over the years, inflating at around five per cent per annum. And what a package £170 buys. It's not quite the biggest or heaviest in our group, but comes close, and it's certainly the only one finished in a real wood veneer — not the classiest wood around, perhaps, but a whole lot prettier than any vinyl.

It feels quite solid too, which isn't surprising: the cabinetwork foundation is 16mm MDF. This is a sealed box system, explaining why it's so well stuffed with wadding. A single terminal pair feeds a fairly simple crossover with decent internal wire, and all internal connections are soldered. The thick frame grille has some inside-edge chamfering, so it can be used to cover the drivers without much penalty. Some may prefer this — the drivers don't look particularly elegant, either in themselves or in the way they're bolted to the baffle without any rebating.

Another welcome surprise is that the *P1*'s main driver here uses a cast rather than pressed frame, a rather modest magnet helping drive the quite large (155mm) paper cone, terminated in a foam surround. The tweeter has a smallish (19mm) soft fabric dome with a short horn flare. The drivers are also bolted in place, which is another feature found normally only on more upmarket models, but the bolts themselves were not very tight.

Sound Quality

The listening panel was split down the middle here, with half rating the *P1* a little below average, and the other half placing it firmly at or near the top of their lists. Averaged out, the net result comes close to the top, but the divergent reactions do demand scrutiny.

Most of it probably comes down to personal preferences. The *P1* is one of the better balanced models, and this fact alone ensures that tone colours are essentially neutral. The stereo

imaging also attracted favourable comment for its natural perspectives. But smooth it's not, and there are a number of individual colorations which can be intrusive.

The tweeter was too exposed for it to be to everyone's taste, and sounded rather harsh and hard with some material. Voices are not entirely natural, with a measure of 'cuppy' coloration and a lack of immediacy. The bass has a rather thumpy tendency, lacking agility and tending to thicken and clog on complex material. But there's at least a measure of authority here, with an impression of drama, headroom and general lack of strain which is comfortably ahead of the smaller miniatures.

Conclusion

On material value for money grounds the *P1* sits head and shoulders above the competition, and that observation alone virtually demands a Best Buy rating. But it also has a sound quality which was up near the top of the group and a basic performance envelope which is altogether greater than the miniature models in terms of

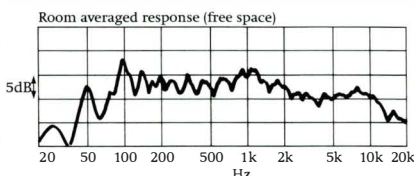
headroom, loudness capabilities and bass delivery. The *P1* proved a little too untidy for some, though, so the best advice is to check it out for yourself, rather than just phoning your credit card details to a mail order house.



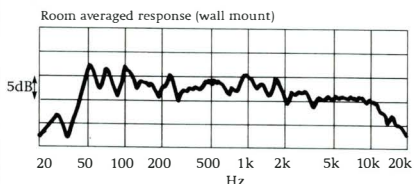
LAB REPORT

The *P1* gives a good set of results, with its 87dB/W sensitivity entirely uncompromised by the easy-to-drive load shown in the impedance trace. Bass extension is good, thanks to sealed-box loading. The driver/box fundamental resonance registers 80Hz, but the 20-80Hz region is where the room modes and surface reflections provide a compensatory boost.

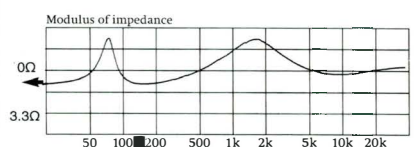
Although there's a fair amount of local unevenness en route, close-to-wall siting delivers a balance which holds within ± 4 dB limits 50Hz-10kHz. Free space, on the other hand, is rather bass light, leaving peaks at 100Hz and 900Hz-1.2kHz looking rather exposed.



Basically good balance is rather bass light without wall reinforcement, leaving minor peaks at 100Hz and 900Hz-1.2kHz.



Close-to-wall siting fills in the midbass, giving a good overall balance that holds within modest overall limits.



An easy amplifier load that doesn't make excessive current demands, with sealed-box bass alignment centred on 80Hz.

VERDICT

- ▲ Remarkable material value for money, and can still deliver the sonic goods
- ▼ Just beginning to show its age, sonically as well as aesthetically

SOUND ★★★★★

VALUE ★★★★★

PRICE £170

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

MISSION 731

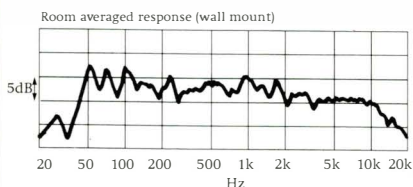
Few speakers come in for review with such a heavy historical burden. The 731 is the replacement for the 760/760i models, and the fact that these highly successful models have dominated the UK sales charts throughout the '90s makes them a decidedly hard act to follow.

The new model has plenty in common with its predecessors. It's roughly the same size, follows the same basic two-way 'upside down' driver configuration, and is similarly constructed by sandwiching a wood-based top/base/sides wrap between moulded plastic front and back panels. But many of the details are new, like the drivers themselves and the way the mouldings are used, reflecting not only the increased knowledge and understanding accumulated, but

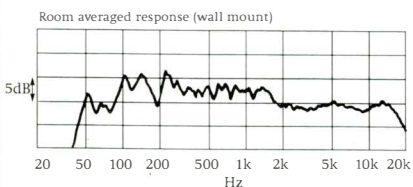
LAB REPORT

One can forgive miniature speakers for failing to deliver any worthwhile deep bass (sub-50Hz), but the 731 is a bit light in the 50-100Hz region too, even close to a wall. This is something that its predecessors managed to avoid. The reason may be an impedance that is less demanding than its predecessors.

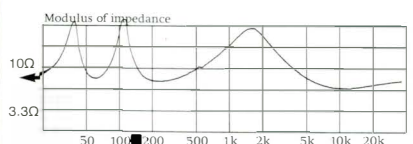
Maximum in-room output level is achieved between 100 and 250Hz, a region that is far from smooth and even. Above that the broad midband is quite flat up to 1.5kHz, then falls abruptly, registering -4dB at 2kHz and maintaining that level with minor irregularities through the treble.



Very bass light without wall reinforcement; has a good balance through the midband and treble, despite local unevenness.



Wall proximity helps give the bass balance a measure of respectability, but there's still some lack of energy in the 50-100Hz region.



An easy load for amplifiers, the port is tuned to 60Hz — well below the driver/box resonance. Note the glitch at 550Hz.

also the need to control costs.

Prices tend to double to approximately over a seven year span, so although inflation hasn't been that bad over the past decade, Mission is doing pretty well. The original 760 (issue 90) was launched in mid-'89 at £100, and the 760i sold for £120 at the time of our September 1992 review, so the £130 tag on the 731 seems a very attractive proposition.

The 731 follows the budget miniature stereotype pretty closely in overall configuration, although the enclosure construction and driver mounting arrangements are unusual and ingenious. Perhaps uniquely, the main driver is mounted onto the back rather than the front of the enclosure, or more precisely onto four of six hollow struts which are part of the back panel moulding and travel right through the inside to just behind the front panel. The latter moulding covers all this up and accommodates the tweeter, the purpose being primarily to isolate baffle and tweeter mechanically from the vibrations generated by the main driver. Both the struts and rear panel shaping should help disrupt internal standing waves. Provision is made for attaching an optional wall bracket.

The main driver has a 97mm doped paper cone, pressed-steel frame and small magnet, while the 28mm annulus dome tweeter is protected under a mesh cover. Both are held by tight, coarse-pitch screws. The PCB crossover is quite simple, with tag connections and rather feeble components and wiring. Lightly damped internally by a couple of foam panels, the box proper is built from a 15mm chipboard wrap, covered in vinyl woodprint. Cleverly radiused edges combine with subtle shaping of the baffle and grille mouldings to give an attractively 'softened' appearance that's free from jelly mould overtones.

Sound Quality

Initial listening tests, prior to the arrival of the panel, had given reasonably positive results, so it was something of a surprise to find the 731 trailing at the back of the pack when the results of the blind listening tests were analysed.



There was some criticism of a rather lumpy and boxy bottom end, and the stereo imaging was not to every taste, but it wasn't so much that individual panelists took a particular dislike to the sound, rather that no one managed to summon up any real enthusiasm for the performance it delivered.

A lack of ebullience and verve seems to be an innate and rather dispiriting part of the speaker's character, especially when played at normal listening levels, as I confirmed in subsequent hands-on work. Turn up the wick and things do become progressively more interesting, but at low levels the lack of drama and projection is all too obvious a damper on the proceedings.

It balances pretty well for a budget speaker, even if there's not much bottom end pace or power, but the presence is very restrained and the treble is mildly detached and obvious.

Conclusion

The success of the Mission 731's predecessors led me to approach this new model with high

expectations.

That the 731 failed to fulfil them is all the more disappointing given that the engineering seems to be cleverly conceived and executed, and the overall cosmetics are most attractive.

VERDICT

- ▲ **Clever mouldings create classy 'soft' styling; good overall balance**
- ▼ **Sounds rather bland and boring except when driven hard**

SOUND ★★★★★

VALUE ★★★★★

PRICE £130

✉ Centralforce Ltd,
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MISSION 732

Editorial policy at *Hi-Fi Choice* normally precludes us from examining two models from the same manufacturer in a single group test, but Mission's strength in this area of the market is such that making an exception here seems entirely justifiable. Unsurprisingly, the 732 bookshelf speaker slots roughly midway between the 731 (page 51) and the £300 floorstanding 733 (Best Buy in issue 139). Ancestrally its roots lie more in the 761/762 models from 1989 (issue 66) than the smaller 761i from 1992 (issue 102), but in reality this is a brand new variation on the classic 'bookshelf' theme, and physically it's more closely related to the 733 than any predecessor.

Cabinet size apart, the 732 and 733 are virtually identical, being based on drivers that

certainly have the same diaphragm area. Like its brethren, the 732 features an elegant moulded front baffle, which shares most of its styling cues with the 731. The 732 is larger, of course, but features Mission's traditional 'upside down' driver configuration, the offset port, and the integral moulded badge. The port again features an internal paddle, presumably to control turbulence.

Sheer perceived value for money was one of the key reasons for the 733's Best Buy rating: there are precious few floorstanders around selling for £300 or less, and nothing built on a comparably generous scale has yet come through our test programme. (Whether the generous volume was effectively utilised is rather more of a moot point.) But if the 733 looked unusually good value in a market context, the same cannot be said of the 732. In both size and weight terms it's a step up from the GLL *Mezzo* but slightly below the £170 JPW *P1* and well short of the £250 B&W *610i*, so the 732's £200 pricetag seems logical enough but certainly doesn't represent exceptional value.

The main driver has a 120mm clear plastic cone, a fair size magnet, and a pressed metal frame. It's held by four tight but coarse-pitch screws which don't go through the frame itself but instead secure a plastic trim ring which serves to clamp the frame in place. In common with the other 73-series models, the tweeter uses a 28mm dome/annulus diaphragm under a protective mesh, and is placed below the main driver in this application.

Only the baffle is a plastic moulding — the cabinet is made from vinyl woodprint chipboard some 15mm thick; the sides are stiffened by a small internal cross-brace. Internal damping consists of a light foam lining for the top and back. The four-element-plus-resistor, hardwired crossover is tag-connected to the drive units.

Sound Quality

With better scores than those awarded its baby brother, the 732 came out bang on the group average in the listening tests — a good but unremarkable result for a speaker at this price.

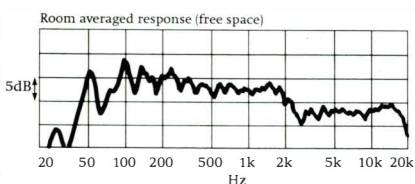
The respectable bass delivery was one welcome factor, of course, bringing a degree of scale and weight that had been notably absent



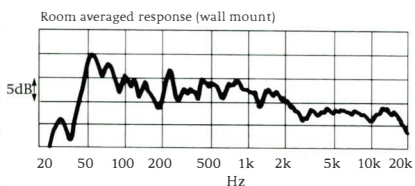
LAB REPORT

Similarities between the 732 and the 733 are many. The impedance trace shows the same tiny glitches at 240Hz and 1.2kHz; the smaller, less exuberant port is also tuned to 50Hz. But there are differences too.

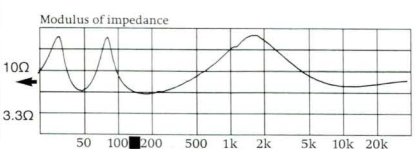
The most obvious consequence of the smaller enclosure and port is a little less output through the bass region, averaging some 2-3dB below 100Hz. Consequently the 732 is bass light if clear of walls, and midbass heavy if hard up against a wall. The trend from midbass to upper mid (c.1.5kHz) shows a slight downtilt, which was not the case with the 733, and the treble level registers a couple of dB less.



Response falls 3dB across the 150Hz-1.5kHz region, followed by a more abrupt 5dB downward step in the octave 1.5-3kHz.



Wall reinforcement leaves the midbass quite exposed, while the upper bass and midband is reasonably flat but even.



The trace implies an easy amp load that stays above a 6 Ohm minimum throughout. The port is tuned to 50Hz.

from its immediate predecessors, although the pleasure at hearing at least some bass was tempered by some criticism of excess, and of a rather thumpy and rubbery quality.

The midband is clear, well ordered and coherent, focusing nicely to give fine stereo images. But it does sound rather dull and lifeless with it — voices are somewhat 'shut in', and the whole thing lacks a sense of drama. There were reservations about the top end, too, especially in the way vinyl surface noise was reproduced, and complaints that the fine subtleties weren't really getting through. "Does that guitar have nylon or steel strings?", one panelist queried, ultimately complaining that there was too much missing to make the experience truly rewarding.

Conclusion

In deciding not to Recommend the 732, I have to confront the fact that I awarded the very similar 733 a Best Buy two issues ago, which seems to imply some inconsistency. There are two key factors. First, the 733 was notably inexpensive for a quite large floorstander, whereas the 732 is no larger than par for the bookshelf course (from which you might care to deduce that most

floorstanders are relatively over-priced, but that's another story). Second, the 732 is just that little bit more down-tilted in midband balance, sufficient to cross the subtle line between broadly acceptable and just plain dull.

VERDICT

- ▲ **Cleverly styled good looker has decent enough sound quality**
- ▼ **A tad pricey for the package on offer; lacks get-up-and-go drama**

SOUND ★★★★★

VALUE ★★★★★

PRICE £200

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Minuetto

MONITOR AUDIO MA200

As the various speakers come in for these group reviews, each is entered into The List, immediately followed by its price and a string of columns which will gradually fill up with comparative data as the programme progresses. As the MA200 was a brand new model, it hadn't yet appeared in our Buyer's Guide, so the couple of weeks before I got around to phoning Monitor Audio for the price, left plenty of time for speculation.

The guessing game began in the context of the other speakers in the group. The MA200 is very small indeed, and, in terms of engineering content, appears to offer little more than the £110 Mordaunt-Short MS05. It's smaller than the £130 Mission or £150 Tannoy, but MA's prices do tend to be a little higher than their

bigger rivals, so I fully expected something around £150-£160.

I should have known better. Both of its bigger brethren, the 201 and 202 (issues 135 and 139), have put on fifty pounds sterling since their original 1994 launch, so it was only half a surprise to discover that the 200 is burdened by a £200 price tag, give or take a few pence. The justification for this is clearly difficult, though since weight and density are often more reliable

indicators of value than size, the fact that it turns the scales several points further round the dial than any of the sub-£150 models is relevant.

The 200 is clearly intended to slot in as a junior partner to the 201 and 202 in MA's scheme of things, and shows some common ground in presentation and drive units. There's none of the heavy investment in structural plastics seen elsewhere. The chunky little rear-ported box is built from wood variations throughout, with a 19mm chipboard wrap and a 14mm MDF front baffle. Gilt bi-wire terminals add a touch of class on the rear, connecting to a simple hardwired crossover with decent wire. The crossover is tagged to the drivers. Internal damping is very light, consisting of just a thin foam pad.

Rebating the driver frames into the front baffle helps give clean cosmetics, but the ugly grille mounting lugs don't help, and the grille itself is an ugly afterthought with a thick frame quite close to the diaphragms. The main driver has a lightly-doped 90mm paper cone with a good size magnet; tight bolts hold it securely in place, warping the pressed frame under the tension. Tight woodscrews hold a tweeter which uses a small 14mm gilt metal dome.

Sound Quality

Two separate presentations in the blind listening tests led to quite strongly divergent results. A close examination of the context and the subsequent hands-on work makes it easy enough to figure out why this happened. The findings reflected not only the characteristics of the MA200 itself, but also the differences between the 200 and the model that preceded it, which only goes to emphasise the risks of relying exclusively on the blind tests, especially where loudspeakers are concerned.

As the measurements imply, the 200 is



sonically a very uneven performer. The rollercoaster-like measured response inevitably results in significantly higher levels of tonal coloration than the group norm, and that's why it was roundly condemned first time around. Uneven it may be, but bland it's not, and the Dr Jekyll side of the 200's character is a dynamic liveliness and transient coherence distinctly better than the norm, and strongly reminiscent of the strengths of the 201 and 202.

Even though the bass lacks both power and extension, it remains pacy and bouncy without seeming to congest or compromise dynamics. Vocal articulation is really rather good, with a lively communicative quality that works well at low as well as high levels. The lower treble is rather restrained, leaving the upper sector a little detached and spitty, but basically this is a design that gets away with its quite dramatic ups and downs rather better than might have been expected.

Conclusion

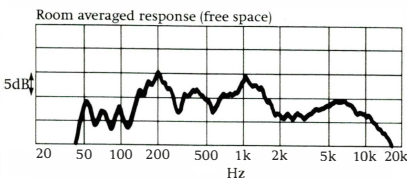
A design as uneven as this is always difficult to summarise. It's actually quite a fun little speaker, and more entertaining than many of its

contemporaries. But the price is rather high, and the degree of unevenness is significantly more pronounced than it is with either of its larger brethren. It's also more pronounced than some listeners will find acceptable.

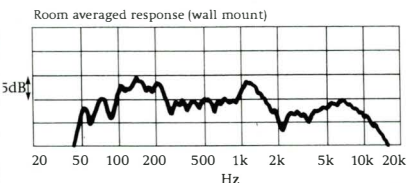
LAB REPORT

Picking a sensitivity rating from a response which swoops up and down by as much as 5dB is next to impossible, but the broad average seems to come out at around 85dB, a rather low figure considering that bass extension is very modest.

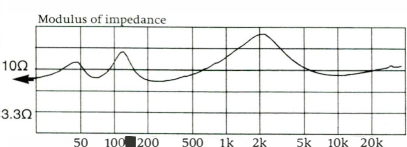
In free space the whole midbass is roughly 6dB below the midband level, so close-to-wall siting is practically mandatory to make the most of what bass there is, and even here output is starting to fall away below 100Hz. There's no avoiding the peakiness around 150-200Hz, and again around 1.2kHz, nor the relative lack of output between 2kHz and 4kHz.



A rollercoaster response promises oodles of coloration from an exposed midband. Mid treble is isolated; midbass is lacking.



Wall reinforcement gives the bass a helping hand, but unevenness is still the dominant overall characteristic.



The impedance curve makes no dramatic demands on the amplifier current supply. The port is tuned to a highish 75Hz.

VERDICT

- ▲ **Very compact and well built; a lively and fun communicator**
- ▼ **Pricey considering the ingredients, with a very uneven and coloured sound**

SOUND ★★★★★

VALUE ★★★★★

PRICE £200

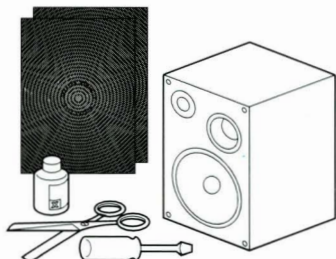
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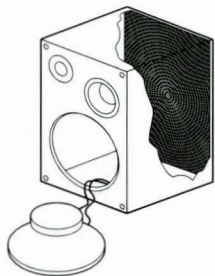


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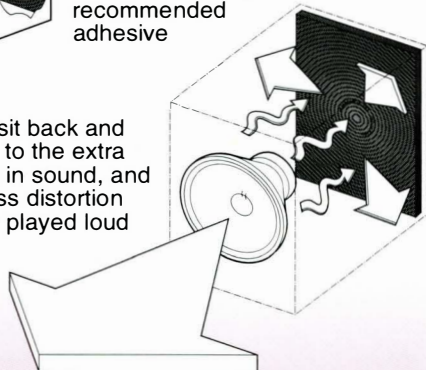
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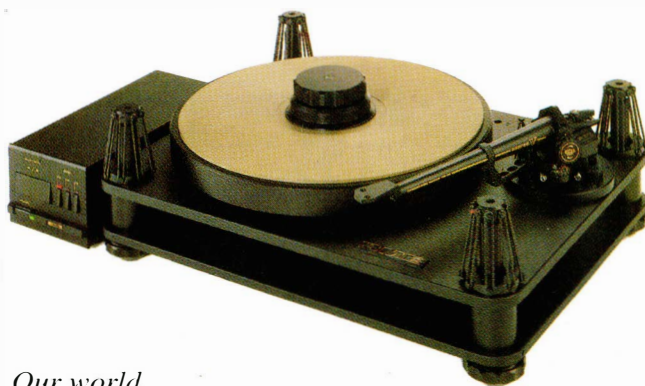
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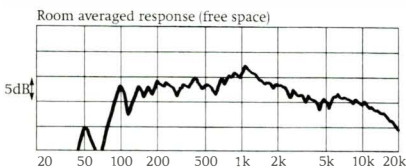
MORDAUNT-SHORT MS05

The launch of Mordaunt-Short's £110 *MS05* illustrates all too clearly one of the major problems facing speaker manufacturers. Unlike most of the products and services that we consume in our daily lives, home electronics are relatively immune from year-on-year price inflation. Loudspeakers are generally perceived as being part of the same product category, so their selling prices have been forced to toe the line and remain more or less constant too. But the loudspeaker is much more a product of mechanical than electronic engineering, and manufacturers inevitably face normal inflationary pressures. The attempt to square this circle is clearly the one of the major reasons behind the introduction of this ultra-tiny £110 *MS05*.

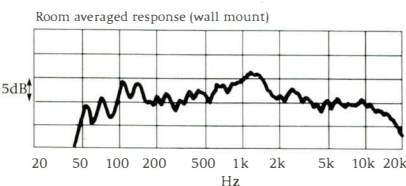
LAB REPORT

In-room tests suggest that the *MS05* has insufficient bass for serious hi-fi applications. Even wall reinforcement leaves it light in the midbass, down by -6dB at 50Hz, whereas the *MS10* was effectively flat down to 50Hz. But bear in mind that the test room is quite large, and that small rooms (under 10ft) tend to increase the midbass somewhat.

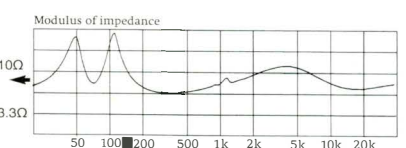
The other most obvious characteristic here is the broad peak centred on 1.2kHz which stands 4-5dB above the rest. This is bound to be audible, but may not be considered unpleasant as it will emphasise detail and projection.



Bass starts to roll off below 200Hz, and rapidly below 100Hz. Balance is good elsewhere, apart from the 1.2kHz peak.



Wall reinforcement at least ensures respectable in-room bass down to 100Hz, though 50Hz is down by 6dB.



A nice easy amp load which stays above 6 Ohms throughout. The ports are tuned to a highish 75Hz.

Until now and since the dawn of time, Mordaunt-Short has had a range of three bookshelf speakers: small, medium and large, named respectively some variation on 10, 20 and 30 themes. The £100 M-S 3.10 was a big hit back in 1989 (issue 78), while its 1992 successor, the 5.10 (issue 110), was slightly larger and pitched at

£120 — the result being that the 3.10 remained in production in parallel for a period. In 1994 the current *MS10* — the same size as the 5.10 but carrying a £130 price tag — was introduced, placing the company still further away from continuing demand for something at around £100 a pair.

Hence presumably the *MS05*, a down-sizing operation that lets Mordaunt-Short offer it for sale at £110. But is the *MS05* a real hi-fi speaker, or is it too small to be taken seriously? That is the question that this review must address.

Constructional details follow established Mordaunt-Short practice by employing a moulded plastic baffle which incorporates the main driver frame for maximum structural integrity. The remainder of the box is mostly 11mm chipboard, and contains a fair amount of damping. The plastic baffle/driver assembly is securely bolted to a generous area sub-baffle made from 12mm MDF; the tweeter fixing is also tight but appears a bit feeble mechanically.

The main driver has a small 83mm plastic cone driven from a decently sized magnet. The twin ports are tiny, while the 14mm diaphragm tweeter resembles the popular Audax unit used back in the 3.10. The very simple hardwired crossover uses tag driver connections. A neat moulded frame grille offers little impediment.

Sound Quality

Although the lack of bass was obvious enough and served to knock a few marks from the *MS05*'s score, the panel generally felt that the *05*'s strengths were fair compensation for its weaknesses, and placed it well up the ranking order — a very creditable result for the least expensive in the group by a significant margin.

The corollary of the lack of bass weight is of course a refreshing freedom from bass boom,



which several individuals identified as a positive characteristic. There were reservations too over the slightly aggressive qualities of the forward upper midband and rather bright treble, but these same factors help impart some bite, vigour and drama to the proceedings, and project the sound out of the boxes.

Aside from the truncated bass the overall balance is rather good, both overall and in a degree of smoothness that's unusual among budget speakers. It's not the fastest design around, and some time-smear is evident. The lightweight character leaves the sound lacking in body and drive, but the harmonic relationships remain unusually coherent, so the net result is both entertaining and communicative — which is, after all, what it should all be about.

Conclusion

The *05* comes as a surprise — its character is quite a long way from the Mordaunt-Short stereotype, and is considerably more up-front and punchy than its closest sibling, the *MS10*. The small size leads to bass constraints which many will find unacceptable, while the

VERDICT

- ▲ **Lively and coherent, with good out-of-the-box vocal projection**
- ▼ **A very lightweight speaker, lacking in gumption and drive; can sound aggressive**

SOUND ★★★★★

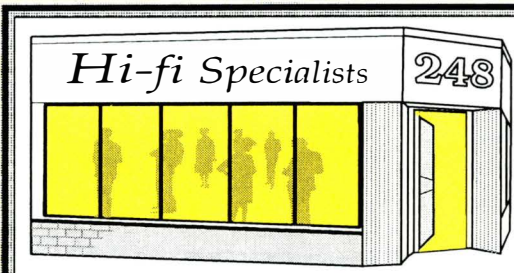
VALUE ★★★★★

PRICE £110

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

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aggressive tendencies will not be to every taste either. But the coherence is more than sufficient compensation, especially in smaller rooms, and the *05* clearly warrants a Recommended swingtag.



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TANNOY 631

This £150 baby of the current Tannoy range shares the same proportions and shape as its bigger brothers, but with everything scaled down about fifty percent. It's the natural successor to the 603 models (tested in original and *MkII* versions in issues 102 and 130 respectively), showing more than a passing resemblance in drive units and built into a similarly sized enclosure but now based on the new Profile irregular plan shape.

Being scaled down, it doesn't use the same top and bottom mouldings as the larger Profile models, so the internal dimensions and modes will be different here, though the irregular shape should still distribute these across a broader range of frequencies than a conventional rectangular box. A relative freedom from boxy

effects has been a hallmark of many recent Tannoy models, tending to vindicate the thinking behind the unorthodox construction method.

However, the baby 603 always suffered from one practical limitation which rather spoiled the end result: its bass alignment was optimised for free space siting. This actually makes quite a lot of sense in terms of the acoustic performance, minimising wall-reflection colorations and promoting stereo image precision, but overlooks the fact that such a tiny speaker looks pretty daft, not to mention vulnerable, when perched on stands well out from the wall.

The good news is that the 613 has been designed with close-to-wall siting much more in mind, not only in bass alignment but in a slightly wider effective front panel, which reduces wall-reflection effects somewhat (though by no means completely).

Weighing just 3kg, this is a pretty light affair, constructed in the current Tannoy idiom by sandwiching sides, front and back (made from folded wrap of 15mm vinyl woodprint chipboard) between plastic top and base mouldings. This approach lends itself to creating an enclosure with irregular and non-parallel faces, which helps to spread the range of frequencies of the internal modes and break up reflections, both of which are significant sources of coloration.

The base moulding is cleverly arranged to accommodate a bi-wire terminal block with a captive link for conventional two-wire connection, and also incorporates mounting lugs for the matching stand, and internal trays for mounting and securing the components of the crossover, which on this occasion is very simple indeed. The down side is that it's not easy to make a good mechanical connection with stands other than Tannoy's own.

My one real gripe is that the main driver wasn't very well secured by the tacky little machinehead woodscrews, despite six being used. My suspicion is that someone had inadvertently over-tightened them, opening up the rather coarse grain of the fairly thin chipboard beneath the frame. By contrast the tweeter screws were tight. The main driver here has an 85mm plastic cone, fair size magnet and pressed frame, while the tweeter has a big magnet and uses a 23mm metal dome under a removable mesh cover. The enclosure is port

loaded at the rear and lightly damped internally, while a neat looking grille is set on short stalks to minimise baffle standing waves.

Sound Quality

The panel recognised a lovely compromise here and, with just one dissenter, placed the 631 at the top of their lists. Though little on the bright side for some tastes perhaps, the evenness of the balance is a particular strength, minimising coloration and ensuring even and natural tonal perspectives. There's also a welcome freedom from boxiness and only modest time-smear.

The speaker sounds happy and consistent whether played loud or soft, and if the size does inevitably and significantly constrain the amount of power and drive on offer, the bass keeps the faith pretty well, sounding lively and pretty well timed. Dynamics, headroom and dynamic range could all be stronger, but are still good for the type and size, so the net result is open, clear and essentially communicative.

Conclusion

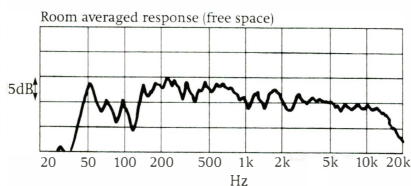
Representing a quite dramatic improvement

over its 603 and 603 *MkII* predecessors in terms of balance and smoothness, as well as alignment better suited to close-to-wall siting, this new Tannoy 631 is clearly now one of the very best budget miniatures

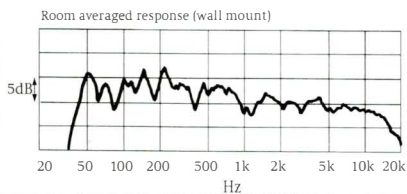


LAB REPORT

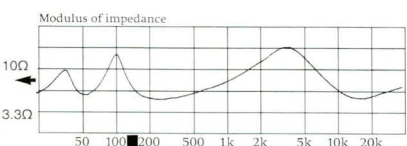
Sensitivity is on the low side, especially as the amplifier load is more demanding than some of the competition, but the plus is bass extension that hangs in right down to 50Hz without significant loss provided the speakers are close to a friendly wall. The fine lateral distribution of the Profile cabinet means that experimentation with positioning is likely to prove well worthwhile. The response is unusually flat and represents a dramatic improvement over the 603 *MkII* (issue 130), not only in smoothness but also in that the downward gradient between midband and treble is much less extreme than before.



Without wall assistance output is midbass light, but very well controlled throughout the rest of the band.



Close to wall siting fills in the midbass at the expense of midband smoothness, but balance is well controlled and even.



Port is tuned to 55Hz. Load drops below 6 Ohms here and there, but shouldn't pose a real amplifier any problems.

LOUDSPEAKERS

The proof of the speaker is in the listening

Gathering together eight models priced between £100 and £250, one might expect uniformity to be the order of the day. The price constraints do inevitably limit the engineering content available, and there's undoubtedly a common denominator pattern to the choices which have been adopted. But the differences between the models are still surprisingly obvious, confirming yet again that when it comes to loudspeaker design, the final mix is still more important than the ingredients.

Only the JPW has real wood over the outside (and inside) of its box, and only the JPW uses a cast-frame main driver. This long established model ably demonstrates how much can be achieved at modest cost using traditional materials and engineering, even if the bolts could have been tighter.

More recent designs, like the Mordaunt-Short MS05, Tannoy 631 and Mission 731 make creative use of plastic moulding techniques, often (but not always) to very good effect. The MS05 maximises mechanical strength by integrating the main dri-



Understanding the lab tests

Every speaker has a distinct frequency balance (or response), which tells a lot 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.

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

A perfectly flat straight line is not expected, since the main room modes create unavoidable ups and downs at the low frequency end. But the trace should ideally be as flat and smooth as possible. Gentle variations are preferable to sharp discontinuities, as prominences tend to be more irritating than dips, and a gentle high frequency roll-off usually sounds perfectly acceptable compared to a bright treble.

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

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

The listening day

The panelists had been warned in advance that we were listening to speakers at the budget end of the market this month. This was to psychologically prepare them for the unavoidable cost-related performance limitations.

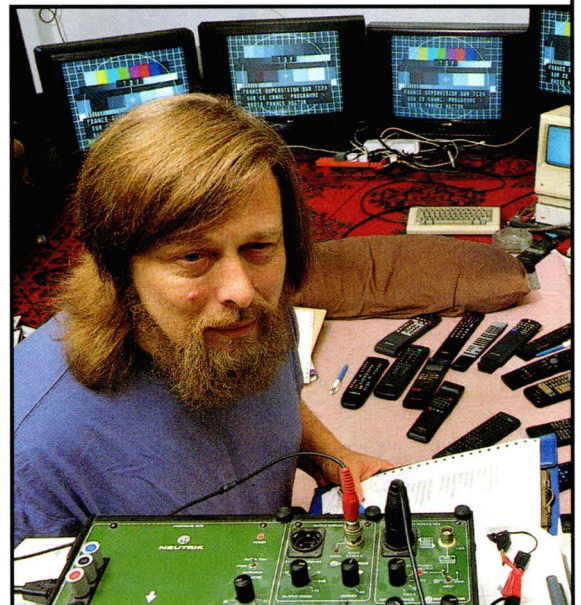
It must be said that the day was more instructively interesting than enjoyably entertaining. Nonetheless, we were quite surprised by the wide variation between models with quite similar outline specifications.

As usual, the panelists often disagreed, largely because each has different priorities and prejudices (they were deliberately chosen with that in mind). This time, however, a reasonably clear ranking order of the speakers came out in the analysis, which actually correlated very well with my hands-on work.

The blind panel tests remain a crucial cornerstone to keep my own prejudices in check. But they do have real limitations of their own. The main problem is the way that the characteristics of each speaker influence the judging of the next one, as was the case with the MA200 this time. That factor alone makes further extensive hands-on comparisons

almost mandatory.

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



Best of the rest

A quick scan through our directory reveals that a large number of Best Buy and Recommended models in the £150-£300 price band have accumulated over the past several years.

Ten carry the Best Buy accolade. Budget miniatures include the cheap'n'cheerful Allison *AL100* (£100) and *Celestion 1* (£109), the classic real-wood JPW *Sonata* (£115), and the smooth and polished *Celestion 3* (£130 — shown below). The rather larger JPW *P1V* (£135) is the vinyl-finished version of the *P1* model reviewed on page 50 of this issue.

Moving up the price ladder, the £180



ver with the front panel, while Mission ingeniously mounts the main driver onto the rear in order to decouple the tweeter from its vibrations. Tannoy (and to a lesser extent Mission) introduce some irregularity into the traditional cuboid shape in order to de-focus standing waves and reflections within the cabinet itself.

However, the relationship between cause, effect and the final net result is so complex that it's impossible to ascribe general rules. Each design must be examined on its own merits, and most attempts to ascribe effect to cause are fraught with risks.

There is usually at least some relationship between size of box and quantity of bass, and the arrival of tiny sub-miniatures like the Mordaunt-Short *MS05* and the Monitor Audio *MA200* set me examining these parameters pretty closely.

Overseas markets are always surprised by the British enthusiasm for small 7-10 litre miniatures, tending to favour much larger designs. But my own experience of auditioning and taking in-room measurements of several hundred different models of all shapes and sizes over the past several years tends to support the case for the miniature as a very practical proposition, whether in the form of budget best sellers or upmarket classics like the BBC *LS3/5A* and Acoustic Energy *AE1*.

Normally using a 90mm cone and port-loading, such designs can be aligned for close-to-wall or free-space siting and tailored to give a response that's essentially flat down to 50Hz (only an octave and a bit above the limit of audibility) when

Mordaunt-Short *MS20* and £190 Tannoy *632* are two fine examples of the art of compromise: the M-S offers superior mid-band neutrality, while the Tannoy gives extra freedom from boxiness and low bass weight. The £200 Philips *Legend II* is a smart and lively design with a strikingly shaped hi-tech front baffle. The £230 Rogers *LS2a/2* is richer and more laid-back than most of the alternatives, with classically natural voice reproduction at a very realistic price. The Royd *Minstrel* is a highly imaginative and agile sounding floorstander, its price (£229 to £289, depending on finish) being all the more competitive since stands are not needed.

A string of Recommended models include the following miniatures: B&W *2001* (£120), GLL *Maxim* (£120), Heybrook *Prima* (£130), Mordaunt-Short *MS10* (£130), plus the Mission *760i* (£130) and *760iSE* (£150). The last two, if still available, are likely to be in short supply by the time you read this.

Larger bookshelf models include the Allison *AL-110* (£220), B&W *600i* (£180), Harman Kardon *LS0200* (£150), Heybrook *Solo* (£190), Infinity *Reference 10* (£200), JPW *AP2*, *AP3* and

used stereophonically in a real room. It's nicer to go right down to 20Hz, but much more difficult to achieve successfully, at least while avoiding over-enthusiasm in the 50-100Hz midbass range.

The miniature has advantages too, in having much less cabinet to cause coloration, a small baffle to aid dispersion, and a small driver to work well at the top of its operating range. The only real disadvantage is limited power handling, sensitivity and loudness capability.

However, reducing the enclosure size still further is not advisable. The *MS05* and *MA200* both sound quite obviously smaller than their 7 litre counterparts, and this is confirmed in the response measurements. Both start tailing off quite markedly below 100Hz, even with close-to-wall reinforcement. The Mission *731* is also rather bass shy here, unlike its *760i* predecessor.

It's my (unproven) contention that the bass performance of a pair of speakers is heavily modified by the room, not only in terms of reflections but also in the way that the excitation of the main room modes provides reinforcement at specific low frequencies which correspond to the main room dimensions. The shortest of these (invariably floor-to-ceiling) typically provides the 50-60Hz boost which enables the standard miniature to work so well. The new sub-miniatures also need help in the midbass region, so I reckon a room measuring 7ft x 8ft x 9ft might be just about ideal if you want to use a pair of sub-miniature speakers without hearing the bass limitations inherent in such a minute speaker system.

P1V (£180, £225, £155), Monitor Audio *MA201* (£250), and Wharfedale *425* (£200).

Finally, there are several more unusual options like the dome-shaped AV-oriented Canon *S-30* and *S-50* (£180, £250), as well as speakers using a variety of non-tree enclosures, including the concrete Faraday *FS1* (£225) and the tiny metal-cased Zyp *A1* (£199).

Best Buys and Recommendations

This batch turned out to be a pretty mixed bag, perhaps reflecting how tight the engineering constraints become when designing a budget speaker in an economy dominated by the vice-like grip of the 'feel bad' factor. That said, there were no real failures in this group, any of which could certainly turn in a very capable performance under the right circumstances.

However, the *raison d'être* of these group reviews is to sort the plums from the prunes, and half the batch came out wearing some sort of rosette. Two even won a handsome Best Buy tag.

According to the files scattered across my hard disk, I've reviewed well over a dozen Tannoy models during the past five years: many of these have done very well. The big ones can be truly stupendous, but I've always had difficulties with the smallest models in the range, to the point where I really started to wonder whether Tannoy was able to produce good miniatures.

The new £150 *631* renders such a notion untenable. An obvious Best Buy, it's a real little cutie, delicately balanced across the frequency range right through the span of more nebulous but no less important music-related parameters. Frankly, I doubt that there's a better budget miniature speaker around right now.

The £170 JPW *P1* probably pre-dates my hard disk by a decade or more. The substantial wood veneered box, cast frame driver and bolt fixing stack up to demand a Best Buy rating, almost irrespective of sound quality. Fortunately, the *P1* does also sound pretty good, even though its age is perhaps beginning to show.

Recommendation implies slight misgivings, and in the £110 Mordaunt-Short *MS05*'s case they're to do with the bass, or rather the lack thereof, which in my opinion renders it suitable only for small rooms. The major plus of the *MS05* is the very fine vocal delivery, not unlike the same company's *CS1* Home Cinema satellite speaker. This effect is partly achieved by subtle response shaping.

The other Recommended model is the £160 GLL *Mezzo*. While not the prettiest or most solid box around, this speaker is a decent size for the price. Its inclusion is mainly due to an exceptional mid-range, with the provision that the rather odd bass and dull treble could well make a good match with budget sources and amps.



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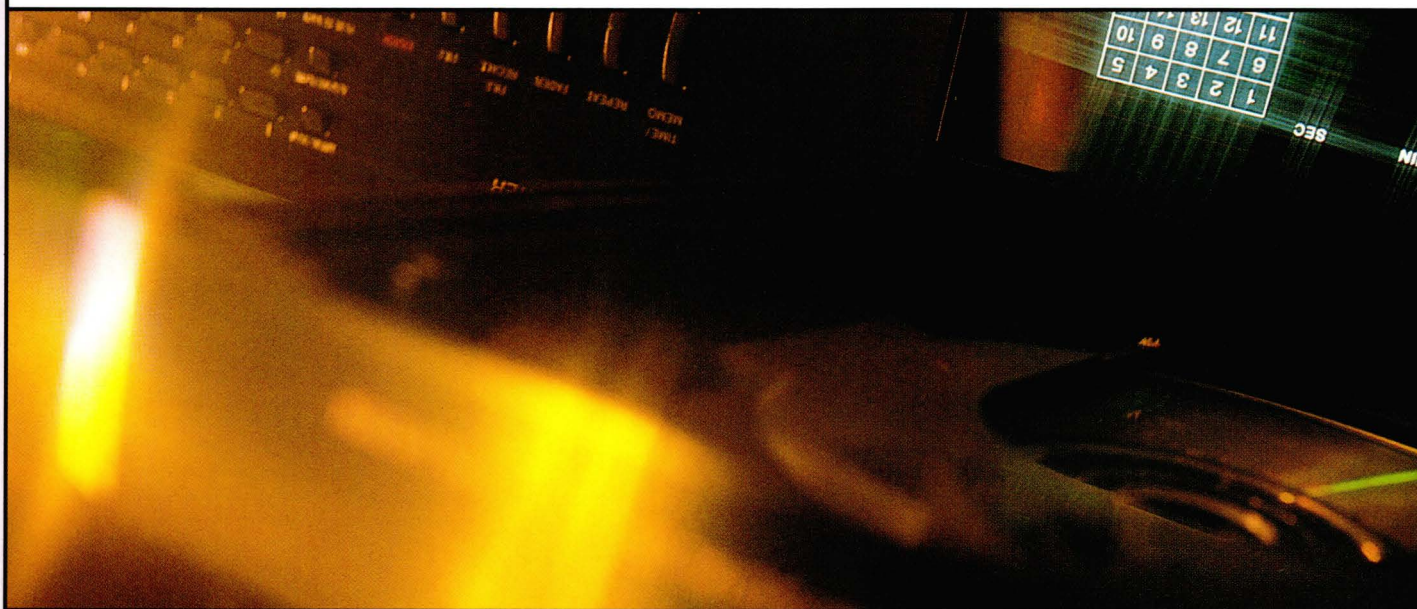
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ON TEST

CD players



Paul Miller measures the real value of eight 'neither cheap nor expensive' CD players.

Manufacturers only have themselves to blame of course, but when the likes of Sony, Pioneer and Marantz produce loss-leading wonders like the *CDP-715E*, *PD-S703* and *CD-63* – to name but three – life gets particularly tough for all those £300+ CD players sitting on the top shelf. Nevertheless, this has not prevented all the major names from having a stab at the more difficult and competitive area of the CD scene.

So, what should you expect for your £300-£400? Features are usually provided by the truckload, enhancing the player's operation without compromising its sound quality. Full remote control, direct track access, various programming and repeat modes are typically joined by index search, intro scan, peak search, CD/tape editing options, fader, auto-cueing and random play operations.

The most comprehensively-equipped players will even offer a non-volatile custom program facility, enabling favourite selections of tracks to be stored and recognised the moment the CD is loaded. Digital outputs will facilitate future

upgrades, while the option of both fixed and variable analogue outputs allows the player to be connected directly to a power amplifier instead of an intermediate pre-amp or all-in-one integrated amp.

This cuts down on superfluous boxes and unnecessary circuitry which, in many instances, simply gets in the way of the music. If a player is equipped with a digital volume control, do check that it hasn't defaulted to maximum output before loading-up a CD! Enhanced build and component quality are further rewards for spending that little extra on your new player. Plastic moulded chassis and fascia are replaced by chunky alloy casework.

In terms of internal technology, there are still myriad ideas being pursued by different manufacturers. This is particularly the case in the realm of Digital Signal Processing, where data manipulation (rather than straightforward oversampling and conversion) is fast becoming the order of the day.

Naturally, some players still use conventional multi-bit converters to translate the CD's digital data into recognisable music. This technique relies on converting entire 16-bit 'words' of information at a time, yielding a wide dynamic range at the expense of increased distortion.

Other players rely on one of various bit-

stream converters which reduce these unwieldy 16-bit digital words into smaller packets of 4-bits or less. Smaller chunks of data are processed at an appropriately higher speed, avoiding the uneven steps and distortions of a multi-bit converter while suffering extra noise, both in and out of the audio band.

However, all CD equipment has been built in relation to certain agreed standards. For example, every CD player will handle both the standard 12cm and more elusive 5cm silver discs, offer the same basic track skip, and pause and stop facilities. It can also require the services of a line input on your amplifier.

Unless you have a death wish, never connect a CD player to an input marked 'phono' or 'disc' on your amp. Use any line level connection such as aux, tuner, tape or one marked specifically for CD.

The cast list

DENON DCD-1015	£350
HARMAN KARDON HD7425	£350
KENWOOD DP-7060	£380
MARANTZ CD-63SE	£350
ONKYO DX-750	£350
ROTEL RCD-965BX DISCRETE	£375
SONY CDP-915E	£300
YAMAHA CDX-880	£340

DENON DCD-1015



Only two months ago I was applauding Denon's drift from marketing fantasy to science fact, but that has been put firmly on hold with the advent of the *DCD-1015* and its two-pronged Alpha processor. But perhaps that's a little harsh — the player itself is a model of sobriety. Its familiar white fluorescent display is flanked by the standard transport functions and a direct access keypad. Peripheral widgets, including peak-level and index searching, a digital volume control, tape edit and a novel pitch control (offering a $\pm 12\%$ variation) are demoted to the remote. All good stuff which contrasts with Denon's dubious technical claims.

For starters its Real 20-bit 2-DAC Super Linear Converter amounts to the same pair of 18-bit PCM-61P DACs found in all its cheaper players. Meanwhile the new Alpha DSP chip sits ahead of the usual 8x digital filter, mixing in an extra four-bits of interpolated data according to the rate-of-change of the CD's existing 16-bit LSBs (Least Significant Bits). By introducing 16 intermediate levels between each existing LSB step, the data range is theoretically extended to 20 bits, reducing the noise and distortion accompanying quiet passages. Alpha processing also responds to transient signals in a fashion reminiscent of Pioneer's Legato Link, reducing any 'ringing' at the expense of treble extension.

Sound Quality

Before the Alpha-equipped *DCD-1015*, many of Denon's players received a very similar appraisal from successive blind tests. Cast in this light, the *DCD-1015* represents a distinct refinement on the dynamic, jolly-sounding but often uncouth balance of those earlier offerings.

Though the *DCD-1015* sounds beefy and expensive, its music still lacks the spaciousness

of the Onkyo and the openness and purity of the Sony in this test. But nor is it as bright as the Kenwood, maintaining the strident dynamics of Robert Cray's guitar without tearing our ears off in the process. Indeed this player proved most adept at manhandling ballsy blues, ripping out bags of detail despite slapping it all into a surprisingly compact soundstage.

The dynamics of Bach's *St Matthew Passion* were rendered intact even though the acoustic of the cathedral was almost claustrophobic at times. "We're in the balcony rather than the stalls", remarked one listener, "looking down on music which lacks immediacy but is impressively composed". The Denon suffers a loss of extreme highs, a shortfall that's obvious in a loss of brilliance but also an increase in mugginess with warm-sounding recordings.

Conclusion

This is a fearsome and stocky little player but one that gives the impression of slamming up against self-imposed end-stops. "It's almost as if", concluded one listener, "there's a big and brilliant-sounding player trying to battle its way out". Whether this is the 'sound' of over-engineering or a side-effect of Alpha processing is a moot point — for whatever reason the Denon *DCD-1015* demands a bright and ebullient system before giving of its very best.

VERDICT

- ▲ **Security and confidence of rhythm. Makes the best of busy rock recordings.**
- ▼ **Lacks atmosphere, fails to retrieve high treble detail.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £350

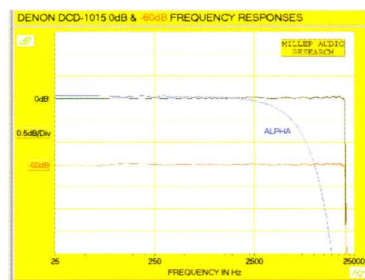
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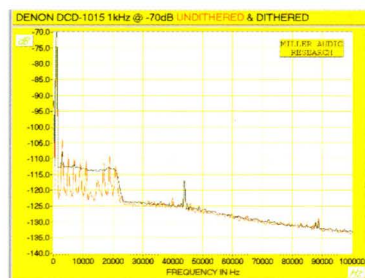
The *DCD-1015* uses the same NPC 8x oversampling filter (the SM5841) and 18-bit DACs from Burr Brown (PCM-61P) as the *DCD-825*, *DCD-615*, *DCD-695* and *DCD-595* — refer back to issues 124, 128, 137 and 139 for examples and compare the -70dB plots. These are not, by any stretch, 20-bit converters.

Despite Denon's claims for Alpha processing, distortion is higher in the upper 40dB of its dynamic range — typically 0.1 instead of 0.03 per cent at -30dB. This, along with the rippled stopband images, is graphically revealed by the new 3D plots (page 76).

Distortion below -60dB is lower, though neither the wide 109-110dB S/N ratio nor the typically 'multi-bit' +13dB noise modulation have improved further. The droopy treble (-6.6kHz at 20kHz) is unusual as it only occurs with specific, digitally encoded impulses.



Flat responses are indicative of 'real music'; certain digital impulses trigger a -6.6dB drop at 20kHz from the Alpha processor.



Alpha or not, this is entirely typical of earlier Denon players. Indeed the 3rd harmonic is slightly higher than usual.

HARMAN KARDON HD7425



This is the cheapest of Harman's players to feature its proprietary Realtime Linear Smoothing (RLS) technology, though, from its uncluttered exterior, you'd never distinguish it from the non-RLS *HD7325* and *HD7225*. All these players share the same matt black fascia with its curved display area and matching bank of program, track skip, search and repeat facilities.

In addition, the *HD7425* includes a slim remote control that adds direct track access, index location and intro scan options to the brew. But the interesting stuff happens under the covers, where HK has pared its RLS concept to the bone.

Usually RLS has a pair of DACs per channel. One provides a reference for both the direction and rate of change of samples emerging from the second, this being delayed by one oversampling period. After conversion a comparator circuit will interpolate (join the dots) between successive samples, giving a smoother waveform that requires little or no additional filtering. And gentler filters mean a better sound. That's the theory anyway!

Sound Quality

Something of a spotty oik among more refined and mature-sounding players, the *HD7425* was admonished by our panel who suggested "it needs to get upstairs and tidy its room". In truth there would be little about this player that could be described as genuinely abrasive or brash if only the sound of vocals weren't so sibilant and the strings weren't quite so messy.

Typically, the *HD7425* seems both tonally and structurally untidy, altering both the natural colour and tempo of key instruments within a mix. The player is never short on welly but doesn't have the speed and lucidity that might contribute to a cleaner and warmer sound.

The *HD7425* has an unpretentious sound which cuts to the point but remains very rough about the edges. The baroque violins from Bach's *St Matthew Passion* sounded uncommonly wiry for example. "Bach would never have been so sloppy" remarked one listener, likening the tunes to "incidental music from an episode of *Morse*". The HK also succeeded in transforming Robert Cray into Luther Vandross, his slow blues melting into a syrupy soul ballad. "You can almost imagine stiletto-heeled girls throwing items of underwear onto the stage" suggested one listener before he was put out in the rain to cool down.

Conclusion

Sadly, by attempting to maintain the virtues of both RLS conversion technology and all-discrete analogue electronics at an impossible price, the *HD7425* emerges as an unfortunate example of having your cake and wishing to eat it as well. Laudable though Harman's goals are, they are perhaps best left to costlier players where the technology may be executed in the proper fashion. We need look no further than the more expensive *HD7725* (£800, reviewed in issue 124) for a decent demonstration of RLS in action.

The *HD7425*,

by contrast, is neither a good exponent of RLS nor an especially competitive example of a £300-£400 CD player. Perhaps the £450 *HD7525* will prove a better representative of Harman's RLS system.

VERDICT

- ▲ **Brimming over with adolescent enthusiasm. Needs a touch of Oxy-10 to clean-up its complexion.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £350

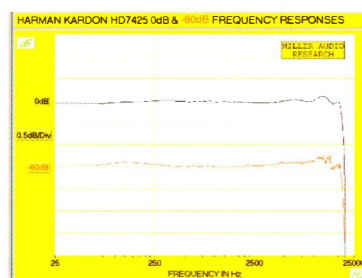
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LAB REPORT

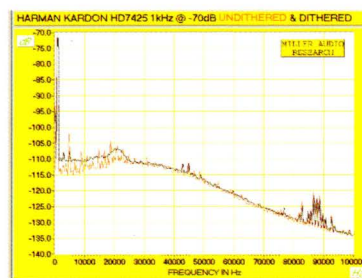
We know how RLS should work but here, in the *HD7425*, HK has cut costs by using two instead of four DACs and multiplexing the signal between them! This gives an interchannel phase error at high frequencies while forcing HK to halve the oversampling rate to 4x. Describing this as a 'digital filter' is generous — just look at those huge stopband images on the 3D plots!

Mismatches in the respective linearity of both the reference and delayed DACs (PCM61Ps are used) increases the overall distortion while reducing the player's resolution. THD, for example, increases from 0.003 to 0.05 per cent at 0dB while its low-level linearity completely falls apart below -90dB or so.

The 100-104dB S/N ratio is acceptable, despite being short of the 107dB achieved by the *HD7725* — the 'real' version of RLS reviewed in issue 124.



Response 'wobbles' are due to the integrated 4x oversampling filter, though RLS further disrupts low-level response.



Dithering (in black) removes distortion but can't eliminate all the irregularities caused by mis-matches in the two 18-bit DACs.



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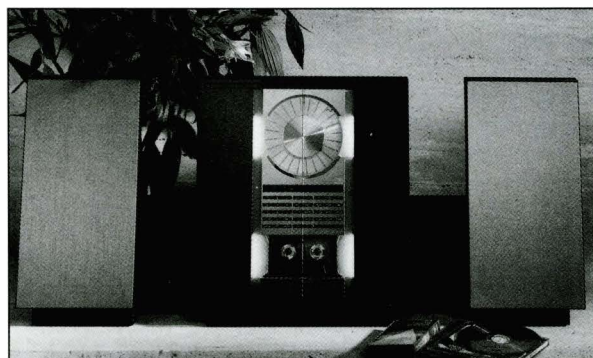
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KENWOOD DP-7060



Not to be outdone by the likes of Denon's Alpha processing, Yamaha's PRO-bit, Onkyo's FPCS and Pioneer's Legato Link, Kenwood has dreamt-up its own DSP ditty. This latest widget flies under the title of DRIVE and takes pride of place in Kenwood's flagship, the chunky DP-7060.

You could be forgiven for thinking that DRIVE has some connection with the player's transport, but in fact it's an additional processing stage sitting between NPC's SM5843 8x oversampling filter and Philips' DAC7 converter. DRIVE stands for Dynamic Resolution Intensive Vector Enhancement, a contrived acronym for an adaptive low-pass digital filter whose cut-off frequency changes according to the nature of the signals passing through.

All CD players incorporate a fixed analogue low-pass filter to remove the ultrasonic rubbish contained within the step-like output of the digital-to-analogue converter. DRIVE performs much the same function but works in the digital domain on an adaptive basis, theoretically reducing noise and distortion en route.

But none of this need bother the average user, who is likely to be more than content with the generous range of track and index location, programming, peak search, multi-disc edit and up/down volume facilities. The DP-7060 is also the most substantially built player in our survey, boasting a sealed CD transport mechanism and oodles of top-notch chips.

Sound Quality

Expressive and explicit, the DP-7060 certainly makes its presence felt with an informative, lyrical and detailed sound, albeit one that's a little on the light and bright side of neutral. Strong vocals are especially susceptible to the DRIVE treatment, with the likes of Robert Cray sounding a little too insistent.

Eddi Reader also sounded harder than usual, though the highlighting of the fresh but slightly fizzy percussion was welcome on this occasion. In some cases this slightly relentless character, this emphasis of leading-edge detail, can make listening to the DP-7060 a little like hard work.

Otherwise it seemed ideally suited to the gentle atmosphere of Bach's *St Matthew Passion*, the male alto's voice clearly rising to the vaults of the cathedral and sparking off a marvellous sense of acoustic. The timbre of his voice, however, was not simply androgynous but was "bordering on the transsexual" according to one listener. Despite this hormonal tampering, both his voice and the accompanying strings were bristling with vibrant detail.

The DP-7060's superb separation of highly complex arrangements, its pristine clarity and sheer pizzazz proved so infectious that they succeeded in swaying the professional detachment of our listeners. Be warned, though, for the DP-7060 can sound fearsomely determined.

Conclusion

It's tricky to conclude whether the remarkably open and atmospheric sound of this player is due to the ministrations of its DRIVE circuitry or whether it's

simply due to a well-placed hint of brightness, clean though it is. Either way, the solidly engineered DP-7060 does sound unusually explicit and, clearly, will suit some systems rather more than others.

VERDICT

- ▲ **Very light-footed with plenty of life and bags of detail.**
- ▼ **Not a good all-rounder. Will appear bright in lightweight systems.**

SOUND ★★★★★

VALUE ★★★★★

PRICE £380

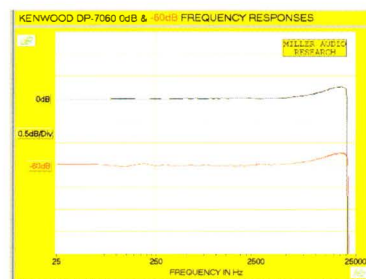
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LAB REPORT

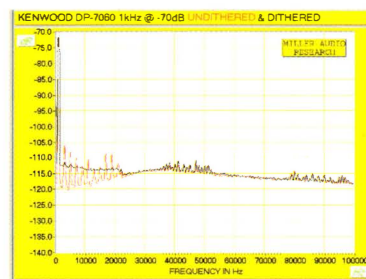
The influence of DRIVE is best revealed in the 7060's exceptional treble distortion figures — lower than those of virtually any other CD player we've tested. Certainly there have been no single-DAC7 models capable of pushing THD down to just 0.0013 per cent (0dB/20kHz) and 0.0056 per cent (-30dB/20kHz).

The colour 3D plots (page 76) confirm this, but the -30dB spectrum highlights the ingress of exceptionally non-musical sampling images. This is its one, potentially audible indiscretion. Otherwise the 106dB S/N ratio is state-of-the-art, even matching that of dual-differential DAC7 designs (issues 101 and 120).

Kenwood's digital volume control operates in accurate 1dB steps over a full 60dB dynamic range before dropping into a full mute of -130dB. The icing on the cake of a very well-specified CD player.



Broad treble boost (amounting to +0.3dB) is also likely to add to the player's slightly bright and squeaky-clean sound.



Good reduction of distortion with dithered signals. Stopband IMD is typical of Philips' SAA7350 noise-shaper at maximum clock.

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MARANTZ CD-63SE



No sooner had the ink dried on our reviews of the *CD-63* and *CD-53* (issues 137 and 139), than the first Special Edition models were announced by Marantz. Nevertheless this latest *CD-63* is an SE with a difference, for rather than upgrade the basic player with new op-amps, capacitors and other audiophilia, Marantz has concentrated on what are principally mechanical revisions.

Sure enough the mains transformer now features new OFC (Oxygen-Free Copper) windings but other key mods include new copper-plated screening for its proprietary HDAM output buffer, plus a thicker bottom plate and lateral brace to beef-up its chassis. Marantz has even cut a series of ventilation slits in the rear panel to reduce internal air turbulence caused by the spinning CD.

This is not as daft as its sounds, for anything that upsets the smooth rotation of the disc, however minutely, inevitably puts extra strain on the laser pick-up, focus and tracking servos. This, in turn, can influence the player's sound.

Otherwise the *CD-63SE* is identical to the cheaper *CD-63*, offering exactly the same features — direct track access, programming, tape edit, repeat and random play. Although there is only one pair of output sockets, the volume level is adjustable via the remote.

Sound Quality

By way of contrast with the unadulterated *CD-63*, this SE version is a more characterful affair, a player whose music is driven along by an “effervescent but slightly one-note bass” and held aloft by a generous, euphonic but occasionally graceless mid and treble.

The male alto from Bach's *St Matthew Passion* sounded as if he was “singing from the throat rather than the chest”, reducing both his

projection and range. Indeed the *CD-63SE* has a habit of clamping-down on the most spontaneous vocal inflections, framing the performance with a dynamic window beyond which the player refuses to tread.

On the other hand the pace and impact of both Eddi Reader and Robert Cray seemed to waken the *CD-63SE* from its subjective slumber. In this instance, though it was still described as “somewhat charmless”, its robust and colourful soundstaging at least had our panel tapping its collective feet in appreciation.

In this regard the *CD-63SE* parallels the “heroic soundstaging” of the basic *CD-63*, even if, in more general terms, the player simply sounds as if it's trying too hard. As a result it can sound loud but reduced in scale, a tenacious performer that latches onto your speakers and refuses to let go.

Conclusion

While the panel was broadly neutral about the performance of Marantz's *CD-63SE* in our test system, they all recognised that its blend of undemanding dynamics, bouncy upper bass and generally forthright presentation would suit

systems equipped with modestly sized, bass-light speakers.

Compared to the cheaper *CD-63*, this SE version is far from uninvolved, yet it seems to represent more of a sideways shuffle than a distinct upgrade.

VERDICT

- ▲ Tailored sound likely to suit wide range of mid-priced systems.
- ▼ Lacks finesse; not likely to flourish with system upgrades.

SOUND ★★★★★

VALUE ★★★★★

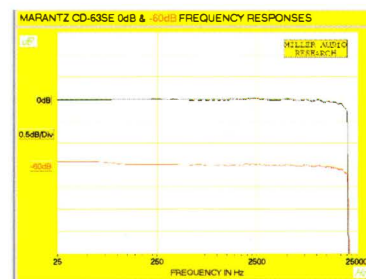
PRICE £350

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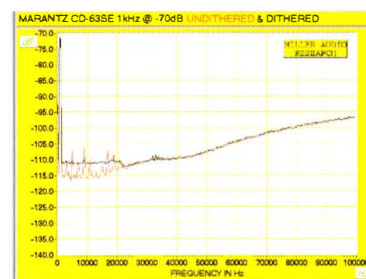
LAB REPORT

Despite the SE mods being aimed at the mechanical rather than electrical integrity of the *63* (issue 137), significant differences in the technical spec are still measurable. New averaging techniques let us penetrate the mild fog of quantisation noise produced by the *CD-63SE*'s noise-shapers, revealing distortion harmonics lying beneath.

This method suggests that the *CD-63SE* has lower levels of distortion though midrange and treble (typically 0.025-0.006 instead of 0.06-0.009 per cent at -30dB). Low-level linearity is also improved over the *CD-63* with maximum errors of just +0.0/-1.3dB over a full 100dB dynamic range. Additional shielding has widened the S/N ratio from 102dB to 103dB, a positive feature sadly outweighed by the anomalous increase in modulation noise from +6dB to +8dB.



Mild and inaudible rippling is caused by the integral 8x oversampling filter in NPC's SM5872 DAC.



Noise-shapers increase ultrasonic noise, but the dithered trace shows less distortion than was seen in the basic *CD-63*.

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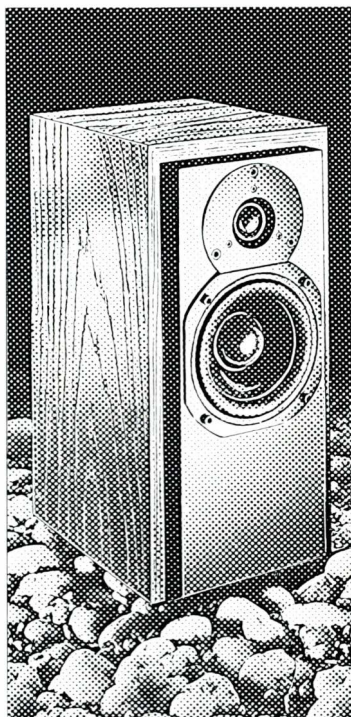
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ONKYO DX-750



For whatever reason, Onkyo is now running Denon a very close second in the hype handicap. Its claims for the *DX-750* are numerous, including a custom-designed digital filter, proprietary Fine Pulse Conversion System (FPCS), a complementary distortion canceller, an AccuPulse Quartz System and a Zero Shift Noise-shaper, all described as Onkyo innovations.

The *750* features a crystal oscillator damped with a blob of sorbothane-like rubber and a combination of NPC's SM5843 8x oversampling filter and an SM5861 bitstream DAC. This chip features a differential output, allowing common-mode noise and even-order distortions to be suppressed in the analogue stage.

Regardless of its origins, the upshot of FPCS is rather like a mild version of Pioneer's Legato Link, reducing the ringing associated with impulses and transient sounds at the expense of stopband noise (see lab report). Otherwise the *DX-750* is a feature-packed funhouse combining a centralised mechanism with program options that include a 36-track random access memory and a Disc File capable of storing favourite selections from up to 204 CDs.

There's even a motorised volume control feeding both its headphone socket and variable outputs. Indeed, only its unnecessary bulk detracts from what is otherwise a very modern and generously equipped player.

Sound Quality

Big, bold and ballsy, the *DX-750* is imbued with "spade loads of culture" according to our panel. To its credit, the player sounds delightfully uncluttered and utterly free of the dirty digits that afflict lesser players. Eddi Reader played right into its hands, sounding loose, free and

relaxed while creating an atmosphere whose exuberance only occasionally ran unchecked.

The drum and bass from Robert Cray's *Things You Do To Me* seemed to thunder into the room, reinforcing a bold wave of sound that swelled effortlessly without sounding too aggressive or forceful. It simply brought out the best in a track that's a little too matter-of-fact, exposing a distant rustle of percussive brushwork that's ordinarily buried under the m le.

Sure enough, the bass from Massive Attack's *Better Things* was a little flatulent at times, but with anything less than a coffin-sized subwoofer in tow, you're unlikely to notice. Otherwise the *DX-750* just sounds big, generous and dramatic — our listeners repeatedly expressed their delight at the natural but vivid string tone and sweet clarity of the voice from Bach's aria.

Conclusion

Subjectively sensational and wholeheartedly entertaining, the *DX-750* is capable of filling the room with a huge and expressive sound. The waffle from Onkyo's marketing department might sound like the sort of propaganda that so

often indicates a duff product, but the sound speaks volumes in the *DX-750*'s defence. My advice? Ignore the guff and dive into its feature-packed fascia while lapping-up its eccentric but utterly compelling brand of music-making.

VERDICT

- ▲ Exuberant, highly communicative player brimming with confidence.
- ▼ Can get carried away. FPCS gives unpredictable results in some systems.

SOUND ★★★★★

VALUE ★★★★★

PRICE £350

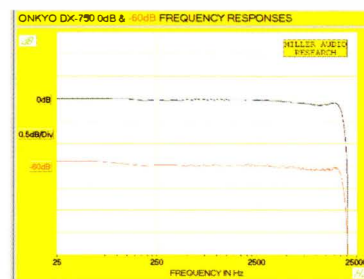
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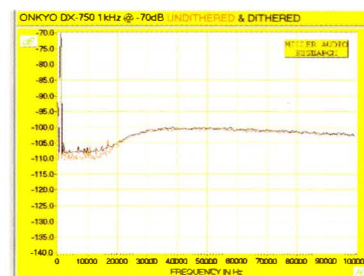
LAB REPORT

Onkyo's oversampling filter is especially interesting as this succeeds in removing all stopband images beyond 30kHz or so (see 3D plots, page 76-77) but tailors these digital 'reflections' between 30kHz and the audioband. This is a side-effect of its gentle roll-off, falling to -1.25dB at 20kHz, -11.7dB at 25kHz and -50dB at 31kHz, a mild slope that stimulates less ringing with impulsive or square wave signals. This is a halfway house between conventional FIR filters and the likes of Pioneer's Legato Link (issue 113).

Otherwise the *DX-750* behaves like a typical PWM model with low-ish distortion, average low-level linearity, a slightly disappointing 96dB S/N but a usefully low +1dB noise modulation. It's an unusual mix of results that contributes to an equally uncommon sound.



Response begins rolling off earlier than usual (above 17kHz) though the rate of roll-off is gentler.



Neither the player's dynamic range nor the re-distribution of ultrasonic noise are especially impressive.

ROTEL RCD-965BX DISCRETE



This page was originally reserved for Rotel's *RCD-970BX*, a player so new that none were shipped by the time our deadline arrived. The *RCD-965BX Discrete* stepped smartly into the breach, having escaped the tender mercies of *Hi-Fi Choice* until now. But who could have forgotten the original *RCD-965BX* (issue 100), an award-winning second-generation bitstream player that made full and glorious use of Philips' SAA7323 DAC. Ah, those were the days...

The *RCD-965BX Discrete* is destined to keep an old favourite ticking over till the new cavalry arrives. This ruse is achieved by replacing Signetics op-amps with an entirely discrete and fully complementary analogue output stage (it is a popular misconception that op-amps are always integrated circuits).

This discrete op-amp is built onto an additional circuit board, is fed from its own series-regulated supply and is joined by a surfeit of Rotel's favourite BGF decoupling capacitors. Otherwise the solid build of the player and basic range of track access, program, repeat and index skip facilities remain quite unchanged. Indeed, this must be one of the very last players still using Philips' CDM4 transport mechanism.

Sound Quality

Quite how Rotel has achieved such a feat is uncertain, yet the Discrete version of the *965BX* is one of those rare CD players capable of re-mixing the music spinning under its bonnet. Like the original *965BX*, it possesses a strong and well-developed bass but is perhaps a little warmer and less well controlled. "Bass, bass all over place" remarked the panel as Massive Attack's *Protection* set the glass panels in my listening room rattling in sympathy.

"Where the Dickens have the strings gone?"

queried one listener in response to the general stringlessness of Bach's *St Matthew Passion*. In truth he was more pointed than this, drawing attention to the player's bizarre sense of priorities which placed vocalists — and organs, curiously enough — centre stage while the accompanying musicians would slink off for a crafty tea break.

So vocals can sound very articulate indeed, but this is often at the expense of the music's balance and integration — two particularly potent features of the original *RCD-965BX*. Eddi Reader's CD, for example, was likened to *Anchorage* by Michelle Shocked as her vocals adopted a "country twang" and simultaneously thrust her guitarist back into the mix. Neither were they convinced that Robert Cray sounded himself on this occasion, his voice now tainted by a slightly pinched or nasal quality.

Conclusion

Tampering with an old favourite is a risky business — even with the best will in the world, it's very easy to sour the finest wine. Though the compassion and sparkling enthusiasm of the original *RCD-965BX* seems a vague memory,

the big and powerful sound of the Discrete is sufficiently eccentric to ensure it'll always make an impression. Importantly, this adulterated version is neither 'right' nor 'wrong', just very, very different.

VERDICT

- ▲ Refined player with powerful, boppy bass. A tried-and-tested formulation.
- ▼ Restructures music to give an unfamiliar ride through familiar CDs.

SOUND ★★★★★

VALUE ★★★★★

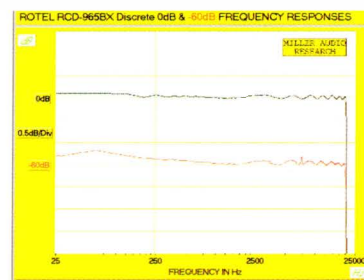
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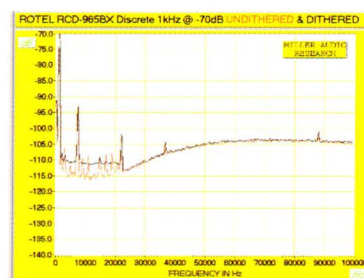
LAB REPORT

To the best of my knowledge, Rotel makes no special claims for the technical performance of its discrete analogue output stage. This is probably just as well. Indeed the bugs of the original *965BX* are unchecked, including both the circulating hum and the S/N ratio, which is compromised by about 5dB due to a CLV frame tone (7.35kHz) appearing -96dB below full output (35µV). This is the anomalous spike that appears on both the 1kHz/-70dB and 3D/-30dB plots.

Distortion is also fractionally higher at 0.004-0.03 per cent though, in its favour, the revised buffer stage has reduced the original output impedance from 208 Ohms to a useful 104 Ohms. Otherwise the extra inter-board wiring is far from ideal, while changes to the load on the power supply may also have exerted some unpredictable influence.



Rippling in both responses is due to the 4x oversampling filter, though the bass boost at low levels is peculiar to *RCD-965BX*.



Once again an unwanted 7.35kHz frame tone is clearly visible, though this model also suffers a 'leak' at 22.05kHz.

SONY CDP-915E

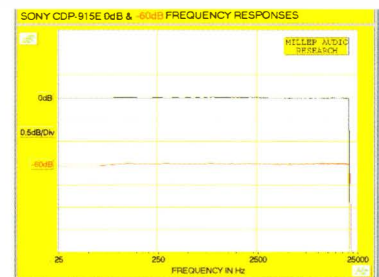


LAB REPORT

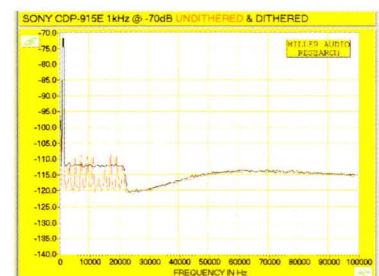
Bearing in mind that the *CDP-915E* is a refined version of the *CDP-715E* (Best Buy), the similarity in technical performances is no surprise. In practice the *CDP-915E* has a slightly flatter response (it's extremely flat as opposed to just very flat) while distortion, particularly at high frequencies, has been slightly reduced.

But whichever way you care to look at the *915E*, its spec is state-of-the-art. Distortion plummets to just 0.0016-0.014 per cent at -30dB; linearity errors are laughably small over the full 100dB range; RF noise emission is perhaps the lowest we've recorded. These figures plus the textbook 3D plots correlate perfectly with the player's clean and transparent sound.

I just wish Sony would stop trying to fool us with its bogus 122dB S/N ratio — a ruse exposed by the equally preposterous +20dB noise modulation!



Even under this precision measurement, Sony's player brings a whole new meaning to the term 'flat response'.



The combination of Sony's CXD2567 Score filter and CXD2562 bitstream DAC yields this textbook result (cf issue 137).

Our review of Sony's solid-gold Best Buy *CDP-715E* certainly whipped-up a storm of interest back in issue 137, leaving many to speculate whether it was just a flash-in-the-pan or a genuine New Dawn for this household name. Perhaps the *CDP-915E* will provide an answer for, at just £300, it may have been the cheapest player in our £300-£400 survey but it still succeeded in delivering a familiar, knockout punch.

On the face of it, the *CDP-915E* seems to be based on the *CDP-715E*, deploying precisely the same hierarchy of Score digital filter and Advanced Pulse bitstream DAC but with the benefit of extra widgets to gild the lily. Prime among these is Sony's Custom programming.

This includes a Custom File of favourite tracks from many hundreds of CD's, Custom Indexing which specifies points by time within a track and Level File which automatically reverts to a preferred track-by-track output level. This premium feature, together with the generous complement of direct track access, intro scan, peak search, auto-cueing, edit and fader options ensure Sony's £300 player sets the standard for convenience.

Sound Quality

Amassing a coherent set of notes on the sound of this Sony CD player proved rather difficult, mainly because our panel were too busy lapping-up the easy dynamics, the effortless flow and sheer naturalness of the music at hand. This player is singularly unconstrained and neutral, failing to emphasise any particular area of the musical spectrum. And if this description sounds at all familiar, just turn to page 63 of issue 137 for confirmation.

The silences that immediately precede the intermittent bursts of percussive from Massive Attack's *Better Things* almost sucked the air

from our lungs, a gasp of blackness shattered by the pure silver crack of cymbals. The 'envelope' of each note — the attack and release — sounded uncommonly pure, a feature that contributes to its pollution-free sound.

Rather like the Onkyo, the Sony was the only other player to clearly identify both lead and backing vocals from Eddi Reader's *Hello In There* while also exposing the unusually hard picking technique used by Cray on his guitar solos. Yet the *CDP-915* is perhaps not so adroitly poised as the *715E*, our listeners remarking upon a slightly hollow, almost vacuous quality, in its bass.

The rhythm line from Robert Cray's *Things You Do To Me* was certainly more difficult to pitch, a tight whoosh of air that could have done more to add weight and momentum to the track as a whole. A minor niggle, however, in the light of its generally fabulous performance.

Conclusion

Having already established that Sony's *CDP-915E* sets the pace for both features and facilities, the results from the lab report and the blind listening session would suggest that the player is similarly impervious to either technical or sonic criticism. Moreover its fiscal advantage

ensures that Sony also earns an extra brownie point in the value stakes. So even if the *CDP-915E* isn't quite worthy of a gold-plated Best Buy — unlike its cheaper brother — it warrants a sterling Best Buy nonetheless.

VERDICT

- ▲ Has an Appletising, Lifting quality with a fresh Tango treble. Features galore.
- ▼ Lacks an Iron-Bru bass. Is at least partially undermined by the *CDP-715E*.

SOUND ★★★★★

VALUE ★★★★★

PRICE £300

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YAMAHA CDX-880



Before dismissing Yamaha's *CDX-880* as being several buttons short of a full deck, look again and give its black alloy fascia a firm prod. Depending on where your finger lands you'll either end up with a dented digit or, hopefully, hit the bullseye and reveal a wide range of useful gadgets hidden away on a retractable rostrum.

Concealed widgets include direct track access and programming, peak and index search, synchronised CD/tape editing, repeat and random play. Meanwhile a handy little remote adds display dim (and auto display off), plus access to the motorised volume control.

As the *CDX-880* is the top-dog in Yamaha's range it comes complete with a little extra wacko technology to justify its existence. This is PRO-Bit processing, a DSP section that runs in sympathy with the 8x digital filter and I-PDM DACs of its new chip, called the YAC514.

PRO-Bit is not dissimilar to Denon's Alpha processing, providing a guesstimate of original data by looking at the rate of change and direction of existing 16-bit LSBs whose accuracy is then increased by 16x to a notional 20-bits. Reduced noise and distortion are the goals though, as ever, hearing is believing.

Sound Quality

This is a very composed and tidy-sounding player that refuses to have its feathers ruffled by rippling bass from the likes of Massive Attack's *Better Things*, though its bottom end is tight, dry and not very well extended. Instead, midband instruments and vocalists in particular are its forte, ensuring that Eddi Reader sounded clear and articulate but distanced from the backing vocalists and accompanying instruments.

"Trouble is," remarked one listener, "there's all this detail and clarity but very little heart and

soul to bind it together". This theme was expanded on by another listener who suggested that the *CDX-880* "has all the enthusiasm of someone reading from a telephone directory".

Robert Cray's *Things You Do To Me* lacked the impact and sheer grunt that it displayed through other players even though his voice and guitar were portrayed with a cerebral clarity and openness. The steely strings from *St Matthew Passion* were just as enlightening, highlighting the efficient delivery of the Yamaha.

The *CDX-880* proved especially adept at revealing the individual characters of vocalists, including the nasal, megaphone-like quality of Eddi Reader and the purity and honesty of the male alto from Bach's aria. Though full of detail these recordings were rendered in a strangely colourless fashion.

Conclusion

Despite playing strictly by the rules, Yamaha's flagship player falls just short of winning a recommendation. Technical excellence and the EC's electromagnetic compatibility regulations are obviously close to the company's corporate heart, despite neither being completely achieved in practice.

The upshot of all this is a solidly built, albeit unprepossessing CD player whose performance is orderly and careful yet lacks the vibrancy, resonance and colour that are necessary for true realism.

VERDICT

- ▲ **Plenty of uncluttered detail. Smooth and refined midrange.**
- ▼ **Lacks freedom, extension and compassion. Rather matter-of-fact.**

SOUND ★★★★★

VALUE ★★★★★

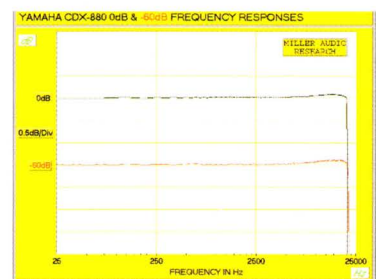
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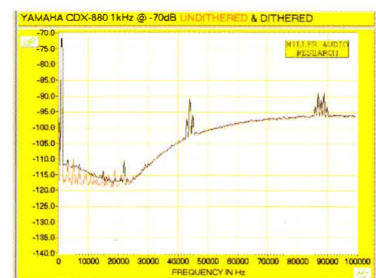
LAB REPORT

It is quite clear from an inspection of the *CDX-880* that Yamaha has tried very hard to comply with the latest EC directives for EMC. Ferrite rings are used to block RF on the main supply and those feeding both the fluorescent display and motorised volume control while substantial LC filtering has been added around the DAC itself. How ironic then that the *CDX-880* outputs higher levels of spurious ultrasonic and RF noise than any other player in this test — a factor, along with the stringent filtering, that may well explain its very mild and restrained sound quality.

Otherwise the player is built on a very secure bedrock of low distortion (typ 0.006-0.04 per cent at -30dB) and a low +3dB modulation noise, though the latter is partially offset by its just-about-16-bit 97dB S/N ratio. Real potential, but not yet realised.



A well-engineered digital filter ensures its response is free of rippling. The minute treble lift is inaudible.



Yamaha's PRO-Bit system may well be responsible for the non-linear increase in noise with dithered signals.

CD PLAYERS

Conclusions, best buys and recommendations

Having had their fill of the various DAC technologies, many Far Eastern designers have turned to proprietary DSP (Digital Signal Processing) in an effort to unveil something new for '95. Of the players tested, only the Rotel and Marantz use what might be called conventional filter/DAC technology. The others all use additional manipulation of the data, modifying the sound of their players. Whether this is dithering, the interpolation of extra bits, the integration of successive samples or adaptive low-pass filter technology, the true worth of these widgets has still to be proven.

For example, Harman's RLS system was so compromised in the *HD7425* that it scuppered the player's potential. At this price HK should have taken a more balanced approach. Despite adhering strictly to the rules, Yamaha also missed the success it deserves. But the *CDX-880* is a beautifully engineered product likely to give years of trouble-free service.

Rotel's long-standing *RCD-965BX* has already tempted many a sceptic onto the digital path, but the Discrete mod is unlikely to enjoy such impact. Marantz's SE version of the popular *CD-63* is another example where altering the equilibrium

of an existing design did not necessarily give an improvement. The *SE* could be just the ticket, but consider sticking with the *CD-63* and pocketing the £100 saving.

Both the new *DP-7060* from Kenwood and *DCD-1015* from Denon both earned Recommended tags but for very different reasons: you'd never confuse the bite and resolution of the Kenwood with the meatier sound of the Denon.

With respect to features or build there's little to choose between them, so the success of either player will boil down to system matching. The *DP-7060* sounds open, expressive but a little too acidic; the *DCD-1015* has an impressively solid bass but often sounds a little too rich, lush and humid for its own good.

But neither of these players was as impressive as our Best Buys. Onkyo's *DX-750* plays from the heart, its exuberant sound adhering to the passion rather than the technical building blocks of its music. Load up a CD and the *DX-750* will set your feet tapping while spreading a smile across your face.

By contrast, Sony's *CDP-915E* seems to get everything right without raising a glimmer of sweat in the process. It was likened to a cool Diet Coke against Onkyo's Coke. Both are the real thing, but the *CDP-915E* lacks excess sugar.

Tricks of the trade

You are not supposed to have noticed it, but an insidious trend is on the increase: boosted output levels. If all CD players adhered to the standard 2V output then direct A/B comparisons between different models could be conducted on a fair and level playing field. But in this test, only Sony and Yamaha hit the 2V nail squarely on the head!

Unfortunately it only needs one company to squeeze 2.1V or 2.2V from its player in order to confer some advantage on audition and, quite naturally, the competition gets wise and ups the ante

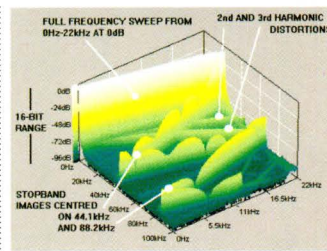
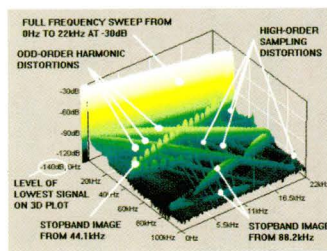
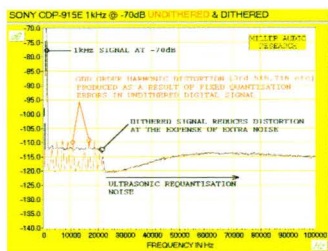
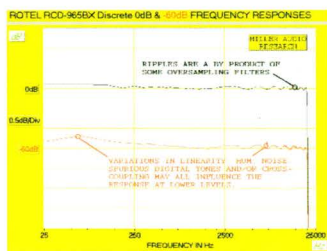
to 2.3V or more. Within this group of eight players, our tests revealed an audible +1.3dB range between the quietest (Sony) and loudest (Marantz) CD players. All else being equal, this advantage in level will often be perceived as a bigger and bolder sound in-store.

Hi-Fi Choice is the only magazine to conduct blind listening tests where the outputs of all players are normalised to a fixed level. As a result we are able to compare genuine rather than artificial differences between players, a factor that ensures our tests are authoritative, not arbitrary.

Measurement data at a glance

	Denon DCD-1015			Harman Kardon HD7425			Kenwood DP-7060			Marantz CD-63SE			Onkyo DX-750			
	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	
CHANNEL BALANCE	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.2dB	0.0dB	0.1dB	0.1dB	0.0dB	0.0dB	0.1dB	0.0dB	0.0dB	0.2dB	
CHANNEL SEPARATION	120dB	106dB	81dB	91dB	99dB	78dB	117dB	113dB	89dB	156dB	134dB	142dB	90dB	98dB	68dB	
THD VS LEVEL	0dB	-91dB	-90dB	-80dB	-92dB	-85dB	-67dB	-96dB	-96dB	-98dB	-103dB	-106dB	-75dB	-111dB	-103dB	-85dB
	-30dB	-62dB	-60dB	-66dB	-78dB	-71dB	-76dB	-93dB	-92dB	-85dB	-97dB	-85dB	-72dB	-77dB	-72dB	-70dB
	-60dB	-55dB	-58dB	-51dB	-50dB	-45dB	-53dB	-64dB	-60dB	-58dB	-52dB	-53dB	-45dB	-47dB	-44dB	-42dB
	-80dB	-21dB	-35dB	-30dB	-14dB	-33dB	-31dB	-28dB	-37dB	-39dB	-20dB	-33dB	-18dB	-27dB	-29dB	-24dB
DITHERED,	-90dB	-17dB	-20dB	-20dB	-6dB	-21dB	-22dB	-20dB	-25dB	-29dB	-9dB	-14dB	-9dB	-16dB	-13dB	-10dB
DITHERED,	-100dB		-18dB			-9dB			-19dB			-11dB			-8dB	
DITHERED,	-110dB		-8dB			No SIGNAL			-13dB			-6dB			-1dB	
RESOLUTION @	-60dB	0.0dB	0.0dB		+0.1dB	+0.2dB		0.0dB	0.0dB		0.0dB	0.0dB		-0.1dB	0.0dB	
	-80dB	-0.1dB	-0.2dB		-0.7dB	+1.1dB		-0.1dB	0.0dB		-0.1dB	-0.2dB		+0.4dB	+0.5dB	
	-90dB	-1.4dB	-2.1dB		+0.5dB	+2.3dB		-1.9dB	-0.4dB		-0.1dB	-1.3dB		0.0dB	+1.8dB	
	-100dB	-0.1dB	-4.5dB		+8.5dB	+12.2dB		+2.0dB	-4.7dB		-0.4dB	-0.4dB		+0.4dB	+5.2dB	
PEAK OUTPUT LEVEL,	L	2.109V		2.213V			2.124V			2.307V			2.228V			
	R	2.107V		2.205V			2.136V			2.227V			2.227V			
RELATIVE OUTPUT LEVEL		+0.5dB		+0.9dB			+0.6dB			+1.3dB			+0.9dB			
OUTPUT IMPEDANCE		644OHM		153OHM			295OHM			222OHM			384OHM			
RADIO FREQUENCY SPURIAE		3mV BROADBAND		2mV BROADBAND			6mV @ 85MHZ			5mV BROADBAND			3mV @ 51MHZ			
1HZ NOISE MODULATION		+13.5dB		+4.5dB			+5.5dB			+7.9dB			+1.0dB			
CCIR IMD,	0dB	-98dB		-80dB			-106dB			-105dB			-104dB			
SUPPRESSION OF STOP-BAND IMD		53.8dB		14.9dB			>105dB			53.8dB			7.5dB			
DE-EMPHASIS ACCURACY,	1kHz	-0.1dB		-0.1dB			0.0dB			-0.2dB			0.0dB			
	5kHz	0.0dB		+0.5dB			+0.1dB			-0.9dB			0.0dB			
	16kHz	-0.1dB		0.0dB			+0.4dB			-0.4dB			0.0dB			
S/N RATIO (A-WTD), W/EMP, 0LSB		109.8dB		104.2dB			105.4dB			123.8dB			109.9dB			
	W/OEMP, 0LSB	110.3dB		99.7dB			105.7dB			123.8dB			109.8dB			
	W/OEMP, 1LSB	109.9dB		99.8dB			105.6dB			103.3dB			96.3dB			
DIGITAL OUTPUT		COAXIAL & TosLINK OPTICAL		COAXIAL			TosLINK OPTICAL			COAXIAL & TosLINK OPTICAL			TosLINK OPTICAL			
CRYSTAL CLOCK ACCURACY		-27PPM		-68PPM			+14.1PPM			+2PPM			+64PPM			
TRACK ACCESS TIME (99)		3.5SECS		4.5SECS			3SECS			3SECS			4SECS			
SERIAL NUMBER		1094500164		S241-03228			40599053			MZ009419000020			3408023841			
TYPICAL RETAIL PRICE		£350		£350			£380			£350			£350			

How to get the most from our new lab measurements



Understanding the Frequency Response plot:

This graph demonstrates the response of the player at both peak level (0dB, black trace) and at a low level (-60dB, red trace) under extreme magnification (0.5dB/div). Ideally the black and red responses should match one another.

However, any increase in noise or shift in linearity is revealed by a change in the smoothness and extension of the red trace. By way of example, this plot demonstrates a rippling in the response of Rotel's *RCD-965BX* caused by its 4x oversampling filter.

Bolder ripples only observed in the red (low-level) trace are more likely to be caused by unwanted cross-coupling or an unstable Master Clock.

Understanding the dithered -70dB/1kHz plot:

Dither is a special type of noise used to randomise the predictable quantisation errors that cause unwanted harmonic distortion. Ideally, harmonics are then traded for a slight increase in inaudible hiss, as our example plot from Sony's *CDP-915E* clearly shows.

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

Understanding the new 3D Spurious Output plots:

Distortion and sampling images are most graphically illustrated on the new 3D plots which open a new and colourful window on our search to explain and confirm the sound of different CD players.

Here audio frequency sweeps (0Hz-22.05kHz) at both 0dB (peak output) and -30dB (the thick of the music). These reveal continuous changes in performance rather than at one frequency. Second and third harmonics can be seen radiating out to the right of this sweep in our 0dB example (above right) while third, fifth and seventh harmonics are visible in the -30dB plot (above left). The lower the distortion, the less obvious such harmonics will appear.

In addition, sampling or stop-band images are represented as whole or partial V-shaped patterns centred on multiples of the 44.1kHz sample rate. These

are especially obvious on both 0dB and -30dB example plots, which also reveal the bold rippling pattern caused by the mathematics of the player's digital filter. Ideally such images will be removed altogether allowing the noise floor to descend, undisturbed, into the dark green/black region of the graph.

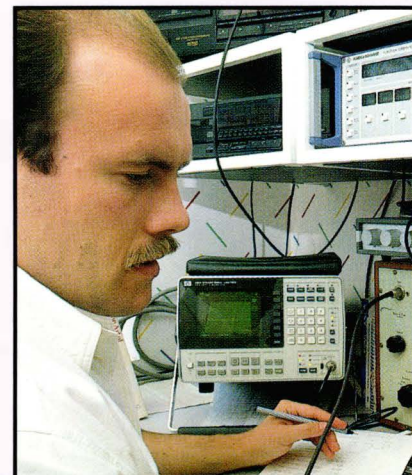
Higher-order sampling images can enter the audio band directly where they may contribute to so-called 'digital harshness'. Otherwise they are only indirectly audible via secondary distortions caused in the partnering amplifier. These new plots, in tandem with the measurement panel, amount to the most advanced and comprehensive tests currently published on CD player performance, bringing us closer than ever before to explaining — and predicting — the sound of reproduced music. (See overleaf for the 0dB/-30dB plots for each player.)

The listening day

Each of these CD players was auditioned under strict, blind conditions at precisely matched listening levels. This way the high 2.3V output of Marantz's *CD-63SE* could not secure it any advantage over the lower 2.0V of the Sony *CDP-915E* and Yamaha *CDX-880*. Crucial though they are, the use of level-matched listening tests remain unique to *Hi-Fi Choice*.

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

As ever, the system included *DPA-100S* pre and power amplifiers plus Audio Note *AN-E* (main) and REL *Stentor* (sub) loudspeakers. My thanks to Roger Batchelor (Denon), John Bamford (Pioneer) and Alan Sircom (*Hi-Fi Choice*) — this month's blind but golden-eared panel.



Rotel RCD-965BX Discrete			Sony CDP-915E			Yamaha CDX-880		
20Hz	1kHz	20kHz	20Hz	1kHz	20kHz	20Hz	1kHz	20kHz
0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.0dB	0.1dB	0.1dB	0.1dB
100dB	100dB	98dB	148dB	127dB	100dB	97dB	99dB	76dB
-89dB	-88dB	-70dB	-109dB	-106dB	-90dB	-106dB	-102dB	-89dB
-74dB	-78dB	-71dB	-96dB	-82dB	-77dB	-85dB	-75dB	-69dB
-55dB	-50dB	-47dB	-58dB	-53dB	-57dB	-53dB	-55dB	-44dB
-20dB	-27dB	-16dB	-28dB	-39dB	-36dB	-25dB	-33dB	-22dB
-8dB	-16dB	-7dB	-19dB	-29dB	-27dB	-18dB	-19dB	-8dB
	-12dB			-19dB			-13dB	
	-6dB			-13dB			-8dB	
	0.0dB	-0.1dB		0.0dB	0.0dB		-0.1dB	0.0dB
	-0.2dB	-1.2dB		0.0dB	0.0dB		-0.4dB	-0.3dB
	-2.6dB	-2.8dB		-0.4dB	-0.4dB		-3.8dB	-2.2dB
	-2.1dB	+0.3dB		0.0dB	+0.1dB		+1.9dB	-9.5dB
2.150V			1.999V			1.993V		
2.143V			1.995V			2.011V		
+0.6dB			0.0dB			0.0dB		
104ΩHM			660ΩHM			660ΩHM		
6mV @ 352kHz			<0.1mV BROADBAND			36mV @ 16.9 & 85MHz		
+1.1dB			+20.2dB*			+3.0dB		
-98dB			<-106dB			-105dB		
54.4dB			>105dB			>105dB		
-0.1dB			-0.1dB			0.0dB		
-0.1dB			-0.1dB			+0.1dB		
0.0dB			-0.1dB			0.0dB		
99.2dB			122.2dB			105.3dB		
95.5dB			122.2dB			105.3dB		
94.7dB			122.1dB*			96.8dB		
COAXIAL			TOSLINK OPTICAL			COAXIAL & TOSLINK OPTICAL		
+2PPM			+3PPM			-12PPM		
2.5SECS			2.5SECS			4.5SECS		
401-17902			600102			B086574UW		
£375			£300			£340		

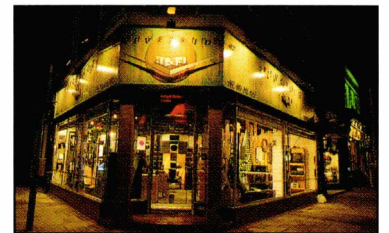
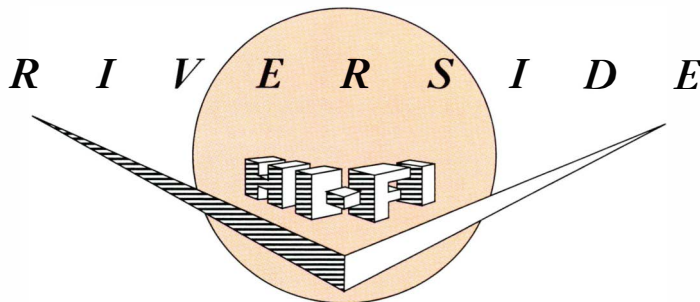


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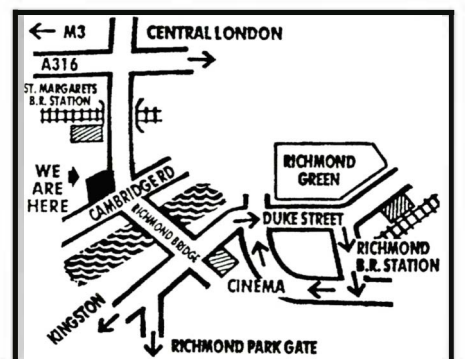
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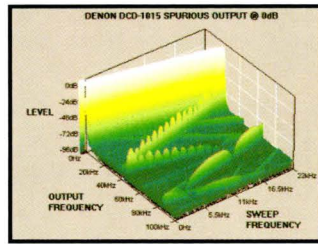
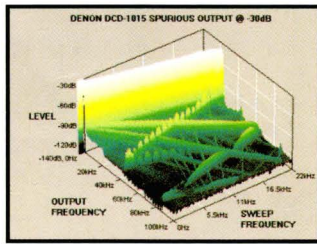
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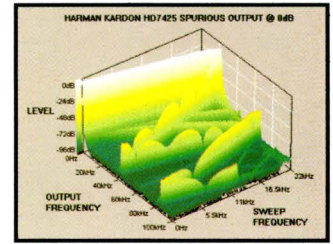
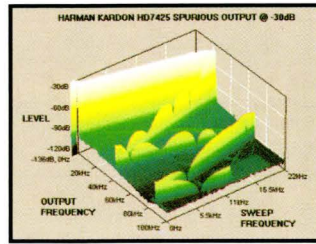
DENON DCD-1015



3D Spurious Output Plot (-30dB): Strong odd-order harmonics and high-order stopband images clutter the audioband in the thick of the music — is this the source of muddled sound, perhaps?

3D Spurious Output Plot (0dB): Fairly strong second and third harmonics are visible, along with rippled stopband images left by the NPC eight-times oversampling digital filter.

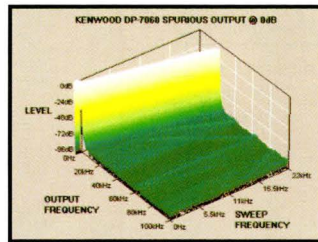
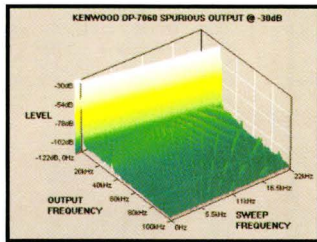
HARMAN KARDON HD7425



3D Spurious Output Plot (-30dB): Digital images remain, though odd-order distortions begin to show through at this lower level. True to multi-bit, the ultrasonic noise floor (dark region) is very low.

3D Spurious Output Plot (0dB): Bold second and third harmonic distortions are joined by huge, undulating stopband images that escape the crude four-times-oversampling digital filter.

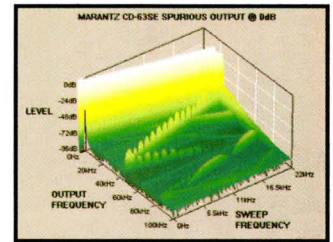
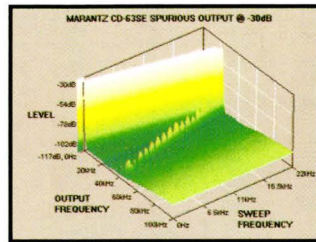
KENWOOD DP-7060



3D Spurious Output Plot (-30dB): The dark green noise floor suggests wide dynamic range, but also exposes extreme-order sampling distortions into the audioband — the source of brightness?

3D Spurious Output Plot (0dB): At peak output this player has a wide dynamic range, mere traces of second and third harmonic distortions, and no trace of stopband noise.

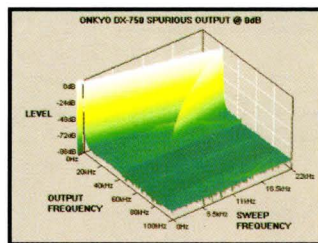
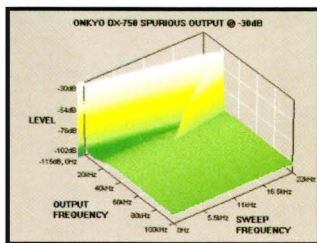
MARANTZ CD-63SE



3D Spurious Output Plot (-30dB): The stopband image remains but residual harmonic or sampling distortions are buried beneath noise (note light green noise floor and similar trend on 1kHz/-70dB plot).

3D Spurious Output Plot (0dB): Rippled stopband images are similar to Denon's (both use an NPC digital filter), though here a second harmonic also holds sway. DAC becomes unstable above 20kHz.

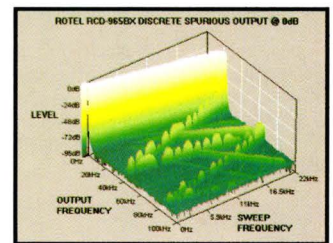
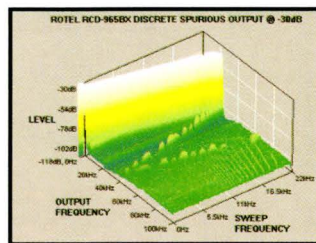
ONKYO DX-750



3D Spurious Output Plot (-30dB): The (light green) ultrasonic noise is clear enough, as is the contoured stopband pattern — but at least it's free of both harmonic and digital distortions.

3D Spurious Output Plot (0dB): Here we see a stopband image rising up to meet the audioband, giving the impression of a more extended response — just like Pioneer's Legato Link.

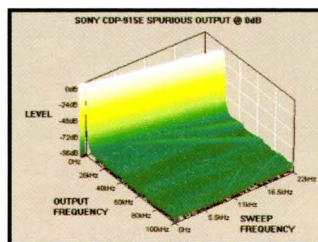
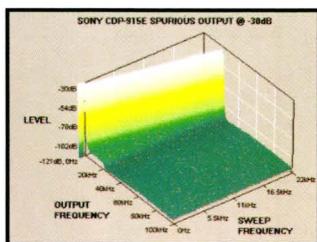
ROTEL RCD-965BX DISCRETE



3D Spurious Output Plot (-30dB): Spurious tones at 7.35kHz and 22kHz are visible, along with extreme-order sampling distortions that course in from >100kHz through to the audioband.

3D Spurious Output Plot (0dB): Strong odd-order harmonics are typical of Philips' original SAA7320-series PDM DACs, as are the rippled stopband images.

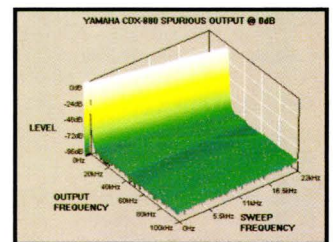
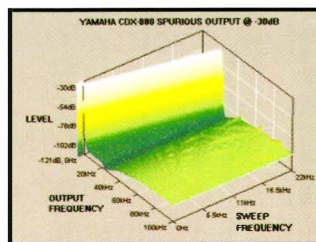
SONY CDP-915E



3D Spurious Output Plot (-30dB): No distortion in or out of the audioband, and no sampling images or digital spuriae moving in from the stopband. Is this why the CDP-915E sounds so clean?

3D Spurious Output Plot (0dB): Traces of second and third harmonic distortion (<0.003 per cent) are revealed by the new 3D plot, but any stopband images are held well outside the audioband.

YAMAHA CDX-880



3D Spurious Output Plot (-30dB): The bright green ultrasonic spectrum shows Yamaha's noise shapers in action. There are many digital images moving across both audio and ultrasonic frequencies.

3D Spurious Output Plot (0dB): Traces of second and third harmonic distortion are visible, but mid-green colouring of the noise floor suggests compromised dynamic range (note mild 97dB S/N ratio).

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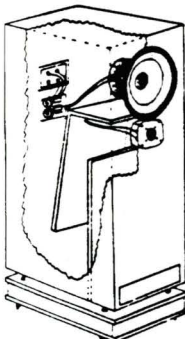
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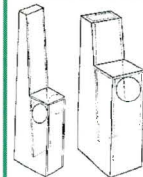
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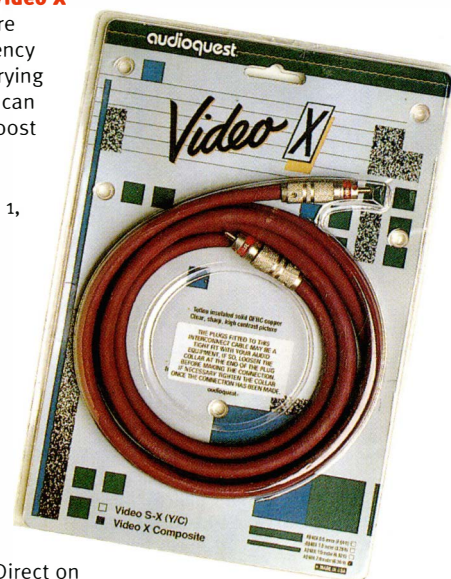
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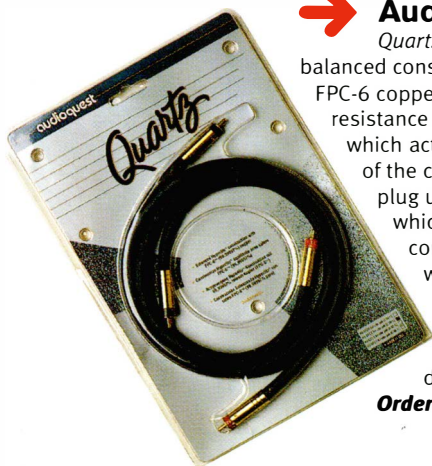
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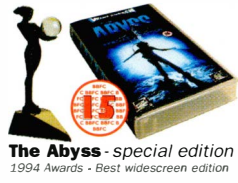
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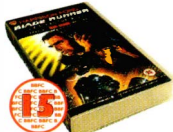
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The Abyss - special edition
1994 Awards - Best widescreen edition



Man Bites Dog
widescreen edition



Blade Runner
the director's cut



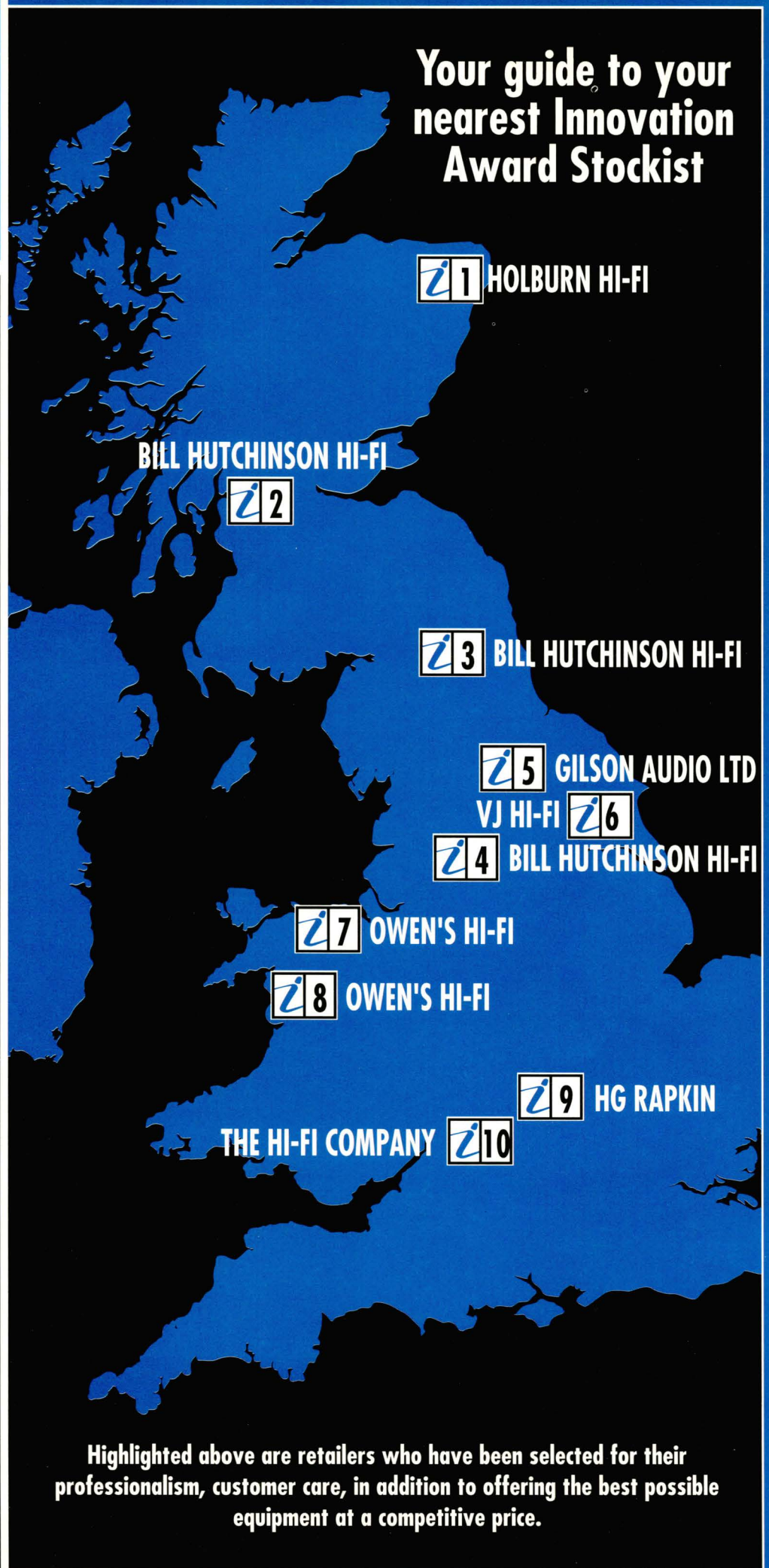
Bill Hutchinson's
INNOVATION
A W A R D

KEY TO RETAILERS

- 1** HOLBURN HI-FI, 441 HOLBURN ST, ABERDEEN. TEL: 01224 585 713
A C D K K W M M S P R T T Y
- 2** BILL HUTCHINSON HI-FI LTD, 43 HOPE STREET, GLASGOW. TEL: 0141 248 2857
A B C D J K K W M M S P R S T T Y
- 3** BILL HUTCHINSON HI-FI LTD, 87A CLAYTON ST, NEWCASTLE. TEL: 0191 230 3600
A C B D J K K W M M S P R S T T Y
- 4** BILL HUTCHINSON HI-FI LTD, 26-28 WOODHOUSE LANE, LEEDS. TEL: 0113 242 7777
A B C D J K K W M M S P R S T T Y
- 5** GILSON AUDIO LTD, 172 BOROUGH ROAD, MIDDLESBROUGH, CLEVELAND. TEL: 01642 248 793
D M M S P R T Y
- 6** VJ HI-FI, 29 GUILDHALL STREET, FOLKESTONE, KENT. TEL: 01303 256 860
A C D K M M S P S T Y
- 7** OWEN'S HI-FI, UNIT B2, COLWYN SHOPPING CENTRE, COLWYN BAY, CLWYD. TEL: 01492 530 982
A C D K W M P S T
- 8** OWEN'S HI-FI, 1 THE MALL, WELLFIELD SHOPPING CENTRE, BANGOR, GWYNEDD. TEL: 01248 362 951
A C D K W M M S P S T
- 9** HG RAPKIN, 11 KETTERING ROAD, ABINGTON SQ, NORTHAMPTON. TEL: 01604 375 15
B K K W P T T Y
- 10** THE HI-FI COMPANY, 23A REGENT ST, LEAMINGTON SPA. TEL: 01926 888 644
B D K K W M M S P T T Y

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

**Your guide to your
nearest Innovation
Award Stockist**



Highlighted above are retailers who have been selected for their professionalism, customer care, in addition to offering the best possible equipment at a competitive price.

Your guide to your nearest Innovation Award Stockist

z11 THE MUSIC STATION

z12 ROBERT RITCHIE HI-FI

z13 BILL HUTCHINSON HI-FI

z14 HUDDERSFIELD HI-FI CENTRE

z15 A FANTHORPE LTD

z16 BILL HUTCHINSON HI-FI

z17 FORUM HI-FI

z18 SHROPSHIRE HI-FI

z19 SOUNDS EXPENSIVE

z20 MIKE MANNING AUDIO

Highlighted above are retailers who have been selected for their professionalism, customer care, in addition to offering the best possible equipment at a competitive price.



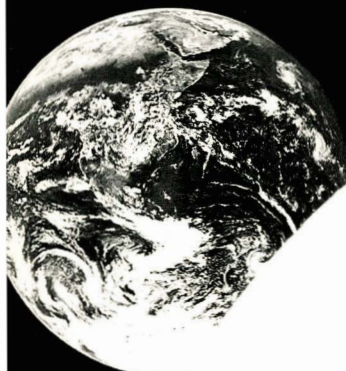
Bill Hutchinson's INNOVATION A W A R D

KEY TO RETAILERS

- 11** THE MUSIC STATION, 49 CHURCH STREET, INVERNESS. TEL: 0146 322 5523
B D K M S P S
- 12** ROBERT RITCHIE HI-FI, 102-106 MURRAY ST, MONTROSE, TAYSIDE. TEL: 01674 673 765
C J K M M S P R S T T Y
- 13** BILL HUTCHINSON HI-FI LTD, 43 SOUTH CLERK ST, EDINBURGH. TEL: 0131 667 2877
A B C D J K K W M M S P R S T T Y
- 14** HUDDERSFIELD HI-FI CENTRE, 4 CROSS CHURCH ST, HUDDERSFIELD. TEL: 01484 544 668
A B D K W M M S P R T Y
- 15** A FANTHORPE LTD, HEPWORTH ARCADE, SILVER STREET, HULL. TEL: 0148-222 3096
B J M M S S T T Y
- 16** BILL HUTCHINSON HI-FI LTD, 50/52 DEANSGATE, MANCHESTER. TEL: 0161 832 1600
A B C D J K K W M M S P R S T T Y
- 17** FORUM HI-FI, 600-602 MANSFIELD RD, SHERWOOD, NOTTINGHAM. TEL: 01159 622 150
A B C M M S P T T Y
- 18** SHROPSHIRE HI-FI, ST MICHAEL'S STREET, SHREWSBURY. TEL: 01743 232 317
A B C D J K K W M P R S T Y
- 19** SOUNDS EXPENSIVE, 12 REGENT ST, RUGBY, WARWICKSHIRE. TEL: 01788 540 772
A D K M M S S T Y
- 20** MIKE MANNING AUDIO, 110 MIDDLE ST, YEovil, SOMERSET. TEL: 01935 793 61
A B D M M S P T T Y

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

The Forefront of Technology



DENON
PROFESSIONAL AUDIO



Model No: **D-F10 Mini Component System**

- UPA-F10 Integrated Amplifier
- UTU-F10 Am/Fm RDS Tuner
- UCD-F10 CD Player
- UDR-F10 Horizontal-loading Cassette Deck

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

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

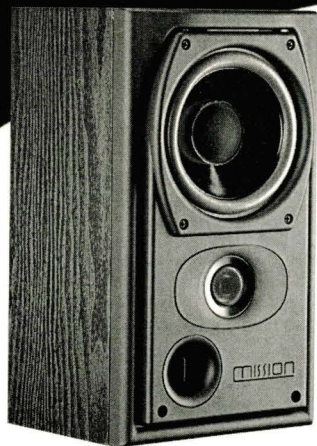
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Hi-Fi • CD • Audio Visual Centre

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



The Forefront of Technology



Model No: 731

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

MISSION

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

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Bill Hutchinson

Hi-Fi • CD • Audio Visual Centre

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- LEEDS 26-28 Woodhouse Lane. Tel: 0532 427777 • NEWCASTLE 87A Clayton Street. Tel: 091-230 3600
- MANCHESTER 50/52 Deansgate. Tel: 061-832 1600



PIONEER

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KENWOOD

TANNOY

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PHILIPS



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



ALL BRANCHES ARE MAJOR LASER DISC STOCKISTS

Bill Hutchinson

Hi-Fi · CD · Audio Visual Centre

THE PROFESSIONALS

When you purchase from Bill Hutchinson you're buying the best names in Hi-Fi from the best name for Hi-Fi. Our Product Guarantee and Pricing Policy ensure you obtain an excellent deal. My staff and I look forward to being of service to you. *Bill*



HEAR KENWOOD'S INNOVATION WINNING AV AMPLIFIER



PRICE PLEDGE

Should you find any local dealer offering a better price for goods currently in stock at Bill Hutchinson and the alternative quoting retailer, we will better that deal.

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

LICENSED CREDIT BROKERS ASK FOR DETAILS

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

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0532-427777

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

NEWCASTLE

87A CLAYTON STREET
091-230 3600

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

GLASGOW

43 HOPE STREET
041-248 2857

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

EDINBURGH

43 SOUTH CLERK STREET
031-667 2877

OPEN DAYS

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

ROTEL

ALL WITH 2 YEAR GUARANTEE

AIWA

DENON

YAMAHA

MARANTZ

JVC

SONY

TECHNICS

The most comprehensive hi-fi listing in the known universe

HI-FI CHOICE

WE CHOOSE THE BEST HI-FI FOR YOU

Welcome to the *Hi-Fi Choice Buyer's Guide*, the UK's biggest and best guide to choosing hi-fi. Over 2,500 items are listed, with up-to-date prices and specifications. Part two comprises the unique review-based *Directory*, giving our views on over 700 components that have been tested and rated by the *Hi-Fi Choice* experts.

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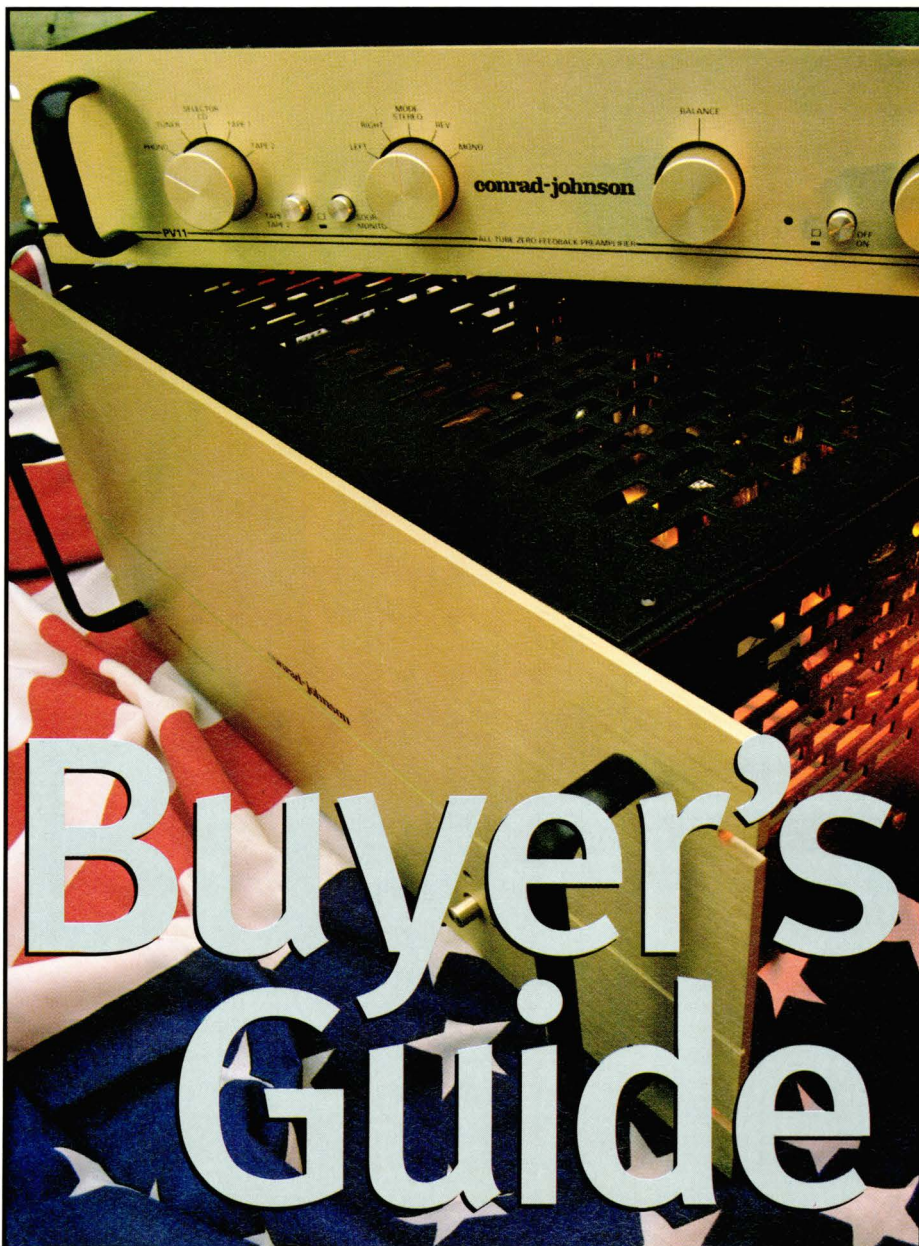
YOUR AT-A-GLANCE REFERENCE TO HI-FI PRICES, TECHNICAL SPECIFICATIONS AND OPTIONS. OVER 2,500 ITEMS LISTED! IF IT'S HOT AND HI-FI, IT'S HERE.

PRODUCT CATEGORIES

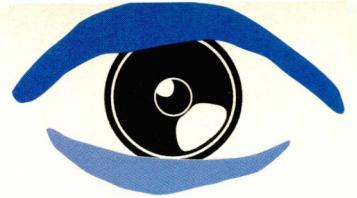
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THE DIRECTORY PAGE 127

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



Blue



UNILET
SOUND & VISION

SALE

MURDER

25th MARCH - 19th APRIL 1995

THE PRICES OF OUR LEADING HI-FI AND HOME CINEMA BRANDS WILL BE BRUTALLY MURDERED FROM **SATURDAY 25TH MARCH - WEDNESDAY 26TH APRIL 1995**

Visit the now infamous annual Blue Murder Sale for great savings, but you'd better be quick on the scene to catch the best offers.

UNILET - THE BEST PLACE IN TOWN FOR HI-FI AND HOME CINEMA:

0181 942 9567

- **3 dedicated home cinema demonstration rooms**
- **3 dedicated hi-fi demonstration rooms**
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- **Free car parking** (limited availability during Blue Murder Sale)

Apply for a sale catalogue and enter our Free Prize Draw on the form below

£1,000 WORTH OF HI-FI EQUIPMENT TO BE WON

1st Prize - A laser disc player worth £500 retail value

2 x Runners up prizes each worth £250 retail value

To enter our draw and receive a sale catalogue, complete your name and address below and post or hand your entry form to a member of our staff during the Blue Murder Sale.

Terms: Only one entry per household. Free draw only open to UK residents. The winning entry will be drawn Wednesday April 26th 1995, all entries must be received before this date to ensure entry. No cash alternatives will be offered in lieu of prizes.

'FREE PRIZE DRAW' & SALE CATALOGUE APPLICATION

Name

Address

.....

.....

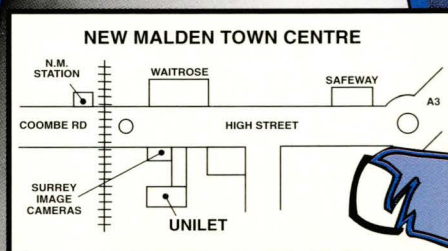
Tel No

You'll scream Blue Murder if you miss our sale bargains!

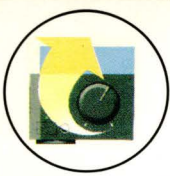


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Open on Sundays



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

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



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Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Aiwa XA-003	140	Int	N	40	MM,2L,1T	Y	N	-	2 speaker circuits
Aiwa XA-950	230	Int	N	100	MM/MC,2L,2T	Y	Y	-	2 speaker circuits
Alchemist Kraken	395	Pre	N	-	5L,1T	N	N	25,9,25	Bridging circuit built-in
Alchemist Kraken	380	Pwr	N	60	-	-	-	32,9,25	Bridgable
Alchemist Kraken	399	Int	N	60	3L,2T	N	N	32,9,25	MM £45 option
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	N	80	-	-	-	31,14,30	Stereo
Alchemist Genesis	1525	Pwr	N	110	-	-	-	25,14,30	Pair monoblocks
AMC AV81 Control	289	Pre	Y	-	8L,2T	N	Y	-	
AMC 2445	299	Pwr	N	45	-	-	-	-	4 channels
AMC 1030	379	Pre	N	-	MM	N	N	-	
AMC 2030	449	Pwr	N	30	-	-	-	-	
AMC S84	479	Pre	Y	-	8L	N	Y	-	Multiroom, bal/unbal inputs
AMC AV81 H.T. Control	499	Pre	Y	-	8L,2T	N	N	-	As AV81 plus Dolby Pro Logic
AMC CVT3030	529	Int	N	30	6L,1T	Y	N	-	Tube amp
Analogue Saturn	75	Pre	N	-	MM	N	N	-	
Analogue Saturn MC	75	Pre	N	-	MC	N	N	-	
Analogue Jupiter	330	Int	N	30	MM,4L,1T	N	N	-	
Arcam Alpha 5	230	Int	N	40	MM,3L,2T	Y	N	43,8,30	Bypassable tone controls
Arcam Alpha 6	330	Int	N	50	MM,3L,2T	Y	Y	43,8,30	Remote volume facility
Arcam Delta 290P	400	Pwr	N	75	-	Y	N	43,9,30	
Arcam Delta 290	480	Int	N	75	4L,2T	Y	Y	43,9,32	Opt MM/MC phono module
Arcam Delta 110S	520	Pre	N	-	MM/MC,3L,2T	Y	Y	43,7,30	As Delta 110, w/o DAC
Arcam Delta 120.2	550	Pwr	N	100	-	Y	N	43,9,30	Bridgable
Arcam Delta 110	750	Pre	N	-	MM/MC,2L,2T	Y	Y	43,7,30	On-board DAC, 2 inputs
Arion EOS	899	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra	999	Int	N	18	4L,1T	N	N	-	Class A valve
Arion Eros Line	1050	Pre	N	-	4L,1T	N	N	-	Dual mono construction
Arion EOS Export	1099	Pwr	N	18	-	-	-	-	With volume control
Arion Elektra Export	1199	Int	N	18	4L,1T	N	N	-	Class A valve amp
Arion Triton	1250	Pwr	N	10	-	-	-	-	Triode, volume control
Arion Eros Phono	1250	Pre	N	-	3L,1T	N	N	-	Dual mono construction
Arion 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	1650	Pwr	N	50	-	-	-	-	Pure Class A
Art Audio Conductor H'phone400	-	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	N	-	Twin valve PSU
Art Audio Quintet	1393	Pwr	N	15	-	-	-	-	Class A triode/pentode
Art Audio Conductor Phono	1500	Pre	N	-	MM/MC	N	N	-	Separate PSU, upgradable
Art Audio Conductor Expo	1500	Pre	N	-	6L,2T	Y	Y	-	Separate PSU, upgradable
Art Audio Concerto	1669	Pwr	N	50	-	-	-	-	2x mono triode/pentode
Art Audio Tempo	2398	Pwr	N	30	-	-	-	-	2x mono Class A triode
Art Audio Maestro	3524	Pwr	N	100	-	-	-	-	2x mono triode/pentode
Art Audio Integra	11644	Int	N	30	5L,2T	N	N	-	Class A Pentode
Audio Innovation L1	299	Pre	N	-	3L,1T	N	N	25,10,30	
Audio Innovation Alto	329	Int	N	35	4L,2T	N	N	43,8,30	
Audio Innovation Ser 200	349	Pre	N	-	MM,3L,T	N	N	50,12,30	
Audio Innovation T2	399	Pre	N	-	MC	N	N	12,16,8	Phono stepup
Audio Innovation Ser 200	499	Pwr	N	12	-	N	N	50,12,30	
Audio Innovation Ser 300	499	Int	N	10	MM,3L,1T	N	N	50,12,30	
Audio Innovation P2	679	Pre	N	-	MM	N	N	50,12,30	Phono stage
Audio Innovation L2	699	Pre	N	-	4L,1T	N	N	50,12,30	
Audio Innovation Ser 800	849	Pwr	N	25	-	N	N	41,15,34	
Audio I Classic 25	899	Int	N	25	4L,1T	N	N	46,15,34	Kit amplifier
Audio Innovation P2MC	899	Pre	N	-	MM/MC	N	N	50,12,30	Phono stage
Audio Innovation Ser 500	999	Int	N	25	MM,3L,2T	N	N	41,15,34	
Audio Innovation Ser 700	999	Int	N	25	4L,1T	N	N	41,15,34	
Audio Innovation 1000	1499	Pwr	N	50	-	N	N	41,15,34	Monoblocks
Audio I First Audio	1549	Pwr	N	7.5	-	N	N	41,15,34	
Audio Innovation 1000SE	2249	Pwr	N	50	-	N	N	41,15,34	Silver circuit board
Audio I 2nd Audio	2999	Pwr	N	15	-	N	N	41,15,34	Monoblocks
Audio Note Ongaku	22411	Int	N	26	6L	N	N	-	Single-ended Class A tube
Audio Note Oto	1250	Int	N	24	MM/MC,4L,1T	N	N	-	
Audio Research LS-3	1599	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research PH-1	1649	Pre	N	-	MM/MC	N	N	48,14,26	Phono preamp
Audio Research LS-3b	2250	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input
Audio Research VT60	2430	Pwr	N	35	-	N	N	-	Single ended tube mono
Audio Research LS-2	2796	Pre	N	-	5L,1T	N	N	48,14,26	1 direct input/hybrid
Audio Research D-200	2800	Pwr	N	110	-	-	-	48,14,31	Single ended, balanced
Audio Research SP9 II	2850	Pre	N	-	MM/MC,4L,2T	N	N	48,14,26	Hybrid
Audio Research PH-2	2895	Pre	N	-	MM/MC	N	N	48,14,26	Balanced
Audio Research LS-2b	3355	Pre	N	-	5L,1T	N	N	48,14,26	1 balanced direct input/hybrid
Audio Research V35	3355	Pwr	N	30	-	-	-	48,18,37	Balanced in, hybrid
Audio Research V70	4480	Pwr	N	60	-	-	-	48,18,40	Balanced in, hybrid
Audio Research D-300	4800	Pwr	N	160	-	-	-	48,18,33	Single ended, balanced
Audio Research LS-5	5290	Pre	N	-	5L,1T	N	N	48,14,30	Full balanced in/out
Audio Research VT130	5600	Pwr	N	65	-	N	N	-	Stereo tube, balanced
Audio Research D-400II	6200	Pwr	N	200	-	-	-	48,23,33	Single ended, balanced
Audio Research VT140	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	N	100	-	-	-	45,8,36	Bi-wire speaker terminals
Audiolab 8000S	750	Pwr	N	100	-	-	-	45,8,36	Stereo monoblock

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Audiolab 8000PPA	850	Pre	N	-	MM/MC	-	-	45,8,36	Phono preamplifier
Audiolab 8000Q	1000	PRE	N	-	3L,2T	Y	Y	45,8,36	'Pure Direct' signal path
Audiolink Sterling II	350	Int	N	60	MM/MC	N	N	43,7,270	Available in chrome
Audiolink P400	467	Pre	N	-	4L	N	N	43,7,270	Available in chrome
Audiolink PR401	583	Pwr	N	100	-	N	N	43,10,37	Available in chrome
Aura VAB0	280	Int	N	45	5L,1T	Y	N	43,6,31	Chrome finish, £50 extra
Aura VA100 II	330	Int	N	70	MM,4L,1T	Y	N	43,6,31	Chrome finish add £50
AVI S2000MA	599	Pwr	N	90	-	-	-	-	
AVI S2000MP	749	Pre	N	-	5L,1T	N	-	31,25,9	includes S2000RC handset
AVI S2000MI	799	Int	N	100	4L, 1T	-	Y	31,25,9	Includes S2000RC handset
AVI S2000MM	1099	Pwr	N	150	-	-	-	-	2x monoblocks
Beard VM-P	795	Pre	N	-	MM/MC,3L,1T	N	N	-	Hybrid tube/MOSFET
Beard CA-35	995	Pre	N	-	MM/MC,3L,1T	N	N	-	Tube Class A
Beard VMI-50	995	Int	N	50	MM/MC,3L,1T	N	N	-	Hybrid tube/MOSFET
Beard P-35	1395	Pwr	N	35	-	N	N	-	Tube, Class A
Beard CA-506	1695	Pre	N	-	MM/MC,3L,2T	N	N	-	Tube, Class A
Beard A-70	2895	Pwr	N	70	-	N	N	-	Monoblock, tube, Class A
Beard M-1000	5900	Pwr	N	100	-	-	-	-	Pair monoblocks
Bryston .4	641	Pre	Y	-	4L,1T	N	N	48,5,25	
Bryston BP1	673	Pre	Y	-	MM or MC	N	N	48,5,25	Phono stepup, bal & unbal
Bryston 2B-LP	750	Pwr	Y	75	-	N	N	48,5,25	Bridgable
Bryston BP4	802	Pre	Y	-	4L,1T	N	N	48,5,25	Balanced out
Bryston BP5	889	Pre	Y	-	MM/MC,3L,1T	N	N	48,5,25	MM or MC, balanced out
Bryston BP20	1126	Pre	Y	-	8L,1T	N	N	48,5,25	Balanced in/out
Bryston 3B-NRB	1159	Pwr	Y	150	-	N	N	48,13,23	Bridgable, bal & unbalanced
Bryston THX3B	1262	Pwr	Y	150	-	N	N	48,13,23	2 channels, THX approved
Bryston 4B-NRB	1756	Pwr	Y	300	-	N	N	48,13,39	Bridgable, bal & unbalanced
Bryston 7B-NRB	1815	Pwr	Y	500	-	N	N	48,13,39	Single monoblock
Bryston THX4B	1858	Pwr	Y	300	-	N	N	48,13,39	2 channels, THX approved
Bryston THX7B	1917	Pwr	Y	500	-	N	N	48,13,39	1 channel, THX approved
Bryston 8B-NRB	2195	Pwr	Y	150	-	N	N	48,13,39	4 channels, bridgeable
Bryston THX8B	2400	Pwr	Y	150	-	N	N	48,13,39	4 channels, THX approved
C.R. De Kalypso	499	Int	N	15	5L	-	-	-	
C.R. De Romulus	998	Int	N	35	5L	-	-	-	
CAT SL1 Sig line	5500	Pre	N	-	3L,1T	-	N	31,48,14	2 outputs, valve
CAT SL1 Sig phono	6000	Pre	N	-	MM,2L	-	N	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	-	MOS

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PMB OSEM2 £749

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AV5000/MA500 £699/£749
MM500/AV1030 £399/£400
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DD82 £199
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TAF44E/TAF44E £249/£299

TUNERS

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STS505ES £249
CASSETTE DECKS
TCK215B/415B £129/£199
TCK515S/TCK611S £249/£289
TWIN CASSETTE DECKS
TCWR445B/R545B £149/£199
TW645S £249
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CDP715E/CDP915E £249/£299
CDPCX151 £299
CDPM302/CDPC325M £129/£229

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MZEZ/MZR2 £349/£449
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Key to amplifiers
Price - typical retail, to nearest pound.
Power - output power in watts, per channel, RMS.
Inputs - MM/MC - phono moving coil and moving magnet, L - line (CD, aux etc), T - tape.
A/V - includes Dolby Surround or Pro Logic decoder and amplification.

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

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
C point Nat Progress	4125	Pwr	-	150	-	-	-	-	Mono, hybrid
Counterpoint NPM-E	7595	Pwr	-	150	-	-	-	49,18,49	Twin monoblocks
Credo PMP003	385	Pre	N	-	-	N	N	22,6,24	Phono amp MM/MC, & PSU
Credo HMP003	388	Pre	N	-	-	Y	N	-	Class A headphone amp
Credo MMP002	439	Pre	N	-	-	N	N	-	Mic amp, phantom power
Credo IMP702	499	Int	N	70	6L	-	N	44,6,31	
Credo IMP703	538	Int	N	70	MM/MC, 6L	-	Y	44,6,31	As above, with remote
Credo CMP004	799	Pre	N	-	6L	N	N	44,6,31	3 outputs
Credo CMP005	1119	Pre	N	-	6L	N	Y	-	Remote controlled pre
Credo PMP154	1699	Pwr	N	150	-	-	-	44,16,31	
Credo PMP303	1699	Pwr	N	30	-	-	N	-	Class A power amp
Credo PMP102	2181	Pwr	N	100	-	-	N	44,21,31	Class A power amp
Credo PMP252	2509	Pwr	N	250	-	-	N	44,21,31	
Creek P42	250	Pre	-	-	4L,2T	Y	-	42,6,20	Plug-in modules available
Creek A42	250	Pwr	-	50	-	-	-	42,6,20	
Creek 4240	250	Int	N	40	3L,1T	Y	N	42,6,20	Optional phono input
Crimson 620	395	Pwr	N	40	-	-	-	-	
Crimson CS610	395	Pre	N	-	MM/MC, 2L,1T	N	N	9,10,35	
Crimson CS620	395	Pwr	N	40	-	-	-	9,10,35	
Croft Micro	299	Pre	N	-	MM,3T,1T	N	N	-	
Croft Micro	400	Pre	N	-	MM,3L,1T	N	N	43,10,36	Tube
Croft Series 5	549	Pwr	N	35	-	-	-	-	Ultralinear design
Croft Charisma	599	Pre	N	-	MM,3T,1T	N	N	-	
Croft Integrated	599	Int	N	35	MM,3L,1T	N	N	-	
Croft Charisma	700	Pre	N	-	MM,3L,1T	N	N	43,10,36	Tube
Croft Series X	800	Pwr	N	25	-	-	-	43,10,36	OTL amp, triode
Croft Enigma	999	Pre	N	-	MM,3T,1T	N	N	-	
Croft Enigma	1100	Pre	N	-	MM,3L,1T	N	N	43,10,36	Tube
Croft Series 6	1300	Pwr	N	120	-	-	-	43,10,36	Triode facility
Croft Series IIR	1599	Pwr	N	35	-	-	N	-	OTL, regulated PSU
Croft Series III R	1600	Pwr	N	46	-	-	-	50,20,25	OTL amp, triode
Croft Absolut 1	1999	Pre	N	-	MM,3T,1T	N	N	-	
Croft Series IIR	5500	Pwr	N	100	-	-	-	-	Monoblock OTL
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-3020	730	Int	Y	80	MM,4L,4T	Y	Y	44,16,43	Learning remote
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	Pwr	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	-	
DPA Renaissance	595	Int	N	40	MM,4L,1T	Y	N	-	'Compound Class A' o/p
DPA DP200S	750	Pwr	-	60	-	-	-	-	Bridgable
Dynavector P100	1495	PRE	N	-	MM,MC	-	-	44,6,22	Phono stepup
Dynavector L100	1995	PRE	N	-	3L,2T	N	N	44,6,24	
Dynavector HX1.2	3995	PWR	N	130	-	-	-	44,13,37	High current capability
EAR 834P	349	PRE	N	-	MM/MC	N	N	40,40,15	Valve phono stepup
EAR 834	1395	INT	N	50	6L	N	N	40,40,15	Valve
EAR 802	1440	Pre	N	-	MM,2L,2T	N	N	-	Valve
EAR 802MC	1580	Pre	N	-	MC,2L,2T	N	N	-	Valve
EAR 859	1595	INT	N	13	6L	N	N	40,40,15	Single ended valve
EAR 509 Mk II	2900	PWR	N	100	-	-	-	36,20,25	Valve monoblock x1
EAR 519	3830	PWR	N	100	-	-	-	43,14,20	Valve monoblock x1
EAR 888	5770	Pre	N	-	MM/MC, 3L, 2T	N	N	-	Valve
EAR 549	5860	PWR	N	200	-	-	-	43,27,22	Valve monoblock x1
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	502	Pre	N	-	MM/MC	N	N	24,7,16	Self adjusting
Electrocompanion ECP-1SF	670	Pre	N	-	MM/MC	N	N	24,7,16	MC input, blue stone finish
Electro EC-4 Line	1332	Pre	N	-	5L,2T	N	N	48,9,23	
Electro EC-4 SF Line	1460	Pre	N	-	5L,2T	N	N	48,9,23	Blue stone facia
Electrocompanion EC-3MM	1556	Pre	N	-	MM,4L,2T	N	N	48,9,23	
Electro EC-3MM-SF	1680	Pre	N	-	MM,4L,2T	N	N	48,9,23	Blue stone facia
Electrocompanion EC-3MC	1865	Pre	N	-	MC,4L,2T	N	N	48,9,23	Adjustable MC input
Electro EC-3MC-SF	1990	Pre	N	-	MC,4L,2T	N	N	48,9,23	MC input, blue stone facia
Electro AW100DMB	2018	Pwr	-	100	-	-	-	48,13,36	High current (80A)
Electrocompanion EC1-1	2081	Int	N	100	5L,2T	N	N	45,13,36	High current (80A)
Electro AW100DMB-SF	2140	Pwr	N	100	-	-	-	48,13,36	High current, blue stone facia
Electro EC1-1 Int-SF	2210	Int	N	100	5L,2T	N	N	45,13,36	High current, blue stone facia
Electrocompanion AW180MB	184095	Pwr	-	180	-	-	-	28,29,48	2x monoblocks
Electro AW180MB-SF	4330	Pwr	N	180	-	-	-	28,29,48	2x mono, blue stone facia
Electro AW250DMB	4370	Pwr	-	250	-	-	-	48,22,45	High current (100A)
Electro AW250DMB-SF	4560	Pwr	N	250	-	-	-	48,22,45	Blue stone facia
EMF Audio Sequel	349	Int	N	50	MM,4L,1T	Y	N	43,65,28	



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AMPLIFIERS									
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 XVIII Super	849	Pwr	N	70	-	N	N	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	-	N	N	43,85,35	Upgraded 2x monoblocks
Exposure IV	2199	Pwr	N	80	-	N	N	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	-	-	-	48,13,30	Single ended Class A
Gamma Phonostage	599	Pre	N	-	-	N	N	14,14,30	Add on for Gamma preamps
Gamma Acoustics ERA	1999	Pre	N	-	-	-	N	44,17,30	
Gamma Space Reference	3499	Int	N	18	-	-	-	43,22,31	Line integrated
Gamma Acoustics Spage	3499	Pwr	N	18	-	-	N	43,22,31	
Gamma Era Reference	3499	Pre	N	-	-	-	N	44,17,30	
Gamma Acoustics Rhythyr	4999	Pwr	N	25	-	-	-	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	-	-	-	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			

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AMPLIFIERS									
Krell K.A.S.	29500	Pwr	N	350	-	-	-	48,34,64	Monoblocks
Lecson 380X	255	Int	N	35	MM/MC,6L	N	N	44,6,27	
Lecson Stereo 383X	295	Int	N	60	MM/MC,6L	Y	N	44,6,27	
Lecson Quattra	420	Int	N	30	MM/MC + N/A	N	N	44,6,27	Pre out/main in
Lecson Quattra Plus	655	Int	N	50	MM/MC + N/A	N	N	44,6,27	Separate PSU
LFD Phonostage MMO	399	Pre	N	-	MM, MC	N	N	30,6,37	Switchable MM/MC
LFD Integrated Zero	499	Int	N	50	5L,1T	N	N	30,6,37	Hand made, custom parts
LFD Linestage LSO	499	Pre	N	-	5L,1T	N	N	30,6,37	Zero feedback
LFD Powerstage PAO	499	Pwr	N	50	-	N	N	30,6,37	Stereo MOSFET
LFD MC1 Phonostage	949	Pre	N	-	MC	N	N	30,7,36	Discrete circuit
LFD L51 Linestage	999	Pre	N	-	4L,1T	N	N	48,7,33	Zero feedback
LFD PA1 Powerstage	999	Pwr	N	60	-	N	N	48,7,33	MOSFETs, custom parts
LFD PPS	999	Pre	N	-	2L,1T	N	N	13,6,27	Switched attenuator, passive
LFD Integrated 1	1099	Int	N	65	MM/MC,4L,1T	N	N	48,7,37	More powerful Int Zero
LFD Phonostage MC2	1499	Pre	N	-	MC	N	N	30,7,36	Hand tuned MC1
LFD Linestage LS2	1599	Pre	N	-	4L,1T	N	N	48,7,37	Hand tuned LS1
LFD Powerstage PA2	1599	Pwr	N	75	-	N	N	48,7,33	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	Monio PA2
LFD Disc Preamp	4499	Pre	N	-	MC	N	N	30,5,36	Battery powered
Linn Majik-1 (Line)	524	Int	N	33	4L,2T	Y	N	32,8,33	Works as pre/int multi room
Linn LK100	549	Pwr	N	50	-	-	-	32,8,33	Stereo
Linn Majik-1 (Phono)	593	Int	N	33	MM/MC,3L,2T	Y	N	32,8,33	As line Majik
Linn Kairn Pro	998	Pre	N	-	4L, 2T	N	N	32,8,33	Multi-room compatible
Linn Kairn Preamp	1398	Pre	N	-	MM, MC,3L,2T	N	N	32,8,32	Multi-room compatible
Linn Klout	1895	Pwr	N	80	-	-	-	32,8,33	Stereo, tri-wire connectors
Lumley Reference PP70	325	Pre	N	-	6L,1T	-	N	36,46,66	Passive, bolts to ST70
Lumley Reference PP40	325	Pre	N	-	6L,1T	-	N	29,40,66	Bolts to ST40
Lumley Reference PP1	325	Pre	N	-	6L,1T	-	N	29,44,66	Passive, stand alone
Lumley Reference LV1	1000	Pre	N	-	6L,1T	-	N	29,44,66	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 A312	200	INT	N	40	MM,4L,2T	Y	N	13,44,36	
Luxman A331	250	INT	N	60	MM,4L,2T	Y	N	13,44,36	
Luxman A353R	350	INT	N	60	MM/MC,4L,2T	Y	Y	13,44,37	Motorised vol control
Luxman A373	450	INT	Y	80	MM/MC,4L,2T	Y	Y	13,44,37	Also has AV inputs
Lynwood Opal	685	Int	N	80	7L,1T	N	N	-	
Lynwood Ruby	985	Pwr	N	120	-	-	-	-	
Magnum IA120	249	Int	N	50	MM,5L,2T	Y	N	-	
Magnum Quartet	329	Int	N	36	MM,3L,2T	Y	N	-	
Magnum MF125	515	Pwr	N	140	-	-	-	-	Monoblocks
Magnum MF300	595	Pwr	N	180	-	-	-	-	Monoblocks
Magnum Class A	599	Int	N	60	MM/MC,3L,1T	N	N	-	
Magnum MA500	1295	Pwr	N	280	-	-	-	-	Monoblocks
Marantz PM-44SE	180	Int	N	45	MM,3L,2T	Y	N	42,14,28	Audiophile components
Marantz PM44SEII	200	Int	N	45	MM,3L,2T	Y	N	42,14,28	
Marantz PM-43	200	Int	N	55	MM,3L,2T	Y	N	42,14,30	
Marantz MA-500	250	Pwr	N	125	-	-	-	9,15,45	D-bus, monoblocks, bridgable
Marantz PM-53	250	Int	N	65	MM,3L,2T	Y	Y	42,14,30	
Marantz PM-63	300	Int	N	70	MM,3L,2T	Y	Y	42,14,30	
Marantz PM-54SE	329	Int	N	65	MM/MC,3L,2T	Y	N	42,16,34	Audiophile components
Marantz PM-700AV	450	Int	Y	45	MM,5L,2T	Y	Y	42,16,34	Dolby Pro Logic
Marantz PM-80 II	480	Int	N	100	MM/MC,4L,2T	Y	N	42,17,34	
Marantz PM-80SE	650	Int	N	110	MM/MC,3L,3T	Y	N	42,17,34	Audiophile components
Marantz AV-500	699	Pre	Y	-	MM,7L,2T	N	Y	42,10,34	Dolby Pro Logic
Mark Levinson 29	3450	Pwr	N	50	-	-	-	-	
Mark Levinson No 38	3995	Pre	N	-	6L,2T	N	Y	-	Fully remote, balanced
Mark Levinson 27.5	5399	Pwr	N	100	-	-	-	-	
Mark Levinson No 38S	6495	Pre	N	-	6L,2T	N	Y	-	Special Edition, balanced
Mark Levinson 23.5	7399	Pwr	N	200	-	-	-	-	
Mark Levinson 20.6	15790	Pwr	N	100	-	-	-	-	Monoblocks, Class A
Matisse Fantasy	2300	Pre	Y	-	6L,2T	N	N	-	Line stage
Matisse Reference	3500	Pre	Y	-	MM/MC,5L,2T	N	N	-	
McIntosh MC7100/2	1095	Pwr	N	100	-	-	-	-	
McIntosh C712	1295	Pre	N	-	6L, 2T	Y	Y	-	
McIntosh C38	2095	Pre	N	-	MM, 5L,3T	Y	Y	-	Multi-room, balanced out
McIntosh MC7150	2295	Pwr	N	150	-	-	-	-	
McIntosh C39	2795	Pre	Y	-	MM, 10L (6 Vid)	Y	Y	-	Two zone, THX compatible
McIntosh C40	2795	Pre	N	-	MM, 6L, 3T	Y	N	-	Balanced in/out
McIntosh MC7106	2995	Pwr	Y	100	-	N	N	-	Six channel THX amp
McIntosh MC7300	3195	Pwr	N	300	-	N	N	-	
McIntosh MC275	3595	Pwr	N	75	-	N	N	-	Classic valve amp
McIntosh MC2600	5395	Pwr	N	600	-	N	N	-	
McIntosh MC1000	9595	Pwr	N	100	-	N	N	-	Monoblocks
Meridian 501	595	Pre	N	-	MM,4L,T	Y	N	33,9,34	MC option, system handset
Meridian 555	595	Pwr	N	60	-	N	N	33,9,32	Stereo
Meridian 562	625	Pre	N	-	MM,8L,T,6D	N	N	33,9,34	Digital main out. MC option
Meridian 551	695	Int	N	55	MM,4L,T	N	N	33,9,34	MC option
Meridian 501V	745	Pre	Y	-	MM,4L,T	Y	N	33,9,34	As 501, plus video switching
Meridian 562V	825	Pre	Y	-	MM,8L,T,6D	N	N	33,9,34	As 562, plus video switching
Meridian 601	2750	Pre	N	-	MM,4L,T	Y	Y	-	DSP tone control, MC option
Metaxas Ikarus II	1350	Int	N	40	MM/MC,3L,1T	N	N	40,7,40	
Metaxas Charisma	1525	Pre	N	-	MM/MC,3L,2T	-	N	36,6,29	Separate PSU

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AMPLIFIERS									
Metaxas Marquis	2250	Pre	N	-	MM/MC,3L,2T	-	N	29,7,45	Separate PSU
Metaxas Solitaire	2350	Pwr	N	130	-	-	-	52,19,42	
Metaxas Opulence	5500	Pre	N	-	MM/MC,3L,2T	-	N	39,7,45	Separate mains isolated PSU
Metaxas Soliloquy	5990	Pwr	N	100	-	-	-	52,19,42	Pair monoblocks
Michell Iso	412	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Argo	715	Pre	N	-	3L,1T	N	N	33,7,19	2 pairs outputs
Michell Iso HR	879	Pre	N	-	MM or MC	N	N	small	Phono stage
Michell Alecto Stereo	1150	Pwr	N	50	-	N	N	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	-	N	N	32,20,36	
Michi RHC-10	795	Pre	N	-	5L	-	-	47,8,34	Passive
Michi RHB-05	995	Pwr	N	100	-	-	-	47,8,36	
Michi RHQ-10	995	Pre	N	-	MM,MC	-	-	47,8,34	Phono equaliser
Michi RHA-10	995	Pre	N	-	5L	-	Y	47,8,34	Active
Michi RHB-10	1650	Pwr	N	200	-	-	-	47,19,37	
Minstrel Ultra Linear	899	INT	N	30	3L,1T	N	N	-	Low feedback hybrid
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
Monrio Primus	895	Pre	N	-	6L,1T	N	N	-	Line only preamp
Monrio MC-25	995	Pwr	N	80	-	-	-	-	Dual mono construction
Monrio Cento	1495	Pwr	N	135	-	-	-	-	Dual mono construction
Monrio MC-205	1595	Int	N	80	6L,1T	N	N	-	Inc pre-out sockets
Moth 30 Passive	149	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 RIAA	199	Pre	N	-	MM/MC,	N	N	5,10,35	
Moth 30 Series Power	239	Pwr	N	30	-	-	-	5,10,35	
Moth 30 Active	249	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 RIAA 100VA	299	Pre	N	-	MM/MC	N	N	5,10,35	
Moth 30 Integrated	320	Int	N	30	8L,T	N	N	8,18,35	
Moth 30 Active 100VA	349	Pre	N	-	4L,1T	N	N	5,10,35	
Moth 30 Mono/40	459	Pwr	N	40	-	-	-	5,10,35	2x monoblocks
Moth 30 Stereo/60	549	Pwr	N	60	-	-	-	5,15,35	2x monoblocks
Moth 30 Mono/100	879	Pre	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	-	N	N	49,12,38	Bal/unbalanced in

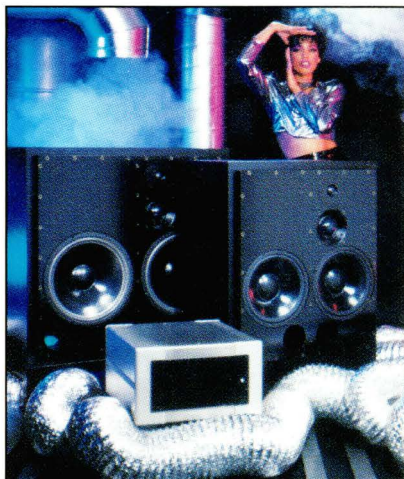
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BARGAINS GALORE

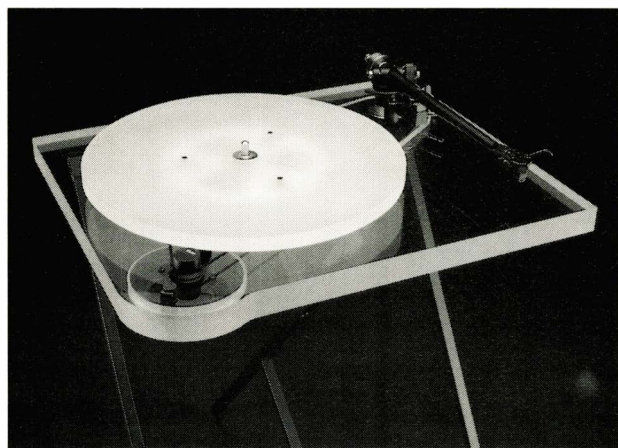
As regular readers know, we at V'Audio are always on the look out for bargains and they come in many forms. We referred to one of them last month which utilised the little £99 Jamo Cornet 30, but must apologise for ignoring the contribution made by the Foundation 'Apprentice' Stands, which cost twice as much as the speakers but are vital to allow the Jamos to do their best. We are experimenting this week with their top stand, the Designer (£325) but feel that the cheaper stand is quite sufficient. To make the Jamos really sing you need the other bargain of the year, the new AVI Integrated (£800), which produces 100 W/CH, 250 Watts peak power and ± 20 amps current capability. It is remote controlled and is superb on any speaker which has an accurate mid-band such as the ATC 10/20 and the Ruark Crusader, which it suits superbly we feel, due to the dome mid-range unit. When you consider that a Naim 52 pre-amp + 2 Nap 135 mono-blocks will set you back 10 times the price of the AVI and only produce 75 Watts/Channel, then just how good a bargain the AVI is becomes clear. Only this week the AVI was pitted against an audio research LS2 + D240 power amp into the ATC 20s and Crusaders and you can guess which won!



ATC 200A/300As

Perhaps it is a bit cheeky to list these monsters as bargains at around £12K, but when you consider that includes total RMS power per channel of 850 Watts, with the capacity to deliver peak power levels in excess of 1kW, then they are. After all some well known active units cost £24k and Wilson Watt/Puppies are more and don't even have amplifiers. Do ring for a demo.

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The Rota 1 incorporates a completely new design concept and includes a stand, arm and cartridge. To see why this turntable is clearly the best, telephone for an appointment.

2 Ingrave Road, Brentwood, Essex CM15 8AT. Tel: 01277 221210. Fax: 01277 261175

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Aura, Audio Innovations, Castle, Chord, Crimson, Denon, DNM, E.A.R., E.C.A., Impulse, Lumley Reference, Marantz, Micromega, Mission, Musical Fidelity, Musical Technology, NAD, Pink Triangle, Project, Quad, Ruark, Systemdek, Shearne Audio, Tannoy, Thule Audio





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

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



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

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

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
Onix OA215	430	Int	N	50	MM/MC,3L,1T	N	N	75,23,37	
Onix OA31	480	Int	N	60	MM/MC,4L,1T	Y	N	43,77,33	
Onix OA601	699	Pwr	-	70	-	-	-	75,46,36	Regulated PSU
Onix OA801	849	Pwr	-	190	-	-	-	75,46,36	2x monoblocks, massive PSU
Onkyo A801	200	Int	N	40	MM,3L,2T	Y	N	46,12,33	
Onkyo A803	260	Int	N	60	MM/MC,3L,2T	Y	Y	46,12,33	
Onkyo A-911	350	Int	N	70	MM,3L,2T	Y	Y	28,12,33	Mini component, 4ohm rating
Onkyo A850	370	Int	N	60	MM/MC,3L,2T	Y	Y	46,15,35	
Orelle SA-100	379	Int	N	50	6L,1T	N	N	44,7,23	DC coupled MOSFET
Orelle SC-200	400	Pre	N	-	6L,1T	N	N	44,7,28	MM/MC option
Orelle SP-200	799	Pwr	-	100	-	-	-	-	
Papworth PPA6	0	Pre	N	-	6L	N	N	25,13,33	Bi-mono valve
Papworth PPA6/P	0	Pre	N	-	MM,MC,6L	N	N	25,13,33	Bi-mono valve
Papworth TVA50	1425	Pwr	N	50	-	N	N	43,19,33	Tube stereo
Papworth M100	2645	Pwr	N	100	-	N	N	25,17,38	Tube monoblock
Papworth M200	3825	Pwr	N	200	-	N	N	46,20,31	Tube monoblock
Philips FA930	200	Int	N	65	MM,2L,3T	Y	Y	44,14,30	
Pioneer A-103	130	Int	N	30	MM,3L,2T	Y	N	42,11,31	
Pioneer A-203	150	Int	N	45	MM,3L,2T	Y	N	42,11,31	
Pioneer A-303R	200	Int	N	45	MM,3L,2T	Y	Y	42,13,36	
Pioneer A-300X	230	Int	N	40	MM,3L,2T	N	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 C-300CD	259	Pre	N	-	MM/MC,4L,1T	N	N	-	
QED Vector Reference	299	Pre	N	-	4L,1T	N	N	-	
QED C-300PA	329	Pre	N	-	MM/MC,4L,1T	N	N	-	
Quad 306	350	Pwr	N	70	-	N	N	33,7,21	Stereo power amp
Quad 34	398	Pre	N	-	MM,2L,T	N	N	33,7,21	Optional MC phono input
Quad 77	595	INT	N	70	2L,T	-	-	33,6,30	System remote E279
Quad 606	690	Pwr	N	140	-	-	-	33,14,24	Stereo power amp
Quad 66	863	Pre	N	35	MM,4L,2T	N	Y	33,8,26	Variable inputs, inc RVC
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-X3172	275	Int	N	40	MM,3L,1T	Y	N	-	
Sansui AU-X417R	280	Int	N	45	MM,3L,2T	Y	N	-	
Sansui AU-X517R	450	Int	N	60	MM/MC,3L,2T	Y	Y	-	
Sansui AU-Alpha 607	1300	Int	N	90	MM/MC,2L,1T	Y	Y	-	
Sansui AU-Alpha707	1500	Int	N	90	MM/MC,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
Shearman Phase II	549	Int	N	50	4L,2T	N	N	-	
Shearman Phase 1 Pre	1099	Pre	N	-	MM/MC/4L,2T	N	N	-	
Shearman Phase 1 Power	1199	Pwr	-	80	-	-	-	-	Dual mono
Sherwood AI 2210	60	Int	N	30	MM,3L,1T	Y	N	-	
Sherwood AI 1110	100	Int	N	55	MM,4L,1T	Y	N	-	
Sherwood AI 5010	170	Int	N	70	MM,3L,2T	Y	N	-	
Sherwood AM/AVP8500	800	-	Y	230	-	Y	Y	-	A/V Pre/power amp
Sirius Control Unit	720	Pre	N	-	6L,2T	N	N	23,5,19	Passive preamp
Sirius 7B	2492	Pwr	N	200	-	N	N	30,23,19	1x monoblock
Sonic Link DM20	349	Int	N	25	MM,3L,1T	Y	N	23,8,43	
Sonic Link DM20 Gold	598	Int	N	30	MM/MC,3L,1T	Y	N	23,8,43	
Sonic Link DM30	725	Int	N	25	MM/MC,3L,1T	N	N	23,8,43	
Sony TAF211B	150	Int	N	30	MM/2L	Y	N	43,14,31	Source direct
Sony TAF244B	200	Int	N	40	MM/2L	Y	N	43,14,31	MOSFET power stage
Sony TAF44E	260	Int	N	50	MM,3L,2T	Y	N	43,15,38	

Model	Price	Type	A/V	Power	Inputs	Headphones	Remote	Size	Special
AMPLIFIERS									
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	-	-	
Teac A-X1030	180	Int	N	40	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X3030	220	Int	N	60	MM,3L,2T	Y	N	44,13,36	Mic input
Teac A-X5030	260	Int	N	75	MM/MC,3L,2T	Y	N	44,16,36	
Technics SU-V300	150	Int	N	40	MM,2L,1T	Y	N	43,13,32	A/B speaker select
Technics SU-V300	190	Int	N	50	MC/MM,3L,2T	Y	Y	43,13,32	
Technics SU-A600	200	Int	N	40	MC/MM,3L,2T	Y	N	43,13,32	
Technics SU-A700	250	Int	N	45	MC/MM,3L,2T	Y	Y	43,13,32	
Technics SU-A800 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	
Technics SU-C2000	700	Pre	N	-	-	N	Y	45,13,35	
Technics SE-A2000	1050	Pwr	-	100	-	-	Y	45,19,44	Meters, R-Core, MOS AA
Tesseract TAADA	1500	Pre	N	-	MM/MC	N	N	-	
Tesseract TALA	1500	Pre	N	-	5L,1T	Y	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 TTP2000	500	Pre	N	-	MM/MC,4L	N	N	-	Minimalist, shoebox form
Thorens TTA2000	550	Pwr	N	35	-	-	-	-	Neo-Class A
Thule IA50	599	Int	N	50	4L,1T	N	N	-	Fully balanced operation
Thule IA100	899	Int	N	100	4L,2T	N	N	-	Fully balanced operation
Triangle TE60	549	Int	N	60	5L,1T	Y	N	-	
Triangle TE60SE	649	Int	N	70	MM/MC,4L,1T	Y	N	-	
Triangle Nemo Allion 02	1550	Int	N	80	5L,2T	N	N	-	
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	-	1 channel monoblock
Woodside MA50 Class A	1224	Pwr	-	50	-	-	-	-	
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							



THE HI-FI LAW OF DIMINISHING RETURNS

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

Heads - 2 - combination record/play heads; 3 - independent record/play heads, allowing real time off tape monitoring.
Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Dolby NR	HX Pro	Heads	Size	Special
CASSETTE DECKS							
JVC TD-W308BK	200	T,AR	B,C	Y	2	44,13,33	Twin, one recording deck
JVC TD-V562BK	220	S	B,C	Y	3	44,13,33	Cassette stabiliser
JVC TD-W708BK	250	T,AR	B,C	Y	2	44,13,33	Twin record/play
JVC TD-V662BK	270	S	B,C	Y	3	44,13,33	Dual capstan
Kenwood KX-3060	170	S	B,C	Y	2	44,12,37	Tape path stabiliser
Kenwood KX-W4060	180	T	B,C	Y	2	44,13,30	Computer controlled recording
Kenwood KX-W6060	200	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-5060S	235	S	B,C,S	Y	2	44,12,30	Auto bias
Kenwood KX-W8060	260	T	B,C	Y	2	44,13,30	Auto bias
Kenwood KX-7060S	400	S	B,C	Y	3	44,13,30	Auto tape calibration
Luxman K322	200	S	B,C	Y	2	13,44,18	Remote control, music search
Luxman K373	500	S	B,C	Y	3	13,44,35	System bus, mic inputs
Marantz SD-53	200	S	B,C	Y	2	43,14,30	D-bus
Marantz SD-415	210	T	B,C	Y	2	43,14,30	D-bus, mic mixing
Marantz SD-63	269	S	B,C	Y	3	43,14,30	D-bus
NAD 602	200	S	B,C	Y	2	-	Play Trim
NAD Monitor 6100	299	S	B,C	Y	2	-	Play Trim, remote cntrl, Dyneq
Nakamichi DR-3	400	S	B,C	N	2	43,10,32	
Nakamichi DR-2	600	S	B,C	N	3	43,10,32	Diffused resonance transport
Nakamichi DR-1	850	S	B,C	N	3	43,10,32	Manual azimuth calibration
Nakamichi CR-7E	1995	S	B,C	N	3	44,14,30	Auto tape calibration, R/C
Nakamichi Dragon	2350	AR	B,C	N	3	45,14,30	Auto azimuth correct
Onkyo TA201	200	S	B,C	Y	2	46,12,13	
Onkyo TA-RW313	250	T	B,C	Y	2	46,12,31	
Onkyo KR-609	350	AR	B,C	Y	2	28,12,31	Mini component
Onkyo TA250	350	S	B,C	Y	3	46,12,31	
Onkyo K-W606	370	T,AR	B,C	Y	2	28,12,32	Mini component
Onkyo K-611	430	AR	B,C	Y	3	28,12,32	Mini component
Pioneer CT-S330	170	S	B,C	Y	2	42,13,28	Audio tape setup, FLEX
Pioneer CT-W503R	200	T,AR	B,C	Y	2	42,13,25	Auto NR, FLEX
Pioneer CT-S430S	200	S	B,C,S	Y	2	42,13,28	Auto tape setup, FLEX, Dolby S
Pioneer CT-W603RS	230	T,AR	B,C,S	Y	2	42,13,25	Auto tape setup, FLEX, Dolby S
Pioneer CT-W803RS	300	T,AR	B,C,S	Y	2	42,13,25	Twin record, mic i/p
Pioneer CT-S630S	300	S	B,C,S	Y	3	42,13,38	Auto tape setup
Pioneer CT-M601R	380	AR	B,C	Y	2	42,14,38	Six tape record/play, r/cntrl
Pioneer CT-S830S	500	S	B,C,S	Y	3	42,14,38	Slant Z transport mech
Pioneer CT-95	1000	S	B,C,S	Y	3	44,15,38	Copper plated chassis
Sansui D-X117HX	220	S	B,C	Y	2	-	
Sherwood DS1150	80	S	B,C	N	2	-	
Sherwood DS1010C	100	S	B,C	Y	2	-	Mic input
Sherwood DD1030C	100	T	B	N	2	-	
Sherwood DS3010C	120	S	B,C	Y	2	-	
Sherwood DD3010C	150	T	B,C	Y	2	-	
Sony TCFX211B	100	S	B,C	N	2	43,12,29	
Sony TCK 215B	130	S	B,C	Y	2	43,12,31	Tape calibration
Sony TCK311B	130	S	B,C	Y	2	43,12,31	Auto calibration
Sony TCW445B	150	T	B,C	Y	2	43,12,31	Full logic control
Sony TCK415B	180	S	B,C	Y	3	43,12,31	UK optimised sound
Sony TCWR545B	200	T	B,C	Y	2	43,12,29	Auto calibration
Sony TCWR645S	250	T	B,C,S	Y	2	43,12,31	UK optimised sound
Sony TCK511S	250	S	B,C,S	Y	3	43,12,31	UK optimised sound
Sony TCK611S	300	S	B,C,S	Y	3	43,12,30	UK optimised sound
Teac V-600	150	S	B,C	Y	2	-	Fine bias
Teac W-700R	220	T,AR	B,C	Y	2	44,15,29	
Teac V-1010	250	S	B,C	Y	3	44,15,29	Fine bias
Teac V-3010	350	S	B,C	Y	3	44,15,36	Copper chassis, remote
Teac V-2020S	380	S	B,C	Y	3	44,15,29	Tape calibration
Teac W-6000R	450	T,AR	B,C	Y	2	44,15,33	Pitch control, remote
Teac R-9000S	500	AR	B,C	Y	3	49,15,36	Remote control
Teac V-8000S	700	S	B,C,S	Y	3	48,15,36	Direct drive, tape cal, remote
Technics RS-TR375	180	T,AR	B,C	Y	2	43,14,29	Play transport unidirectional
Technics RS-BX501	180	AR	B,C	Y	2	43,13,29	Mic inputs, auto tape cal
Technics RS-TR474	200	T,AR	B,C	Y	2	43,14,29	
Technics RS-BX646	230	S	B,C	Y	3	43,13,30	Auto tape cal, remote ready
Technics RS-TR575	250	T,AR	B,C	Y	2	43,14,29	Optical quick reverse
Technics RS-BX747	300	S	B,C	Y	3	43,13,30	Fine bias adj, THC lo-red base
Technics RS-TR979	380	T,AR	B,C	Y	2	43,13,28	Both decks record, quick rev
Yamaha KX-650	260	S	B/C	Y	3	-	
Yamaha KX-W952	500	T	B,C	Y	2	-	



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

Remote Control - Y - yes, N - No.
Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
Audiomeca Mephisto SE	2149	-	E,O	Y	43,15,33	
Aura CD50	400	BS	E	Y	43,7,34	
Aura CD50CHR	450	BS	E	Y	43,7,34	Chrome finish
AWI S2000 MCII	799	BS	-	-	31,25,9	Low noise clock system
AWI S2000MC	1149	MB	E	Y	31,25,9	20 bit Burr Brown DACs
Cambs CD200 Mk II	150	1bit	-	Y	42,9,29	
Cambridge Audio CD200	150	MB	N	Y	42,9,29	Can play in reverse order
Denon DCD-615	180	MB	E	Y	44,11,29	Digital attenuator
Denon DCD-1290	330	MB	O	Y	44,13,32	UK specified components
DPA Renaissance	895	MB	E,O	Y	-	DPA DP16 DAC
Dual CD1135RC	140	MB	E	Y	42,8,28	Var. headphone out
Dual CD1150RC	150	MB	E	Y	-	Var. headphone out
Dual CD1000RS	170	BS	E	N	-	Remote control via CR9000RS
Dual CD1180RC	180	BS	E	Y	44,9,29	Var. headphone out
Eclipse CD101	80	MB	-	Y	36,8,29	
Eclipse CD420	100	MB	-	Y	42,8,29	
Goodmans Delta 700	110	MB	N	Y	-	
Goodmans GCD360R	120	MB	N	Y	-	
Grundig CD210	120	BS	E	Y	36,8,30	30 mem, random repeat
Grundig CD1	140	BS	E	Y	44,9,30	30 track memory, auto-space
Grundig CD2	190	BS	E	Y	44,9,30	
Grundig CD3	240	BS	E	Y	44,9,30	F.T.S., display off, fade, DAC7
Harman-Kardon HD7225	230	BS	-	Y	45,10,33	
Harman-Kardon HD7325	299	BS	E,O	Y	45,10,33	
Harman-Kardon HD7425	349	MB	E	Y	45,10,33	
Harman-Kardon HD7525	449	MB	E	Y	45,10,33	
Harman-Kardon HD7625	549	MB	E	Y	45,10,33	
Harman-Kardon HD7725	799	MB	E,O	Y	45,10,33	
Jadis JS-1	8068	MB	-	-	-	
JVC XL-V174BX	140	1bit	-	Y	44,10,28	
JVC XL-V274BK	160	1bit	-	Y	44,10,28	
JVC XL-2674	300	1bit	-	Y	44,11,28	
JVC XL-M408BK	300	1bit	-	Y	44,13,32	Six disc
JVC XL-Z1050TN	500	1bit	E	Y	45,11,34	
JVC XL-MC100	800	1bit	-	Y	36,37,38	100 disc player
Kenwood DP-2060	160	1bit	-	Y	44,10,26	Central mechanism
Kenwood DP-R4060	200	1bit	-	Y	44,12,38	Five disc carousel
Kenwood DP-3060	200	1bit	-	Y	44,10,26	High precision master clock
Kenwood DP-M6060	250	1bit	-	Y	44,12,36	Multiplay CD 6+1 disc
Kenwood DP-5060	250	1bit	O	Y	44,12,31	D.R.I.V.E.
Kenwood DP-7060	380	1bit	O	Y	44,12,31	D.R.I.V.E.
Krell KPS20i	3278	-	E	Y	-	Balanced out, Bit String conv
Krell CD-DSP Mk II	5000	-	-	Y	42,13,28	Digital inputs facility
Krell CD DSPII 5000	5000	MB	2E	Y	42,13,28	Has digital in, balanced out
Krell KSP20i	9950	-	E	Y	-	Balanced out, top loader
Linn Mimik	798	DS	E	Y	32,8,33	BNC digital
Linn Karik	1497	DS	E,O	Y	32,8,33	BNC digital
Luxman D322	200	MB	-	Y	44,10,28	18bit, 8x oversampling
Luxman D373	600	MB	O	Y	44,11,35	System bus remote
Marantz CD-53	200	BS	E	Y	43,9,30	New transport, DAC, circuit
Marantz CD-63	250	BS	E,O	Y	42,9,30	As CD-53
Marantz CD-52 II SE	300	BS	E	Y	42,12,28	Selected passive components
Marantz CD-72SE	600	BS	E,O	Y	42,12,28	As CD-52, 4v output
Marantz CD-10	1200	BS	E,O	Y	46,14,36	Twin DAC-7, heavy build
McIntosh MCD7008	1995	MB	E	Y	-	Seven disc multiplay
Meridian 506	795	DS	E,O	N	33,9,34	Recently improved sound
Meridian 606	1350	1bit	3E,O	N	-	
Meridian 508	1350	DS	E,O	N	33,9,34	
Metaxas PHOS	1750	BS	E,O	Y	42,16,42	
Micro-Seiki CD-M2DC	3695	MB	E	Y	-	
Micro-Seiki CDM2000X	4689	MB	E	Y	-	
Micromega Stage 1	450	BS	E	Y	43,28,88	Upgradable
Micromega Stage 2	600	BS	E	Y	43,28,88	Upgradable
Micromega Stage 3	800	BS	E	Y	43,28,88	Upgradable
Micromega Trio	6000	BS	E	Y	34,48,31	AES/Toslink digital output
Mission DAD7	900	MB	E	Y	22,8,36	
Mission Discmaster	1900	MB	E	Y	22,8,36	Two box, inc Dacmaster DAC
Musical Fidelity E600	599	BS	E	Y	44,12,35	Balanced XLR output
Musical Fidelity FCD	1499	BS	2E,O	Y	49,12,33	XLR balanced out, tube o/p sta
NAD 501	180	BS	-	N	-	
NAD 502	220	M	E	Y	-	
NAD Monitor 5000	309	M	E	Y	-	
NAD 517	400	BS	E	Y	44,108,40	5-disc carousel player
Naim CD3	898	MB	-	Y	32,6,30	1 box
Naim CD1	1862	MB	-	Y	43,16,30	One box
Naim CD5	3398	MB	-	Y	43,16,30	Two box
Nakamichi MB-4S	299	MB	-	Y	43,10,27	Multi-CD, 16 x 4 oversampling
Nakamichi CD4	380	MB	E	Y	43,10,32	
Nakamichi MB3	650	MB	-	Y	43,10,38	Multi CD, 18x8 oversampling
Nakamichi MB2	850	MB	E	Y	43,10,38	Multi-CD, 20x8 oversampling
NVA CD Tube	1100	1bit	E	Y	-	
NVA T.E.S.	2000	BS	E	Y	-	
NVA T.T.S	3200	BS	E	Y	-	
NVA T.L.S	3300	BS	E	Y	-	
Onix CD33	999	BS	-	-	43,8,33	DAC7
Onkyo DX710	200	1bit	O	Y	46,11,31	
Onkyo DX703	240	1bit	O	Y	46,11,31	
Onkwo C-711	290					

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Key to compact disc players, transports and DACs
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 Size - width x height x depth in cm.

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Model	Price	Dac Type	Outputs Dig	Remote	Size	Special
CD PLAYERS						
Onkyo DX-C110	350	1bit	0	Y	46,12,43	
Onkyo DX750	350	1bit	0	Y	46,11,31	
Orelle CD-100	500	MB	E	Y	44,10,28	DC coupled
Philips CD710	120	MB	-	Y	-	16 bit continuous technology
Philips CD740	130	MB	E	Y	-	Hybrid 5-bit DAC
Philips CD720	130	MB	-	Y	-	16 bit Continuous Calibration
Philips CDC745	199	BS	E	Y	-	Multi-disc tray
Philips CD750	199	BS	E	Y	-	Selected BS DAC, differential
Pioneer PD-77	100	1-bit	E,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 & remo
Pioneer PD-S503	200	1-bit	-	Y	42,11,29	Legato Link
Pioneer PD-M603	250	1-bit	-	Y	42,11,30	Six disc
Pioneer PD-S703	300	1-bit	0	Y	42,13,27	SPM, Legato Link, twin PSU
Pioneer PD-M703	300	1-bit	-	Y	42,13,30	Six disc, DSP soundfield cntrl
Pioneer PD-DM802	450	1-bit	-	Y	42,14,31	Dual magazine 12-disc
Pioneer PD-S901	499	1-bit	E,0	Y	42,13,33	SPM, Legato Link, Twin DAC
Pioneer PD-TM3	500	1-bit	-	Y	42,18,35	Triple magazine, 18-disc
Pioneer PD-F100	600	1bit	-	Y	42,19,40	100 disc, Legato Link
Pioneer PD-95	2500	1-bit	E,0	Y	44,16,34	Balanced out, Legato, SPM
Quad CD67	825	DS	E	Y	33,8,26	For use with 66 system
Roksan ATT-DP2P MkII	1495	DS	E	Y	46,12,35	Player, four level isolation
Rotel RCD-930AX	200	1bit	-	Y	44,9,29	
Rotel RCD-940BX	250	MB	-	Y	44,10,32	
Rotel RCD-965BX	300	BS	E	Y	44,10,32	Audiophile components
Rotel RCD-970BX	375	BS	E	Y	44,8,30	
Rotel RCD-965BX D	375	BS	E	Y	44,10,32	Discrete output
Rotel RCD-965BX LED	425	BS	E	Y	44,10,32	Discrete & slit foil caps
Sansui CD-270	180	BS	N	N	-	
Sansui CD-117K II	200	MB	N	N	-	
Sansui CD-X2171	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	Mid-size, full remote control
Sony CDP-312	150	1bit	-	Y	43,10,29	Digital servo
Sony CDP-C325M	230	1bit	N	Y	36,10,39	Mid size, 5-disc player
Sony CDP-C345	230	1bit	-	Y	43,13,39	Five disc player
Sony CDP-715E	250	1bit	0	Y	43,11,30	UK optimised sound
Sony CDP-915E	300	1bit	0	Y	43,11,36	UK optimised sound
Sony CDP-CX100	800	1bit	0	-	43,13,38	100 disc autochanger
Teac CD-P3500	200	BS	E	Y	44,12,28	
Teac CD-P4500	280	BS	E	Y	44,12,29	Digital attenuator
Teac VRDS-7	600	BS	E,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	1300	BS	E,0	-	50,15,34	Twin DAC7, balanced output
Teac X-1	2500	MB	0	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-PS740A	250	M	0	Y	43,13,29	Centre tray
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						
Micromega Duo CD3-1	1350	-	E,0	Y	34,9,31	Top loading, AES/EBU out
Micromega Duo CD2-1	2500	-	E,0	Y	34,9,31	Top loading, AES/EBU out
Orelle CD10-T	799	-	E	Y	44,10,32	Isolated PSU, silver wiring
Pink Triangle Cardinal	750	-	-	-	46,8,36	Upgradable transport & player
PS Audio Lambda tr	1990	-	E	Y	38,8,34	AT&T, AES/EBU optional
Roksan ATT-DP2 MkII	1295	-	E	Y	46,12,35	AT&T optical, AES/EBU optional
Roksan ATT-DP2A	1490	-	-	Y	46,12,35	AT&T optical
Teac P-700	900	-	E,0	Y	23,14,40	Half width, anti-resonance cha
Teac P-2	3500	-	E,0	Y	23,14,49	
Teac P-2S	4300	-	0,E	Y	23,14,49	Gold plate circuit boards
Theta Data Basic	1997	-	E	Y	42,8,34	AT&T, AES/EBU option
Theta Data II NTSC	3290	-	E	Y	42,12,40	AT&T, AES/EBU option
Theta Data II PAL	3490	-	E,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	

Model	Price	Dac Type	Outputs 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-box20	200	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/0	Y	-	
Audio Research DAC2	3940	MB	-	-	48,14,26	20bit, 8x o/s
Audiolab 8000DAC	800	BS	-	-	45,8,36	Balanced AES/EBU input
Audiomeca Elixir	699	BS	E,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	MB	-	-	-	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/EBU balanc
Counterpoint DA-10E	1675	-	E,0	Y	-	Interchangeable DACs, optional
DPA Renaissance	550	MB	-	-	-	Unique DPA DX16 DAC
DPA Enlightenment	795	MB	-	-	-	
DPA PDM256	2995	MB	-	-	-	Unique DPA DX64 DAC
DPA PDM10924	5995	MB	-	-	-	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	
Metasas 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 DigiLink II	688	MB	-	-	38,8,16	
PS Audio SuperLink 2	1230	MB	-	-	38,8,16	
PS Audio UltraLink 2	2650	MB	-	-	38,6,20	AT&T input option
PS Audio Ref Link	5490	MB	-	-	38,8,36	AT&T input
QED Positron	89	-	-	-	-	Upgrade PSU for Digi
QED Digi Plus	139	BS	E	N	-	
QED Digi Reference	299	BS	-	-	-	Combined 2x Positron/Digi
Roksan ATT-DA2	549	DS	-	N	22,10,33	DAC 4 inputs, optional AT&T
Sentec Diana	993	MB	E,0	-	-	
Teac D-700	600	MB	E,0	-	23,14,40	Matches P-700, 4x20bit
Teac D-2	2500	MB	-	-	23,14,49	18 bit, balanced output
Theta Pro-Prime II	1800	BS	E	-	42,5,23	
Theta Probasic II	2299	MB	-	-	42,5,29	
Theta Pro Gen III	5690	MB	-	-	42,8,34	AT&T input option
Theta Pro Gen V	8500	MB	E	N	42,8,34	
Wadia 12	1530	MB	E,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	-	-	

Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory.

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	875	-	E,0	Y	29,10,32	
Audiomeca Kreatura	999	-	E,0	Y	25,14,39	Heavily modified CDM
Audiomeca Mephisto	1999	-	E,0	Y	43,15,33	Integral platter, layer suspen
Counterpoint DA-11E	1495	-	E,0	Y	-	
DPA Enlightenment	635	-	-	Y	-	Clock locks to DPA DACs
DPA T1 Transport	895	-	-	Y	-	'Deltran' clock locking (with
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</

108 HI-FI CHOICE BUYER'S GUIDE



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.

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Model	Price	Type	Dig. In	Dig. Out	DAC Type	Size	Special
DIGITAL RECORDERS							
JVC XM-D1BK	900	MD	E,O	E,O	BS	18,5,13	
Marantz DD-82	399	DCC	E,O	E,O	MB/BS	42,15,34	DAC7 output
Meridian CDR	4500	CD-R	E,O	E	BS in/	-	
Nakamichi 10007	0	DAT	E,O	E,O	MB in/	-	
Philips DCC300	179	DCC	E	Y	BS in/	36,11,30	
Philips DCC600	199	DCC	E	Y	BS in/	44,12,30	
Philips DCC951	300	DCC	E,O	E	MB	-	TurboDrive mech, 18 bit
Pioneer D-05	800	DAT	-	-	-	-	96kHz sampling
Pioneer D-07	1150	DAT	E,O	E,O	-	44,14,38	96kHz record, Legato Link
Sharp MD-M11E	450	MD	-	Y	-	8,3,11	Recorder, title generator
Sony MBS501	800	MD	E,O	E,O	BS	43,9,35	Sample rate converter
Sony DTC80ES	800	DAT	E,O	E,O	BS	43,11,55	SMB
Technics RS-DC8	400	DCC	E,O	E,O	BS	43,12,35	

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Aiwa HP-V141	7	Ear	5	16	Bass resonator ducts
Aiwa HP-A160	7	Opn	45	32	Banded, 3.5/6.3mm
Aiwa HP-JB33	8	Opn	18	16	Vertical ear fit, ultra light
Aiwa HP-V143	9	Ear	5	16	Bass resonator ducts
Aiwa HP-A260	9	Opn	54	32	Banded, bass resonator ducts
Aiwa HP-V145	10	Ear	5	16	Carrying case included
Aiwa HP-V147	10	Ear	5	16	Bass resonator ducts
Aiwa HP-X201	13	Slid	230	-	Dual plug
Aiwa HP-A360	13	Opn	65	40	Banded, bass resonator ducts
Aiwa HP-X301	20	Slid	230	-	3m lead, dual plug
Aiwa HP-VX303	25	Slid	230	-	In-line controls, dual plugs
Aiwa HP-X705	40	Slid	130	-	Dual plug, 2m ext cable
AKG K2	23	Opn	70	200	Mini
AKG K33	25	Opn	90	50	
AKG K44	42	Opn	90	50	
AKG K135	46	Opn	160	150	
AKG K141	74	Opn	225	600	
AKG K240 Monitor	82	Opn	240	600	
AKG K270	112	Slid	250	75	
AKG K280 Parabolic	117	Opn	250	75	
AKG K400	118	Opn	250	120	
AKG K270 Studio	121	Slid	250	75	
AKG K500	138	Opn	250	120	
AKG K340	191	Opn	380	400	
AKG K1000	646	Opn	270	120	
Audio Technica ATH-309	36	Opn	140	30	
Audio Technica ATH-M4X	39	Opn	140	30	
Audio Technica ATH-909	60	Opn	200	600	
Audio Technica ATH-01	80	Opn	200	600	
Audio Technica ATH-910	90	Slid	200	600	
Audio Technica ATH-9000	245	Opn	240	32	
Beyer DT211	33	Opn	120	40	
Beyer DT311	49	Opn	124	40	
Beyer DT331	59	Opn	210	40	
Beyer DT411	69	Opn	120	250	
Beyer DT431	89	Opn	210	40	
Beyer DT511	99	Opn	200	250	
Beyer DT990	119	Opn	200	600	
Beyer DT531	129	Opn	245	250	
Beyer DT100	135	Slid	350	600	
Beyer DT801	159	Slid	250	250	
Beyer IRS790	179	Opn	270	-	Cordless infra-red
Beyer DT811	179	Opn	245	250	
Beyer DT770 Pro	185	Slid	250*	600	
Beyer IRS890	199	Opn	270	600	
Beyer DT990 Pro	199	Opn	230	600	
Beyer DT901	199	Slid	280	250	
Beyer DT911	219	Opn	275	250	
Grado Prestige SR60	90	Opn	-	40	
Grado Prestige SR80	125	Opn	-	40	
Grado Prestige SR100	175	Opn	-	40	
Grado Prestige SR200	230	Opn	-	40	
Grado Prestige SR300	320	Opn	-	40	
Grado Signature HP3	410	Opn	-	40	
Grado Signature HP2	510	Opn	-	40	
Grado Signature HP1	615	Opn	-	40	
Jacklin Float Model 1	75	Opn	400	200	
Jacklin Float Model 2	99	Opn	400	200	
Jacklin Float ELS	399	Opn	600	8	Electrostatic
JVC HA-M3	6	Slid	33	32	1.2m dual plug lead
JVC HA-F15	9	Opn	6	16	1.2m dual plug lead
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



Key to headphones
 Price - typical retail, to nearest pound.
 Type - Opn - open back, vented or velocity type; gives less environmental isolation, but is usually more natural feeling in extended use. Slid - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - infra red cordless. Ear - in-ear model.

Impedance - in ohms.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Weight - without cable.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
JVC HA-D710	55	Slid	210	32	3m, 6.3/3.5m jacks
JVC HA-D910	65	Slid	220	32	3m, 6.3/3.5m jacks
JVC HA-D1000	250	Slid	340	32	5m, 6.3/3.5m jacks
Kenwood KH-535	15	Ear	-	32	3.5mm plug
Kenwood KH-757	20	Ear	-	32	3.5mm plug
Kenwood KH-1000	20	Opn	30	32	2m OFC lead
Kenwood KH-959	25	Ear	-	32	3.5mm plug
Kenwood KH-2020	40	Slid	210	32	2.5m OFC lead
Kenwood KH-5000	70	Slid	280	32	2.5m OFC lead
Koss HP/1	6	Opn	35	27	
Koss HP/3	7	Ear	5	27	
Koss HP/5	11	Ear	12	28	
Koss HP/6	15	Opn	75	92	
Koss HP/7	20	Opn	55	90	
Koss TD60	29	Slid	150	27	
Koss TD65	45	Slid	150	100	
Koss MAC5	45	Opn	100	60	
Koss TD75	59	Slid	330	150	
Koss Porta Pro Jnr	59	Opn	65	60	
Koss Porta Pro 1	65	Opn	65	60	
Koss MAC7	65	Slid	160	60	
Koss Porta Pro 2000	95	-	-	-	
Koss Pro 480	115	Clid	250	100	
Koss Pro 4AA	129	Slid	425	230	
Koss JCK200	195	Slid	240	100	Cordless infra-red
Koss JCK300	350	Slid	240	100	Cordless infra-red
Koss ESP950	1995	Opn	350	-	Electrostatic
Maxell EB-125	4	Ear	15	32	Stereo ear buds
Maxell HP-100	4	Ear	3	32	Replaceable pads, 1m lead
Maxell HP-200	5	Opn	30	32	Replaceable pads, 1m lead
Maxell EB-225	8	Ear	44	21	Stereo ear buds, wind 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, wind case
Maxell HP-700	10	Opn	56	22	Adjustable locking headband
Maxell HP-500	13	Opn	45	32	2.7m lead, 6.3/3.5mm fit
Maxell HP-1000	15	Opn	95	32	2.7m lead, digital ready
Maxell HP-2000	20	Opn	140	32	Volume control digital ready
Maxell HP-3000	30	Sed	120	32	Volume control digital ready
Nakamichi SP7	70	Opn	150	45	
Pioneer SE-5	16	Opn	60	30	2m OFC cable
Pioneer SE-15	20	Opn	65	30	2m OFC cable
Pioneer SE-32	23	Opn	94	40	2.5 OFC cable
Pioneer SE-52	25	Opn	104	40	2.5 OFC cable
Pioneer SE-15V	30	Opn	65	30	5m OFC cable
Pioneer SE-330D	35	Slid	165	35	3m cable, bass boost duct
Pioneer SE-400D	37	Slid	185	35	3m cable, dual bass horn
Pioneer SE-500D	48	Slid	175	35	3m cable, dual bass horn
Pioneer SE-700D	60	Slid	180	35	3m cable, dual bass horn
Ross RIH-150	6	Ear	5	16	Inner ear headphone
Ross RE-235	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 RIH-360CD	9	Ear	16	16	Vertical inner ear
Ross RE-2060CD	9	Opn	5	16	Inner ear headphone
Ross RMH-310TV	10	Opn	51	8	For video and TV
Ross RIH-550	10	Ear	5	16	Inner ear, with volume control
Ross RIH-460CD	12	Ear	16	16	Vertical inner ear, volume pot
Ross RDH-200CD	13	Slid	150	8	Closed back
Ross RDH-100CD	15	Slid	144	8	CD headphone
Ross RDH-300CD	17	Slid	155	8	CD headphone
Ross RDH-400CD	22	Slid	186	8	Digital headphone
Sennheiser HD16	8	Opn	45	32	Mini, 1.2m lead, dual plug
Sennheiser HD36	11	Opn	62	32	Mini, 1.2m lead, dual plug
Sennheiser HD56	13	Opn	72	32	Mini, 1.2m lead, dual plug
Sennheiser Vegas	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser Manhattan	25	Opn	118	32	3m lead, 3.5/6.3mm
Sennheiser HD440 II	35	Opn	125	60	3m lead, 3.5/6.3mm
Sennheiser HD60TV	36	Opn	118	32	6.8m lead (inc vol control)
Sennheiser HD320	45	Opn	120	60	3m lead, 3.5/6.3mm
Sennheiser HD330	60	Opn	120	100	3m lead, 3.5/6.3mm
Sennheiser HD340	70	Opn	120	100	Single sided cable
Sennheiser HD25 SP	80	Slid	115	85	Monitoring headphone
Sennheiser HD535	90	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD545 Reference 110	Opn	255	150	3m lead, 3.5/6.3mm	
Sennheiser Set 90/UK	130	Ear	40	-	Mono, infra-red cordless
Sennheiser HD565 Ovalion	130	Opn	255	150	3m lead, 3.5/6.3mm
Sennheiser HD265 Linear	130	Slid	260	150	Closed back
Sennheiser HD25	145	Slid	140	70	Professional closed back
Sennheiser IS450	150	-	160	-	Infra-red cordless - hi-fi
Sennheiser Set 180/UK	150	Ear	43	-	Stereo infra-red cordless

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.

Choosing a good hi-fi dealer is the most vital step in acquiring the system that is right for you. This unique directory gives full information on dealers able to help in your area.

DEALER Directory

Members of the British Audio Dealers Association are able to offer:



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AUDIO EXCELLENCE, 65 Park Street, Bristol. (0117) 9264975. Great hifi carefully selected and demonstrated by friendly enthusiastic staff. Closed Mon. **BADA**

PAUL GREEN HI-FI LTD, c/o Harper Furnishings, Kensington Showrooms, London Road, Bath BA1 6AD. (0225) 316197. Technics, Denon, Sony, Rotel, AVI, Quad, Rogers, Mission, Tannoy, Aura and many many more. 2 demo rooms, home demos, appointments required, service dept, free install, home trial. Access, Visa, Int free credit, instant credit. Tue-Fri 9-5.30, Sat 9-5, closed Monday.

RADFORDS, 12 James Street West, Bath, BA1 2BX. Tel 0225 446245. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

RADFORDS, 52-54 Gloucester Road, Bristol, BS& 8BH. Tel (0117) 9428247. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Service depts, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

THE RIGHT NOTE, Tel (01225) 874728 and (01426) 315092. We specialise in giving upgrade advice and demonstrations in your own home, where you can best judge the benefits. Your long term satisfaction is our aim. Brands stocked for their excellent sound (not just a passing review), their reliability and suppliers' back-up: Lumley Reference (amps and speakers), Michell, Orelle, CAT, Magnum Dynalab, Transfiguration, NEAT, Musical Technology, Cogan Hall, Silver Sounds, MAF, Atacama.

V AUDIO, 36 Druid Hill, Stoke Bishop, Bristol B59 1EJ. (0117) 9686005. Alon, ATC, AVI, Acoustic Energy, Audio Innovations, Audio Technica, AMC, Analogue Electronics, Cadence Valve, Chord Amps, Electronic Companies, Exposure, Goldring, Harman Kardon, Heybrook, Jamo, LFD, Pink Triangle, Ruark, Michell, REL, Sansui, SME (inc20A), Sonic Link, Stax, Townshend, Wadia. Demos by appt only, home trial facilities, free installation, service facilities. Access, Visa. For full product listing please see Dealer Guide.

BERKSHIRE

ARC AUDIO, 9 Dukes Ride, Crowthorne, Berks, RG116L2. (0344) 762201. Denon, Harman Kardon, JPW, Marantz, Monitor Audio, Onix, Rogers, Ruark, Tannoy, Thorens, Yamaha. Demo facilities, no appt necessary, home trial facilities, free install. Access, Visa, Diners. Open Mon-Sat 9-6pm (closed Wed at 1pm)

LAKES, 37 Stoke Road, Slough, Tel (01753) 538287. For better hi-fi in the Thames Valley. Agents for: Technics, Kenwood, Rotel, B&W, Nakamichi, Mordaunt Short, Sony, Panasonic, Mitsubishi, Philips, Aiwa, JVC, Wharfedale, Infinity. Free delivery. Dem rooms at High Wycombe, Aylesbury, Marlow, Maidenhead, St Albans, Chiswick High Road, London, and Bracknell. Please see our advert in the Dealer Guide or ring for your nearest branch.

RADFORDS, 43 King Edward Court, Windsor, SL4 1TG. Tel 0753 85693. Visit us for the best range of Hi-Fi in the South-West. Linn, Naim, Meridian, Quad etc. Home Installation Service, Demonstration rooms, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

READING

B&B HI-FI, 11-12 Market Place, Reading, Berkshire, RG1 2EG. (0734) 583730. Aiwa, Denon, Kenwood, Mission, NAD, Panasonic, Pioneer, Rotel, Sony, Technics. Free installation, Service dept. Access, Visa, Credit Facilities including interest free credit subject to status. 9.30-5.30, Sat 9-5.30. Also at: Bracknell, Maidenhead, High Wycombe, Newbury.

HI-FI CENTRE, 4 Queen's Walk, Broad Street Mall, Reading RG1 7QF. (0734) 585463. Your first choice for real hi-fi and home cinema sound. Arcam, Audiolab, B&W, Celestion, Micromega, Meridian, Quad, Rega, Rotel, Yamaha etc. Demonstration facilities (including home cinema). Free local installation. Bada guarantee. Open Tues-Sat 10am-6pm **BADA**

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D.L. CHITTENDEN LIMITED, 59-61 The Broadway, Chesham, Bucks, HP5 1BX. (0494) 784441 Philips, Mordaunt-Short, Castle, Denon, Kenwood, Canon Audio, Koss, Wharfedale. Nican TV & Video, Surround Sound, AV Systems. Showroom Demonstrations from expert and friendly staff. No appts nec. Service Dept. Credit facilities available. Open 8.30 to 17.30 Mon-Sat.

FACTORS SOUND AND VISION, 16 Hill Avenue, Amersham, Buckinghamshire HP6 5BW. (0494) 432944. Sony, Panasonic, Kenwood, Technics, JVC, Denon, JPW, KEF, Tannoy, Bose, Aiwa, Grundig. In shop and in home facilities. No appts required, service dept, free install, home trial. Access, visa, int free credit. Open Mon-Sat 9.30-5.30, closed Thur.

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UNIVERSITY AUDIO, 1-2 Peas Hill, Cambridge. (0223) 354237. Mission-Cyrus, Arcam, Rotel,

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AUDIO COUNSEL, 14 Stockport Rd, Cheadle, Cheshire. (0161) 428 7887. Please see entry under Greater Manchester. **BADA**

CHRIS BROOKS HI-FI, 29 Gaskell St, Stockton Heath, Warrington. (0925) 261212. Tues-Sat 10-6. 3 dem rooms. Credit facilities. All credit cards. Total absence of bull****. **BADA**

CONGLETON HI-FI, 1/1a Duke St, Congleton, Cheshire, CW12 1AP. (0260) 297544. Acoustic Energy, Arcam, B&W, Denon, Epos, Kef, Linn, NAD, Nakamichi, Onix, Royd, Target, Yamaha, etc. Superbly appointed single speaker demo facilities. 3 listening rooms with one dedicated to home cinema. No appts nec, home trial facilities, free installation. 2 year guarantee on all equipment. Access, Visa. Credit facilities available on request. Open Mon-SAT, closed Weds. **BADA**

DOUG BRADY HI-FI, Kingsway Studios, Kingsway North, Warrington, WA1 3NU. Phone (01925) 828009, Fax (01925) 825773. For the widest range of high quality hi-fi in the Northwest. Family business est. 35 years. 3 dem rooms, incl home cinema, home trials; deliveries throughout NW; Access, Visa, Credit Facilities. Open 10-6; 6 days. Send for free map and/or 5 page sale list **BADA**

HALE HI-FI, 2 Bold St, Hale Road, Altringham, Cheshire WA14 2ER. Tel 061 929 0834. Open Mon-Sat 10-6 & later by appointment. Specialising in equipment by: Naim, Quad, Royd, Nad, Denon plus selected others. Large range of quality accessories. On site service department. Installation & delivery. Home demonstrations a pleasure.

NORMAN AUDIO, 106 Victoria Str, Crewe. (0270) 211091 Fx (0270) 211795. For full details see our Lancashire entry. **BADA**

PETERS HI-FI, 4 St Michaels Sq, Grosvenor Precinct, Chester., (0244) 322063/319392. Arcam, Technics, Sony, Marantz, Dual, Denon, Tannoy, Wharfedale, Quad. 2 Single speaker Dem rooms, no appts nec, free installation service dept. Access, Visa, Amex. Peters credit chargecard. Mon-Sat 9-5.30.

THE HI-FI SHOWROOMS, 12A West St, Congleton, Cheshire (0260) 280017. Celestion, Creek, Exposure, Musical Fidelity, Naim, Pink Triangle, Project, Rotel, Ruark, Systemdek, Tannoy, TDL, Technics. 5 Dem Rooms, No appts nec, Home trial, Free install, Service dept. Access, Visa, Lombard Tricity. Open 9-5:30, Closed Wed.

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GILSON AUDIO LTD, 172 Borough Road, Middlesbrough. (0642) 248793. Exposure, Arcam, Mission, Cyrus, Denon, Marantz, NAD, Rotel, Pioneer, Audiolab, Tannoy, Teac, Yamaha. Demonstration facilities in main shop and 2 dem. rooms, 1 AV room, appt nec, home trial facilities, free install. on request, service department. Access, Visa, HP. 10-5 - 6 days. **BADA**

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DEVON

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THE HI-FI ATTIC, 58 New George St, Plymouth, Devon PL1 1RR. (0752) 669511. We stock most leading makes and have an expert enthusiastic staff. Premises include attractive hi-fi and home cinema demonstration rooms. We offer free installation and credit facilities



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DEALER Directory

(written details on request) also a fully equipped service department. We can also provide a mail order service for all your LaserDisc requirements. We accept Visa, Access, Amex.

RADFORDS, 28 Cowick Street, St Thomas, Exeter, EX4 1AL. Tel 0392 218895. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Service depts, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

RADFORDS, 107 Cornwall Street, Plymouth, PL1 1PA. Tel 0752 226011. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Service depts, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

RADFORDS, 6 Fore Street, St Marychurch, Torquay. Tel 0803 326723. Visit us for the largest range of Hi-Fi & Home Cinema equipment in the South-West. Demonstration rooms, Service depts, Home Installation Service, Access, Visa, Amex. Open 9.00-5.30 Mon-Sat. **BADA**

DORSET

DAWSONS, 23 Seamount Road, Westbourne, Bournemouth, Dorset. (0202) 764965. B&O, Castle, Canon, Jamo, JBL, Pioneer, Sony, Target, TDL, Technics. No appts necessary. Free install, Service depart. Various credit facilities available. Open 9-5.30 6 days a week.

MIKE MANNING AUDIO New branch now open at: 128 Pool Road, Westbourne, Bournemouth. (0202) 751522. For details see main entry under Somerset.

SUTTONS HI-FI, 18 Westover Road, Bournemouth. 0202 555512. Linn, Arcam, Mission, Quad, Audiolab, Rotel, Yamaha, Denon, etc. 2 Single Speaker Listening Rooms, Home Demonstrations, Free Installations. Open Mon-Sat 9-5.30. Call for details. **BADA**

DURHAM

HI-FI EXPERIENCE, 17 Coniscliffe Road, Darlington DL3 7EE. Tel Help Line (0325) 481418. Agencies include: Arcam, Audiolab, Bang & Olufsen, Celestion, Cyrus, Denon, Harman, IMF, KEF, Marantz, Mission, Musical Fidelity, Meridian, NAD, Pioneer, Quad, Rotel, Shearman, Tannoy, Yamaha. 3 listening rooms. 3 years guarantee. Free delivery and simple installation North Yorks/South Durham. Home cinema specialist. **BADA**

ESSEX

AUDIO T, Gants Hill, 442-444 Cranbrook Rd, Gants Hill, Ilford, Essex IG2 6LL. Tel: (0181) 518 0915, Fax (0181) 554 8463. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, KEF, Marantz, Meridian, Mission, Micromega, Nakamichi, Yamaha & many more. Mon-Fri 10-6, Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. Listening room. Home Cinema specialists. Free membership of Club Audio T. **BADA**

BRENTWOOD HI-FIDELITY, 2 Ingrave Rd, Brentwood, Essex, CM15 8AT. (0277) 221210. Audio Innovations, Denon, DNM, EAR, Marantz, Micromega, Mission, Pink Triangle, Quad, Tannoy plus many more. Single speaker dem rooms, home trials, evening appts (high end), home installations. Mon-Sat 9.30-5.30. Access. Visa. Service Facilities. Advice second to none. **BADA**

LYON AUDIO, 16 Peartree Business Centre, Peartree Road, Stanway, Colchester, Essex CO3 5JN. (0206) 560259. Mission, Arcam, Denon, Rotel, KEF, Rogers, NAD, Tannoy, Yamaha, Dual, Michel, Castle. Dem facilities. Mon-Sat 9-6. Installations. Access, Visa, Instant credit. Service dept. **BADA**

PRO-MUSICA, 6 Vineyard St, Colchester, Essex. Tel (0206) 577519. Roksan, Naim, Rega, Micromega, Arcam, Creek, Onix, Rotel, Denon, Ruark, Royd, Epos, Sound Organisation, Sound

Factory, Chord Company, Audio Tec, Audio Technica, Mana Acoustics, Shahinian, Dynavector, Neat. Open 10-6 Mon-Sat. **BADA**

RAYLEIGH HI-FI, 44a High Street, Rayleigh, Essex. (0268) 779762/747571. 216 Moulsham St, On-the-Parkway, Chelmsford. (0245) 265245. 132-134 London Road, Southend-on-Sea. (0702) 435255. A&R, Audiolab, Cyrus, Denon, Epos, Linn, Marantz, Meridian, Mission, Naim, Quad, Rega, Roksan, Royd. 0% finance. Excellent audio visual range, home cinema Dolby Pro-Logic, multi-room specialist. **BADA**

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AUDIO EXCELLENCE, 58 Bristol Road, Gloucester. (0452) 300046. Great Hi Fi carefully selected and demonstrated by friendly and enthusiastic staff. Closed Mon. **BADA**

AUDIO T, 40-42 Albion Street, Cheltenham, Gloucestershire GL52 2RQ. Tel: (01242) 583960 Fx (01242) 226435. Great hi-fi from Arcam, Audiolab, Aura, Denon, Epos, Linn, Marantz, Meridian, Mission, Quad, Rotel, Technics, Yamaha & many more. Mon-Fri 10-6, Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. Listening room. Home Cinema specialists. Free membership of Club Audio T. **BADA**

HUTCHINSONS, 295-297 High Str, Cheltenham, Glos. GL50 3HL. (0242) 573012. Pioneer reference point, Technics, Dual, NAD, Wharfedale, Celestion, Marantz, Aiiwa, Kenwood, Sennheiser. No appts necessary, free install, service dept. Instant credit up to £1000. Open Mon-Sat 9.15-5.30. **BADA**

HAMPSHIRE

AUDIO SOUTH for further details see Surrey entry.

AUDIO T, 4 Feathers Lane, Basingstoke, Hampshire RG21 1AS. Tel (01256) 24311, Fx (01256) 24430. Great hi-fi from Arcam, Denon, Linn, Meridian, Mission, Naim, Rotel, Technics, Yamaha & many more. Mon-Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & install. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. Listening room. Home Cinema specialists. Free membership of Club Audio T. **BADA**

HAMPSHIRE AUDIO LTD, 2-12 Hursley Rd, Chandlers Ford, Hants SO53 2FU. (0703) 252827/265232. 3 hi-fi and 2 home cinema/Dolby surround sound demo studios. Thurs late eve, closed Mon (except in Dec). 2-year guarantee, service dept on site, large free car park, junctions 4 (M27/M3), 5 (M27), 12(M3), 13(M3) all within 3 miles. Est 1969. **BADA**

JEFFERIES HI-FI, 29 London Road, Portsmouth, PO2 0BH. Tel (0705) 663604. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, Dynaudio, KEF, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, Quad, Rega, REL, Rotel, Royd, Ruark, Sennheiser, Sony, Top Tape, Yamaha. 2 dem rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

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ENGLISH AUDIO, 37 Whitecross Road, Hereford HR4 0DG. (0432) 355081. Arcam, Audion, Audio Technica, Chord, Cyrus Centre, Denon, Exposure, Heybrook, JPW, KAR, KEF Reference, Marantz, Michi, Micromega, Mission, Musical Fidelity, Moth, NAD, Nakamichi, Orelle, Pink Triangle, Rogers, Rotel, Ruark, SME, Stax, Systemdek, Tannoy, TDL, Yamaha and others. Single Speaker Dem room. Home trial. Free install. Service dept. Access, Visa, Credit arranged. Open Mon-Sat 10am-6pm. **BADA**

HERTFORDSHIRE

ACOUSTIC ARTS LTD, 101 St Albans Rd, Watford, Herts. (01923) 245250. Fax (01923) 230798. Apogee, Audiolab, Audio Research, B&W, Bose, Castle, Celestion, Chord, Classe,

Copland, Denon, KEF, Magneplanar, Marantz, Martin Logan, Michell, Micromega, Orelle, PS Audio, Professional Mitoir, Roksan, Ruark, SME, Sonus Faber, Sonic Link, TDL, Theta, Thorens, Wilson. 4 demonstration rooms. Purpose built AV studio. Credit available, 100 yards from Watford Junction station. Open Tues-Sat 10-5.30 (Thursday open until 8pm). **BADA**

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HALEY AUDIO LTD, 328 Ware Road, Hailey, Hertford SG13 7PG. Tel (0992) 442425, fax (0992) 448387. Enjoy choosing your system in one of our three listening rooms. Relax with coffee or something from the bar. Demonstrations include Lexicon CP3 with THX surround sound with the guaranteed deepest, tightest bass available. Choose your hi-fi (top valves and MOSFETS), LD, CDI etc in a realistic domestic environment. Brands include; REL, AC Magnum, CR Devs, Rotel, Celestion, Micromega, Lumley Reference, Acoustic Energy, Royd, JPW, Sonic Link, Harmon, etc. We deliver anywhere in the UK for home audition, or mail order, Access, Visa etc.

STUDIO 82 (Harpenden) Ltd, 82 High Street, Harpenden, Herts AL5 2SP. (0582) 764246, Fax (0582) 467022. Arcam, ATC, Audiolab, Aura, AVI, Bang & Olufsen, Blaupunkt, Bose, B&W, Castle, Chord Co, Denon, Epos, Harbeth, Marantz, Mission, NAD, Naim Audio, Nakamichi, Panasonic, QED, Quad, Roberts Radio. Quiet single speaker dem room. Appts nec. Home trial, free install. Service Dept. Visa, Access & finance terms. Open 9-5.30pm (Mon-Sat). **BADA**

HUMBERSIDE

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KENT

ASHFORD SOUNDCRAFT HI-FI, 40 High Street, Ashford. Seeking music lovers, male or female any age, to share common interest in, musical Pro-aktiv Hi-Fi Systems, Multi Room or Home Cinema. Attractive unusual equipment in unusual setting, your place or ours, we guarantee lasting pleasure. Open Mon-Sat, Appointment Service or just pop in. Tel: 0233 624441. **BADA**

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KIMBERLEY HI-FI, 193 Broadway, Bexleyheath, Kent. (081) 304 3272. Pioneer, Technics, Kenwood, Denon, NAD, Aiwa, Tannoy, Mission, Wharfedale, B&W. Separate dem room, no appt nec. Free installation. Service Dept. Instant credit facilities. 9.30-5.30. No early closing. **BADA**

V J HI-FI, 29 Guildhall St, Folkestone. (0303) 256860. Mission, Kenwood, Tannoy, Marantz, Sony, Rogers, Denon, Musical Fidelity, Quad, Yamaha. Dem and home trial facilities, free local install. No appts necessary, service dept. Amex, Diners, Visa, Access, Int free credit, instant credit. Mon-Sat 9-6. **BADA**

V J HI-FI, 119 High Street Margate. (0843) 226977. For full details see our above entry. **BADA**

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HELEN KOCZUR, 161 Yorkshire Street, Rochdale, Lancashire. (0706) 42107. Harman Kardon, Quad, Revox, Aura, Teac, JBL, Tannoy - including Definition Range - B&W, KEF,

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NORMAN AUDIO, 131 Friargate, Preston, Lancs PR1 2EE. Tel (0772) 253057. Fx (0772) 562731. Marantz, Pioneer, Yamaha, Audiolab, Arcam, Mission, Cyrus, B&W, KEF. Send for catalogue. Home cinema demo room. No appointment nec, home trial facilities, free installation. Instant credit subject to status. Open 9.30-5.30, late night Wed till 8pm. **BADA**

NORMAN AUDIO, also at 216 Church Street, Blackpool, Tel (0253) 295661, Fx (0253) 295722. **BADA**

LEICESTERSHIRE

LEICESTER HI-FI CO, 6 Silver Walk, St Martins Square, Leicester LE1 5EW. Tel: (0116) 2539753. Fax (0116) 2626097. Acoustic Energy, Arcam, Marantz, Micromega, Mission/Cyrus, Musical Fidelity, Nakamichi. Exposure, Rogers, Roksan, "and oodles more" 2 Dem rooms, home trial arranged, free install, service dept, Credit facilities, Access, Visa, Diners, Amex, 6 days 9.30-5.30. **BADA**

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SOUND ADVICE, The Factory, Duke St, Loughborough LE11 1ED. (0509) 218254. Shahinian, Rega, Naim, Linn, Royd, Yamaha, Rotel, Arcam, Nakamichi, JPW. 3 demonstration areas, no appts necessary, free installation, service department. Lombard credit charge, Access, Visa. Mon-Fri 9.30-6.00, Sat 9.30-5.30.

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STAMFORD HI-FI CENTRE, 9 Red Lion Square, Stamford, Lincs PE9 2AJ. (0780) 62128. Pioneer, Technics, Marantz, Cyrus-Mission, Rotel, NAD, Yamaha, Kenwood, Quad, plus all major speaker manufacturers. Expert advice, comparator demonstrations, on two floors, part exchange Hi-Fi purchased for cash. No appointments necessary, home trial facilities, free installation, service department. Mastercard, Visa & credit charge, finance available. Mon-Sat 9-5.30pm, closed Thursdays.

SUPERFI, 271A High Str, Lincoln LN2 1JG. (0522) 520265. See main entry under Nottinghamshire for full details.

LONDON

ANALOG AUDIO 849 High Road, Finchley, N12 0181-445 3267. For friendly service and advice. AKG, Arena, Audio Technica, Beyer, Denon, Dual, Goodmans, Harman-Kardon, JPW, JBL, Jamo, Kenwood, Lift, Marantz, NAD, Ortofon, Pioneer, Rotel, Sennheiser, Thorens, Teac, Tannoy, TDL, Wharfedale, Vivanco, Yamaha. Large range of hi-fi accessories.

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DEALER Directory

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CORNFLAKE SHOP, 37 Windmill Street (just off Tottenham Court Road), London W1. Tel 071-631 0472 (all enquiries), Fax 071-436 7165. Open Tues-Sat 10-7pm. Rega, Roksan, Naim, Monitor Audio, Arcam, Nakamichi, ATC, AVI, Rotel, Epos, Meridian and Linn. 3 dem rooms (incl home cinema). Friendly professional service. Home trial facilities. Appointments preferred, full delivery and repair service, multi-room specialists. Access, Visa and Amex.

GRAHAM'S HI-FI, Canonbury Yard, 190a New North Rd, London N1. 071-226 5500. Winner Sony/HFN Greater London Dealer Award 1986/89/90. "One of the 5 best hi-fi shops in the world". Arcam, Linn, Meridian, Naim, Rega, etc. Systems from £500. FREE PARKING, 4 dem rooms, service dept, open Tues-Sat. RING FOR APPOINT. **BADA**

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HI-FI EXPERIENCE, Lion House, 227 Tottenham Court Road, London W1P -HX. Tel Help Line 071-580 3535 24 hour, fax 071-436 4733. Agencies include: Arcam, Audiolab, Bang & Olufsen, Castle, Celestion, Chord, Cyrus, Denon, Heybrook, Harman, IMF, KEF, Marantz, Mission, Musical Fidelity, Meridian, Nakamichi, Nad, Pioneer, Quad, Rotel, Shearman, Tannoy, TDL, Yamaha. 8 listening rooms, 3 years guarantee. Free delivery and simple installation (M25 periphery), home cinema specialist. **BADA**

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STUDIO SENSE, 350 Edgware Road, London W2 1DX. (071) 402 2100. Alphason, B&W, Kenwood, Nakamichi, Celestion, Denon, Monitor Audio, Marantz, NVA, Sony ES, Yamaha. Appts preferred. Installations available. Access, Visa, Standard credit facilities. Mon-Sat 9.30-6.30.

STUDIO 99, 79-81 Fairfax Road, Swiss Cottage, London NW6. 071-624 8855, Fax 071-624 5315. Naim, Meridian, Quad, Mission/Cyrus, Rega, KEF, Arcam, Epos, Acoustic Energy, Yamaha, Nakamichi, NAD, Sonus Faber, B&O etc. Single speaker dem room, AV demos. Multiroom. Service dept. Visa/Access credit facilities. 10-7 Mon-Fri, 10-6 Sat. **BADA**

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ZEBRA, 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. Audio lab, Arcam, KEF Reference, Lexicon, Meridian, Micromega, Panasonic, Pioneer, REL, Rotel, Sony, Tannoy, and large range of AV equipment. S2 Air Conditioned Demo Rooms. in a more casual environment. Service department. The UK's leading home cinema centre. Mon-Sat 9.30-6.00. Access, Visa, Switch & instant credit up to £1000 subject to status.

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AUDIO COUNSEL, 14 Stockport Road, Cheadle, Cheshire OL1 3LQ. Tel: (0161) 428 7887. Linn, Naim, Rega, Arcam, Rotel, Royd, Mission, Micromega, Marantz, Shahinian, Celestion, Nakamichi, Dynavektor. Free installation. Record club. Major credit cards and credit facilities. Open Tuesday-Saturday 10.00 to 5.30, 8pm on Thurs. **BADA**

CENTRAL RADIO, 30-32 Shudehill, Manchester M4 1EY. Tel 061 834 6700. Technics, Kenwood, Pioneer, Aiwa, Marantz, Mission, B&W, Wharfedale, JBL, Thorens, Panasonic, etc. TV video, surround sound, AV systems, service dept, free delivery. Access, Visa, Switch finance. Mon-Sat 9.5-3.0.

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PETERS HI-FI, 11 St Werburgh Squ, Birkenhead. Also at 8 High Str, Bromborough. 051-334 1874/2825. Open 9-5.30 6 days a week. See Cheshire entry for details.

WEST MIDLANDS

AMADEUS SOUND & VISION, 10 Boldmere Road, Sutton Coldfield, West Midlands. 021-354 2311. Audio Innovations, aura, B&O, B&W, Castle, Marantz, Micromega, Musical Fidelity, Nakamichi, Harman Kardon, QED. Single speaker demo, appts preferred, service available, installations, B&O link install, home trials. Access, Visa, interest free credit available subject to status. 9.30-6pm, 6 days. **BADA**

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GRIFFIN AUDIO LTD, 94 Bristol Street, Birmingham. (021) 692 1359/(021) 622 2230. Arcam, Castle, Denon, Linn, Marantz, Naim, Quad, Shahinians, Rega, Rotel. Open Tues-Sat 10-6. **BADA**

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AUDIBLE DIFFERENCE, Near Diss, Norfolk. Tel (0379) 740227. Absolute Sounds, Audion, Art Audio, ATC, Audio Innovations, Audio Note, AVI, DPA, EAR, Impulse, LFD, Pink Triangle, Roksan, SME, Tube Technology. Full demonstration facilities including evenings. Appts required, free installation, home trial facilities. Open Mon-Fri 12-9pm, Sat 9-5pm.

AUDIO IMAGES, 7 All Saints Rd, South Lowestoft, Suffolk NR33 0DL. Tel: 0502 582853. For full details see our main entry under Suffolk.

BASICALLY SOUND, The Old School, School Rd, Bracon Ash, 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. **BADA**

NORTHAMPTONSHIRE

CLASSIC HI-FI + VIDEO, School Lane, Kettering, Northants. (0536) 310855. Aura, B&W, Heybrook, Rotel, Yamaha, Onix, Onkyo, LSD, Nad, Pioneer, Marantz, Kenwood, Kef, Shearman, Sugden, Rogers, Metaxas Audio and many more. Home trial, free instal., service dept. Access, Visa, credit facts. 9.30-5.30pm. **BADA**

LISTEN INN, 32A Gold Street, Northampton. (0604)37871 (Fax) (0604) 601430. Linn, Naim, Rega, Epos, Royd, Mission, Cyrus, Arcam, Audiolab, Neat, Creek, Quad, Denon etc. 2 Dem Rooms **BADA**

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DEFINITIVE AUDIO, (0602) 813562. For a carefully considered approach to building a true hi-fidelity audio system with components derived from the following manufacturers: Audio Innovations, Snell, Wadia, Micromega, Deltac, Voyd, Systemdek, SME, Revox, Ortofon, Pioneer. Demos by apt. Please phone for further details. Install free of charge. Mon-Sat 10-7, closed Wed am.

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AUDIO T, 19 Old High Str, Headington, Oxford OX3 9HS. (01865) 65961, Fx (0181) 60415. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, Kef, Linn, Marantz, Meridian, Mission, Rotel, Yamaha & many more. Mon-Fri 10-6, Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. 2 listening rooms. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

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OXFORD AUDIO CONSULTANTS, Cantay Hse, Park End Street, Oxford OX1 1JE. (0865) 790879 fax (0865) 791665. Quad, Denon,

DEALER Directory

Spendor, Aura, Micromega, Ruark, B&W, Pink Triangle, Roksan, Krell, Sonus Faber NAD, Rotel, Musical Fidelity, Pioneer, Marantz, Rogers, TDL. Demo room. Home trial and free installation. Instant credit, Access, Amex, Visa. 10-6 Mon-Sat. **BADA**

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SHROPSHIRE

AVON HI-FI, 12 Barker Street, Shrewsbury, Shropshire SY1 1QJ. (0743) 355166. NAD, Quad, B&W, Kenwood, Aiwa, Bose, Nakamichi, Onkyo. Dem room. Home trial. Free install. Service dept. Access, Visa. £1000 instant credit. Mon, Tues, Wed, Fri, Sat 9-5.30.

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SOMERSET

MIKE MANNING AUDIO, 110 Middle Street, Yeovil, Somerset BA20 1NE. (0935) 79361, Fax (0935) 32923, Mobile(0850) 325965. Naim, Roksan, Pink Triangle, A+R (Arcam), ATC, AVI, NAD, Pioneer, Rotel, Denon, etc. Dedicated listening lounge, for relaxed and unpressured demonstrations. Apts not usually nec. but best to phone first. Home trial facilities on request, free installation, service department. Instant credit, Access & Visa, etc. 9-5.30 closed Mondays.

STAFFORDSHIRE

GRANGE HI-FI LTD, 153 Branston Rd, Burton-on-Trent, Staffordshire DE14 3DQ. (01283) 533655. Albarry, Audio Innovations, Arcam, Castle, Denon, JPW, Marantz, Mission, Moth, Pink Triangle, Pioneer, Rogers, Systemdek, SME, TDL, Yamaha. Home cinema and hi-fi demo rooms, apts nec on Sat, Service dept Access, Visa, interest free credit available, subject to status. Open Tues-Sat 9.00-5.30pm. **BADA**

SUFFOLK

AUDIBLE DIFFERENCE, Near Diss, Norfolk — see main entry under Norfolk.

AUDIO IMAGES, 7 All Saints Rd, Pakefield, South Lowestoft, Suffolk NR33 6JL. Tel/Fax: 0502 582853. Quad, Triangle, Arcam, Castle, Rotel, Moth, JPW, Finlux, Audio Innovations, plus the amazing Rothwell range. Separate demo room, no apts 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 (0284) 724337. Arcam, Castle, Heybrook, LFD, Marantz, Meridian, Monitor Audio, Michell, Musical Fidelity, Orelle, Pink Triangle, Proac, Quad, Rotel, Ruark, Target, van den Hul, etc. Single Speaker Room. No appointments necessary. Home trial fac. Free installation. Access, Visa, Switch. 9.30-6pm Mon-Sat. Closed Wed

EASTERN AUDIO, 41 Bramford Rd, Ipswich. (0473) 217217. Established nearly 20 years. Easy parking, dem room. Mon-Sat 9.30-6. Quad, Arcam, Marantz, Meridian, Denon, Nakamichi, Audiolab, Technics, NAD, TDL, Celestion, Mission and B&W. **BADA**

SURREY

AUDIO SOUTH, 24 (The Woolmead) East Str, Farnham, Surrey GU9 7TT. (0252) 714555. Audio Note, Deltec, JPW, Marantz, Rotel, Teac, etc. AV specialist. Dem room and evening appointments available. Home trial facilities. Free installation. Access, Visa. 10.30-6 Mon-Sat.

INFIDELITY, 9 High Str, Hampton Wick, Kingston Upon Thames, Surrey. Tel: (081) 943 3530. Arcam, Creek, Epos, Heybrook, Micromega, Naim Audio, Roksan, Rega Research, Shaninian, TEAC. Single speaker listening room. Apts pref, free installation, service dept. Major credit cards. Closed Mon, Tue-Fri 10.30-7, Sat 10-6. **BADA**

PJ HI-FI - the Hi-Fi Shop, 3 Bridge St, Guildford, Surrey GU1 4RY. (0483) 504801/304756. 9-6 Mon-Sat. Linn, Meridian, Arcam, Quad, Revox, Rotel, NAD, Nakamichi, Marantz, Yamaha, Deltec, Rega, Audiolab, Mission/Cyrus. **BADA**

RIVERSIDE HI-FI, 422 Richmond Road, East Twickenham, TW1 2EB. Tel: (081) 892 7613. Fax: (081) 892 7749. See main entry under Middlesex. **BADA**

ROGERS HI-FI, 13 Bridge Street, Guildford, Surrey. (0483) 61049. Aiwa, Creek, Denon, JPW, Marantz, Micromega, Rogers, TEAC, Pioneer, Systemdek, Tannoy. Demonstration facilities available, no appointment necessary. Free installation. Service department. Access/Visa. Instant credit up to £1,000 subject to status. Monday-Saturday 9.30-6pm, later by appointment.

SPALDINGS HI-FI, 352-4 Lower Addiscombe Rd, Croydon, Surrey CRO 7AF. 081-654 1231/2040. Linn Naim, Quad, Meridian, Audiolab, Mission, Marantz, Denon, Ruark, Tannoy, Arcam. 3 dem rooms including AV room. Service dept, free install, home trial facilities, appointments advisable. Access, Visa, Amex, Interest free credit, instant credit. Mon-Sat 9-5.45. Tues-8. Closed Wed. Service dept. **BADA**

SURBITON PARK RADIO, 48 Surbiton Rd, Kingston-Upon-Thames, Surrey. (081) 546 5549. Quad, Castle, Dual, Denon, Kenwood, Mordaunt-Short, Rotel, Pioneer, QED, B&W, Tannoy. Demo facilities. Access, Visa. 9.30-5.00 Mon-Sat. Service dept.

ZEBRA 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. See main entry under London.

SURREY HI-FI, 45 High St, Godstone, Surrey RH9 8LS. (Just off M25). (0883) 744755. Musical Fidelity, Quad, JPW, Audiolab, Bose, Tube Technology, Sennheiser, REL, TDL, KEF, Tannoy, Denon, Nakamichi, Thorns, Target, Marantz, Michell, Beyer Dynamic headphones, Sound Organisation, Sound Tripods, van den Hul cables. For directions please see our advert in the Dealer Guide.

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JEFFRIES HI-FI, 69 London Road, Brighton BN1 4JE. (0273) 609431. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, KEF, Kinshaw, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, Rega, REL, Rotel, Royd, Ruark, Sennheiser, Shalinian, Sony, Top Tape. 2 dem rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

JEFFRIES HI-FI, 4 Albert Parade, Green Street, Eastbourne BN21 1SD. (0323) 31336, Fax (0323) 416005. Hi-fi, home cinema and multi-room specialist. Range includes Arcam, Beyer, Celestion, Denon, Dynaudio, KEF, Lexicon, Linn, Meridian, Mitsubishi, Naim, Panasonic, Polk, REL, Rotel, Royd, Ruark, Sennheiser, Sony, Top Tape, Yamaha. 2 demonstration rooms. Open Tues-Sat, late night Wed. Free parking, bus route, credit facilities. Winner Sony/Hi-Fi News Best Southern Dealer. **BADA**

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BOWERS & WILKINS LTD, (Est. 1945) 1 Becket Buildings, Littlehampton Rd, Worthing. (0903) 2 64141. 1 minute from A24 & A27. Free local parking. Aura, B&W (inc. Matrix), Castle, Denon, Mission, Nakamichi, Quad, Teac, Technics, Thorns, and many more in 4 Dem Rooms. Systems, Hi-Fi and Home Cinema. Service Dept., Installations. Open 6 days a week. Access, Visa, instant credit to £1000 subject to status.

CHICHESTER HI FI, 7 St. Pancras, Chichester, W. Sussex PO19 1SJ. Tel: (0243) 776402. Linn, Naim, Rega, Creek, Nakamichi, A&R, Denon, Roksan etc. Tues-Sat, 10-1, 2-5.15 (closed Mon). **BADA**

WARWICKSHIRE

FRANK HARVEY HIFI, 163 Spon Street, Coventry, Warwickshire, CV1 3BD. Tel 0203 525200. Arcam, Mission, Cyrus, Musical Fidelity, Marantz, Rotel, NAD, Tannoy, Yamaha, KEF. Open 9.30-5.30 closed Thursday. **BADA**

SOUNDS EXPENSIVE, 12 Regent Str, Rugby. (0788) 540772. Arcam, Audiolab, Quad, Meridian, Marantz, Mission, Celestion, KEF, Rotel, Ruark, Rotel, Heybrook. IMPROVE YOUR IMAGE, BE SEEN WITH US. apts required, no service dept, free install, home trial facilities. Access, Amex, Visa, Diners, Instant credit. Open 9-5.30pm Mon-Sat. **BADA**

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AUDIO T, 60 Fleet St, Swindon, SN1 1RA. (01793) 538222, Fax (01793) 487260. Great hi-fi from Arcam, Denon, Linn, Marantz, Meridian, Mission, Naim, Rotel, Technics, Yamaha & many more. Mon-Sat 9.30-5.30. Trained staff. 3 year guarantee on hi-fi. Free delivery & installation. 30 day free upgrade scheme. Home demonstrations. Part exchange. Interest Free Credit on selected items. 2 listening rooms. Home Cinema specialists. Free membership of Club Audio T. BADA bonded. **BADA**

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NORTHERN IRELAND

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ZEUS AUDIO, 2-4 Grt Victoria Str, Belfast BT2 7BA. (0232) 332522. Audio Innovations, Pink Triangle, Roksan, Marantz, Tannoy, Rotel, Micromega, Meridian, Mission Cyrus etc. Open Mon-Sat 10.00-5.30. Late night Thursday.

BADA

COUNTY DOWN

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SCOTLAND

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HIGHLANDS

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STIRLING

STIRLING AUDIO, 19 Barton Str, Stirling, Scotland FK8 1HF. (0786) 479958. Linn, Mission, Cyrus, Marantz, Arcam, TDL, Heybrook, Tannoy, Aiwa, Audio Innovations. Dem room. No appts necessary, service dept, free installation, home trial. Access, Visa, Int free credit, instant credit. Mon-Sat 10-5.30, closed Wed.

TAYSIDE

J.D. BROWN, 28-36 Castle St, Dundee DD1 9NZ. (0382) 226591. Hi-Fi dem room and superb new AV dem room. Mission, Mordaunt-Short, Technics, Rotel, Denon, Pioneer, Aiwa, Castle, Bose, JPW, Jamo, JVC. No appt necessary, free installation, service dept. Open 9.30-5.30 six days a week.

WALES

CLWYD

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I&H GRIFFITHS & SONS, 313 High St, Bangor LL57 1YA. (0248) 370655. Aura, Yamaha, Tannoy, Teac, Sony, B&W, SVC, Rotel. Demos available, no appts nec, home trial facilities, free installation, service dept. Access, Visa, Lombard credit charge. Mon-Sat 9-5.30, Wed 9-1. Audio Visual Specialists.

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Key to headphones
Price - typical retail, to nearest pound.
Type - Opn - open back, vented or velocity type; gives less environmental isolation, but is usually more natural feeling in extended use. Sld - sealed - the headphones form an air seal around the ears, helping reduce sound leakage. IR - infra red cordless. Ear - in-ear model.

Impedance - in ohms.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Weight - without cable.

Model	Price	Type	Weight	Impedance	Special
HEADPHONES					
Sennheiser IS550	180	-	170	-	Infra-red cordless
Sennheiser HD 580 Precision	190	Opn	260	300	Flagship model
Sennheiser Charleston	225	Opn	210	140	3m lead, dual plug, leather tr
Sennheiser IS850	830	-	330	-	Digital audiophile infra-red
Sennheiser HE60/HEV70	998	Opn	260	-	Electrostatic with energiser
Sennheiser Orpheus	9652	Opn	365	-	Electrostatic, valve energiser
Sony MDR-E505	8	Ear	-	-	Supplied soft case
Sony MDR-E515EX	8	Ear	5	-	1m lead, mini plug
Sony MDR-007 Mk II	8	Opn	36	-	2m, 3.5/6.3mm plug
Sony MDR-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-25	16	OPN	-	-	-
Sony MDR-W12L	16	Ear	-	-	1.2m mini 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-P1 TV	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-IF210K	80	IR	170	-	Seven meter range infra red
Sony MDR-D55	90	Slid	120	45	1.5m, 3.5/6.3mm plug
Sony MDR-CD750	90	Slid	290	45	3m, 3.5/6.3mm plug
Sony MDR-D77	120	Slid	140	45	1.5m, 3.5/6.3mm plug
Sony MDR-610K	190	IR	470	-	Seven meter range infra-red
Sony MDR-CD1000	200	Slid	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	Slid	160	32	3m lead, OFC wire
Technics RP-HT86	40	Slid	165	35	3m lead, XBS acoustic lead
Technics RP-HT116	60	Slid	190	35	3m lead, XBS function
Technics RP-F10	100	Slid	300	32	3m lead, XBS pipe phone
Technics RP-F30	180	Slid	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	Slid	-	-	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 SR10001FL	110	Opn	265	100	In-front localisation
Vivanco IR7100	120	-	-	-	Stereo infra-red cordless
Vivanco IR7600	140	-	-	-	Stereo infra-red cordless
Vivanco SR2001FL	140	Opn	-	-	In-front localisation

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Acoustic Energy Aegis 1	452	2x Pt	86	8	150	21,39,26	Stand mount, metal cone
Acoustic Energy Aegis 2	799	2x Pt	86	8	200	33,106,26	Floor, reflex, metal cone
Acoustic Energy AE1	870	2x Pt	88	8	200	26,30,18	Metal dome/cone, solid enc
Acoustic Energy AE2	1175	2x Pt	91	6	200	24,40,32	Twin bass, metal cone
Acoustic Energy AE3	1650	3x Pt	87	4	250	37,27,63	Simplified metal dome/cone
Advent Mini	99	-	88	8	120	16,28,14	Bookshelf/stand mount
Advent Baby 2	149	2x	89	8	75	26,39,15	Bookshelf/stand mount
Advent Graduate	219	2x	89	8	210	28,44,17	Bookshelf/stand mount
Advent Prodigy	299	-	89	8	300	24,68,20	Floor standing, free space
Advent Legacy 2	349	-	90	8	500	38,67,22	Floor standing, free space
Advent Laureate	499	-	90	8	500	21,80,29	Floor standing, free space
Advent Heritage	579	-	90	8	600	25,89,31	Floor standing, free space
Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
Allison AL105	170	2x	90	4	150	24,37,21	Boundary, stand mount

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.

Allison AL100	100	2x	90	4	150	33,24,19	Boundary, stand mount
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Key to loudspeakers
Price - typical retail, to nearest pound.
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Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Allison MS200	220	-	90	4	75	13,25,14	Boundary, stand mount
Allison AL110	220	-	90	4	150	24,40,23	Floor standing, free space
Allison AL115	280	-	90	4	150	28,51,26	Boundary, stand mount
Allison CD6	300	-	90	4	150	29,29,29	Cuboid, wall mount
Allison CD7	380	-	90	4	150	24,70,24	Floor standing, free space
Allison AL120	420	-	90	4	200	28,61,29	Floor standing, free space
Allison CD8	550	-	90	4	200	27,73,27	Floor standing, free space
Allison AL125	650	-	90	4	200	28,78,29	Open space, free standing
Allison AL130	800	-	90	4	200	32,95,34	Open space, free standing
Allison I.C. 10	2500	-	87	6	200	48,102,27	Floor standing, free space
Allison I.C. 20	5500	-	87	6	400	53,122,31	Floor standing, free space
AMC WM50	120	-	86	8	60	19,28,7	Ceiling mount
AMC WM75	160	-	86	8	80	22,30,9	Ceiling mount
AMC WM100	210	-	86	8	100	26,36,10	Ceiling mount
Apogee Grand	0	Ribbon	86	-	-	71,194,86	Three way ribbon, active sub
Apogee Centaur Minor	1345	Hybrid	88	4	100	30,88,20	Ribbon/dynamic
Apogee Ribbon Wall	1750	Hybrid	89	-	-	27,120,7	Ribbon/dynamic
Apogee Centaur	2300	Hybrid	88	4	150	33,102,25	Ribbon/dynamic
Apogee Slant 6	2400	Hybrid	88	-	-	-	Ribbon tweeter, dynamic bass
Apogee CDD Subwoofer	3490	Hybrid	87	-	-	63,38,55	Active moving coil sub
Apogee Stage Sub	3645	MC	86	-	-	58,25,42	Active moving coil sub
Apogee Slant 8	3700	Hybrid	88	-	-	-	Ribbon treble, dynamic mass
Apogee Caliper Sig	3998	Ribbon	87	-	-	58,127	Two way
Apogee Stage	4100	Ribbon	86	-	-	55,82,5	Two way
Apogee Centaur Major	4980	Hybrid	88	4	200	40,141,27	Ribbon/dynamic
Apogee Studio Grand	14900	Hybrid	87	-	-	63,160,55	Three way ribbon, active sub
AR M.5	139	2x	88	6	-	18,21,15	Boundary, bookshelf mount
AR Pi One	149	-	90	8	60	19,32,17	Stand mount, boundary siting
AR Fun Partner	170	-	90	6	75	27,15,20	Utility model
AR Pi Two	199	-	90	8	100	27,44,2	Stand mount, boundary siting
AR M1	199	-	88	8	100	28,27,20	Boundary, bookshelf mount
AR Pi Three	219	-	89	8	100	21,51,22	Stand mount, boundary siting
AR Active Partner	230	Active	-	-	-	19,27,15	Utility model
AR Rock Partner	240	-	90	8	100	24,37,22	Utility powered (active)
AR M2	299	-	90	8	125	24,42,36	Boundary, bookshelf mount
AR Subwoofer 1MS	300	-	90	4	180	30,21,48	Compact subwoofer
AR M3	349	-	90	8	125	24,55,40	Boundary, bookshelf mount
AR Powered Partner	350	Active	-	-	15	19,27,15	Stand mount, free space
AR Pi Four	399	-	88	8	125	25,57,27	Stand mount, free space
AR M4	429	-	88	8	150	20,72,40	Floor standing, free space
AR M5	799	-	90	8	175	22,92,27	Floor standing, free space
AR M6	899	-	90	8	200	22,106,27	Floor standing, free space
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, non-boundary
ATC SCM20	1461	2x IB	83	8	300	31,72,34	Minimum 100Wpc, non-boundary
ATC SCM20 Tower	1999	2x IB	83	8	300	24,103,34	Floor standing SCM20
ATC SCM50	3218	3x Pt	85	8	150	31,72,43	To special order only
ATC SCM100	3683	3x Pt	88	8	-	40,84,53	To special order only
ATC SCM50A	4497	Active	-	8	350	31,72,48	With crossover and amplifiers
ATC SCM100A	5006	Active	-	8	350	40,84,59	With crossover and amplifiers
ATC SCM200A	10995	Active	91	8	850	83,73,440	With cross over and amplifiers
ATC SCM300A	11995	Active	94	8	850	88,92,47	With cross over and amplifiers
Audio Note AN-KB	499	-	90	8	100	28,46,23	Free space, stand mount
Audio Note AN-K/SP	699	-	90	6	100	28,46,23	Free space, stand mount
Audio Note AN-J/B	799	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-J/SP	999	-	93	8	150	38,58,25	Free space, stand mount
Audio Note AN-E/B	1299	-	94	8	150	36,84,28	Free space, stand mount
Audio Note AN-E/SP	1599	-	94	8	150	26,84,28	Free space, stand mount
Audio 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	1200	3x	89	8	150	19,98,52	Black ash
Audio Vector 5X	2300	4x	91	8	200	24,110,34	Black ash
Aura SP-50	400	Pt	87	4	120	21,40,24	Carbon fibre bass unit
B&O Beovox RL1000	215	3x	86	8	60	32,40,13	Simplified RL6000
B&O Beovox CX50	285	2x IB	89	6	100	12,21,21	-
B&O Beovox CX100	395						



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LOUDSPEAKERS							
B&W Solid Twin Bass	230	Sub	91	4	150	45,20,60	White & black finish
B&W DM610i	250	2x IB	89	4	150	24,49,31	Stand/shelf mount
B&W CWM8	250	2x	90	4	100	28,38,9	In wall
B&W 2004	250	Pt	91	4	120	20,65,24	Budget hi-fi range, black ash
B&W Solid Verticale	400	Sat/sut	88	4	100	-	Lifestyle, 3 boxes
B&W DM620i	430	2x ABR	90	4	150	24,75,31	Floor standing
B&W DM630i	700	3x Pt	91	4	200	24,85,41	Floor standing
B&W Matrix 805 V/H	895	Pt	87	8	120	33,33,21	Outboard tweeter (vert/horiz)
B&W DM640i	900	3x Pt	91	4	200	24,97,41	Floor standing
B&W Matrix 804	1495	Pt	89	8	200	26,92,26	Matrix enclosure
B&W Matrix 803 S2	1945	Pt	90	8	250	26,101,34	Matrix enclosure
B&W Matrix 802 S3	2445	Pt	90	8	500	30,104,37	Matrix enclosure
B&W Matrix 801 S3	3500	Pt	87	8	600	44,100,56	Floor, studio monitor
B&W Silver Signature	4500	Pt	88	8	120	25,45,24	External crossover
Bose XL1000	115	Pt	-	8	50	29,19,17	
Bose XL2000	160	Pt	-	8	70	36,23,18	
Bose XL3000	180	Pt	-	8	90	47,29,23	
Bose 101 M'ble Monitor	190	-	-	4	60	13,23,15	Black finish
Bose XL4000	220	Pt	-	8	100	57,32,30	
Bose VS100	250	-	-	8	-	23,15,15	
Bose 151 Environmental	270	-	-	6	60	24,14,16	Waterproof/suitable for extrem
Bose 161 Freestyle	275	-	-	6	60	25,14,16	
Bose 201 Ser III	290	-	-	8	60	38,20,25	Direct/reflecting technology
Bose C'puter RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Video RoomMate	300	Active	-	-	60	24,14,16	Self powered AC/shielded, vol
Bose Roomate II	300	Active	-	-	60	24,14,16	Self powered AC/12V DC
Bose 301 VM	380	-	-	8	75	24,43,27	Direct/reflecting technology
Bose 305	430	2x	-	8	100	23,45,28	Tall stand mount, boundary
Bose A'mass AM3 II	500	-	-	4-8	50	36,20,20	Acoustimass technology
Bose 401	500	-	-	4	100	30,30,76	Direct/reflecting technology
Bose SE-5 Ser II System	760	-	-	4-8	100	90,100,18	
Bose A'mass AM511	760	-	-	4-8	200	49,35,19	Acoustimass direct/reflecting
Bose A'mass AM7	830	-	-	4-8	100	35,49,19	Acoustimass direct/reflecting
Bose 601 MkIII	880	-	-	8	200	32,31,76	Direct/reflecting technology
Bose 901 V1	1650	1x	-	8	-	33,53,32	Direct/reflecting technology
Boston Acoustics HD5	139	2x	89	8	50	25,16,18	Bookshelf, black
Boston Acoustics 325	139	-	90	4	50	17,17,5	Wall/ceiling white flush mount
Boston Runabout	169	-	89	8	50	22,15,16	White indoor/outdoor system
Boston Acoustics HD7	169	2x	90	8	75	36,23,18	Bookshelf, black
Boston Satellites	170	2x	89	8	-	-	Satellite speakers
Boston Acoustics 350	179	-	-	4	50	24,17,6	Wall/ceiling white flush mount
Boston Acoustics 335	179	-	90	8	50	18,9	Wall mount, round
Boston Acoustics HD8	199	-	90	8	75	46,29,20	Stand/shelf, black
Boston 360 Ser II	209	-	89	8	60	22,15,7	Wall/ceiling, white, flush mou
Boston Acoustics HD9	249	2x ABR	90	8	100	62,32,25	Stand/shelf mount
Boston Acoustics 380	249	-	90	8	75	31,24,8	Wall/ceiling white flush mount
Boston Acoustics Voyager	299	-	89	8	60	26,16,17	White indoor/outdoor, metal
Boston Acoustics SW10	449	Sub	-	-	100	34,17,42	Powered subwoofer
Boston SubSat Six	450	Sat/sut	89	8	100	-	Passive subs and two satellite
Boston SubSat 7	549	-	89	8	125	-	Passive sub & 2 satellites
Boston Lynfield 300L	1499	-	83	8	250	23,34,28	Stand mount, black
Boston Lynfield 500L	4449	-	85	5	350	122,23,47	Free stand, separate bass/top
Canon S-C10	130	2x	87	8	95	34,15,15	Shielded, wide-imaging stereo
Canon SV-15	130	2x	86	8	50	24,17,17	Utility - wide dispersion
Canon S-30	180	1x Pt	90	6	75	23,27,24	Wide imaging stereo
Canon S-B20	200	Sub	87	8	100	48,39,37	Free standing, passive
Canon V-100	210	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	199	Pt	89	8	60	20,34,18	Shelf/stand, nine finishes
Castle Durham 900	279	Pt	90	8	85	22,40,23	Shelf/stand, nine finishes
Castle York	399	Pt	89	8	100	26,43,22	Stand mount, stands inc
Castle Severn	499	Pt	87	8	110	23,77,20	Free standing, 9 finishes
Castle Chester	699	Horn	90	8	100	23,91,25	Quarter wave, nine finishes
Castle Howard	999	3xHorn	90	8	125	26,104,41	Quarter wave, nine finishes
Castle Winchester	1499	3x	90	8	150	42,108,23	9 finishes, quarter wave
Celestion 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	-	82	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	



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LOUDSPEAKERS							
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/sut	95	-	125	22,25,32	3 box satellite/subwoofer
Cerwin Vega VS10	350	3x	95	6	125	33,70,29	Floor standing
Cerwin Vega VS12	550	3x Pt	97	4	250	42,81,38	Floor standing
Cerwin Vega DC10	550	3x Pt	96	-	200	29,94,35	Floor standing
Cerwin Vega DC12	650	3x Pt	98	-	300	36,98,35	Floor standing
Cerwin Vega VS15	700	3x Pt	102	4	400	46,90,47	Floor standing
Cerwin Vega DC15	850	3x Pt	100	-	500	44,103,46	Floor standing
Cerwin Vega 1515	1300	6x Pt	103	4	600	44,135,46	Floor standing, hi sensitivity
Chord Sys Audio 905	249	2x	89	8	70	27,15,19	Black Ash
Clements 300Si	395	-	89	4-8	90	24,36,36	Compression line
Clements 600Si	595	-	88	4-8	100	24,81,36	Compression line
Clements Reference 1	995	-	86	8	100	20,43,29	Ribbon tweeter
Clements Reference 7	1995	-	88	4.5	200	25,114,4	Ribbon tweeter
Dali 102B	260	-	88	6	100	21,32,26	
Dali 104B	370	-	93	4	120	86,22,27	
Dawn Audio Chorus BS	482	2x IB	89	8	-	26,38,21	Bookshelf
Dawn Audio 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
ENCA SERVO A.2	1850	2x Pt	80	8	150	22,102,30	True ribbon tweeter
Epos ES11	395	Pt	87	8	75	20,38,25	Free space, stand mount
Epos ES14	595	Pt	87	8	100	23,49,29	Free space, stand mount
Epos ES25	1505	3xPt	88	6	200	90,24,35	Floor standing
Faraday FS1	245	2x	87	8	75	27,46,25	Matt black or granite effect
Faraday SG	345	2x	89	4	75	27,26,25	Matt black or granite effect
Faraday Siren	445	2x	90	4	80	27,25,46	Matt black or granite effect
Faraday FS10	795	3x	91	4	100	27,25,93	Matt black or granite effect
Fullers Sultan	399	2xPt	91	8	50	24,51,30	3 finishes
Fullers Sultan H.E.	439	2xPt	98	8	90	24,51,30	High sensitivity, 3 finishes
Fullers Pharaoh 1	649	2xPt	88	8	60	20,30,20	Curved sides, various finishes
Fullers Sphinx	839	3x	89	8	70	25,91,30	Floor standing, var finishes
Fullers Pharaoh 2	1200	3xPt	88	8	80	39,100,31	Pharaoh 1 with added bass endcl
Fullers Pharaoh 3	2499	4xPt	88	8	150	46,118,45	Pharaoh + bass & subbass encls
Gale Reference Monitors	100	2x	88	8	70	-	Bookshelf, black finish
Gale Model 2	150	2x	88	8	70	-	Bookshelf, black finish
Gale Model 4	200	2	88	8	75	-	Bookshelf, black finish
Gamma Acoustics Epoch	1499	-	-	-	-	27,95,36	
Genelec 1019A	1572	Active	-	-	28	23,31,25	
Genelec Blamp 1031A	2068	Active	-	-	104	25,39,29	
Genelec Triamp S30	3055	Active	-	-	108	32,50,32	
Genelec Triamp 1037A	4982	Active	-	-	191	40,68,30	
Genexxa GX330	80	-	-	6	50	35,21,24	
Genexxa GX650	140	-	90	8	60	23,76,26	
GLL Arena	89	-	87	6	70	26,23,14	
GLL Maxim	119	-	86	6	100	10,26,17	
GLL Mezzo	159	-	88	6	100	21,36,25	
GLL Magnum	199	-	86	6	100	25,42,29	
Goodmans Active 75	65	Active	-	-	80	-	
Goodmans M100	80	2x	86	8	75	17,26,20	Bookshelf, close to wall
Goodmans HT100	100	-	86	8	60	25,53,20	

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LOUDSPEAKERS							
Infinity Int IV/Sat	300	IB	90	6	80	16,24,18	Wall mount, shielded
Infinity SM105	350	Pt	100	8	150	53,30,30	Auto reset protection circuit
Infinity Int Micro II	400	Pt/sub	90	6	100	21 x 127d	Two satellites and passive sub
Infinity SM115	450	3xPt	100	8	175	76,34,32	Auto reset protection c
Infinity SSW-10 Sub	500	Active	-	-	-	34,34,33	
Infinity SM125	550	3xPt	100	8	200	89,37,32	Auto reset protection circuit
Infinity SM155	650	4xPt	102	8	300	102,45,32	Auto reset protection circuit
Infinity Kappa 6.11	995	Pt	89	6	150	31,95,25	Floor standing
Infinity Kappa 7.11	1195	Pt	89	6	225	36,108,26	Floor standing
Infinity ARS Epsilon	9995	IB	87	4	500	152,47,41	Includes own servo control amp
Interaudio XL1000	100	-	-	8	50	19,29,17	
Interaudio XL2000	140	-	-	8	70	23,36,18	
Interaudio XL3000	160	-	-	8	70	29,46,23	
Interaudio XL4000	200	-	-	8	75	32,56,29	
Jamo Studio 80	60	2xPt	91	-	45	22,35,17	
Jamo Studio 110	100	3xPt	91	4	50	24,42,22	
Jamo Sat 160	100	2xIB	90	8	50	14,20,88	Shelf/wall mount, with wall br
Jamo D115	100	-	91	4-8	75	24,42,22	
Jamo Cornet 30.4	100	2x Pt	88	8	55	20,32,23	Black ash - Mahogany E20 extra
Jamo Sat 200	110	2x	90	8	50	15,22,88	Stereo passive sub
Jamo Sat 300	120	2x	90	8	50	15,21,8	Use with SW500
Jamo Cornet 40.4	140	2x Pt	89	8	60	20,32,23	Black ash - Mahogany E20 extra
Jamo Studio 180	150	3xPt	92	4	80	22,50,26	
Jamo Artina	150	2xPt	90	8	50	19,25,8	Small, flat wall speaker
Jamo Sat 500	150	2x Pt	90	8	50	16,21,14	Satellites for SW500
Jamo D135	150	-	94	4-8	90	28,52,25	
Jamo Converta	150	2x Pt	90	8	50	9,25,24	Lamp-like appearance
Jamo Cornet 60.4	180	2x Pt	90	8	80	23,42,27	Black ash - Mahogany E20 extra
Jamo D165	190	-	94	4-8	100	28,52,25	
Jamo SW160 System	200	-	90	8	-	20,34,48	Subwoofer, adjustable
Jamo Art	200	2x Pt	88	8	60	35,40,9	Shape and size of shallow 20 i
Jamo Classic 4	230	2xPt	90	4	100	20,47,25	
Jamo D265	300	3xPt	95	4	150	44,68,32	
Jamo Classic 6	300	2xPt	90	4	100	20,84,29	Inc spiked feet
Jamo BX100A	300	3x Pt	91	8	100	32,55,28	Floor or stand mount
Jamo 307	300	2x Pt	87	6	70	18,31,27	Stand mount
Jamo Cornet 90-4	330	3xIB	91	4	140	26,87,27	
Jamo 407	350	2x Pt	88	4	80	22,41,29	Stand mount
Jamo Graphic	350	2x Pt	88	8	60	39,44,8	Wall mount
Jamo Atmosphere	380	2x Pt	88	8	60	27,37,16	Wall mount, doubles as lamp
Jamo Cornet 100-4	400	3xIB	91	4	200	32,95,27	
Jamo Classic 8	400	3xPt	90	4	150	23,90,29	Inc spiked feet
Jamo Silhouette	400	-	90	5	80	25,122,17	
Jamo D365	400	-	96	4-8	200	46,78,35	
Jamo BX150A	400	3x Pt	92	8	150	38,63,31	Floor mount
Jamo SW500 System	430	2x	90	8	140	41,38,53	Passive stereo subwoofer
Jamo BX200A	450	3x Pt	93	8	250	29,17,13	Floor mount
Jamo 477	500	2x Pt	88	4	100	19,77,29	Floor standing
Jamo 507	700	3x Pt	88	4	150	22,91,37	
Jamo 707	900	3x Pt	90	4	200	24,104,39	
Jamo Oriel	6000	3x	87	6	300	40,178,30	Floor standing, coupled cavity
JBL Control One	115	2xPt	87	4	150	24,156,14	Shielded, wall mountable
JBL 4208	449	-	89	8	300	29,45,23	
JBL L1	479	2x Pt	87	8	200	25,40,20	Asymmetric, time aligned
JBL HTS-1	629	-	-	-	150	-	
JBL L3	699	2x Pt	89	8	200	30,86,24	Asymmetric, time aligned
JBL HTS-2 system	800	-	-	4	150	-	
JBL HTS-3	999	-	-	-	180	-	
JBL L5	1299	3x Pt	90	6	300	26,45,33	Asymmetric, time aligned
JBL Ti 1000	1500	2x IB	89	4	150	20,30,13	Asymmetric, double wall
JBL L7	1699	4xPt	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

Listings marked in red (as shown below) are covered in the Hi-Fi Choice Directory.

Audiob 8000A 450 Int N 60 MM,MC,1T,3T Y N 45,8,36 Preout/main in

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LOUDSPEAKERS							
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 Coda 7	129	2xPt	91	6	70	18,30,25	Black ash finish
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 Q60	419	2x Pt	90	8	100	25,48,28	Uni Q, bookshelf/stand
KEF 101/3 Black	549	2x Pt	87	6	150	22,33,26	Uni Q, Kube option
KEF LS3/5a	599	2xIB	82	11	30	19,30,16	Raymond Cooke Special Edition
KEF Q70	699	4xPt	90	6	175	19,105,30	Uni-Q, shielded, floor stand
KEF Model One	999	3xCC	89	4	150	23,86,30	Uni-Q, floor stand, shielded
KEF Model Two	1499	4xCC	90	4	200	23,101,30	Uni-Q, floor stand, shielded
KEF 104/2 REC	1799	5xCC	92	4	200	28,90,41	Raymond Cooke Special Edition
KEF Model Three	1999	5xCC	91	4	300	27,114,34	Uni-Q, floor stand, shielded
KEF 107/2 REC	3999	4xCC	90	4	300	33,116,45	Raymond Cooke Special Edition
Kenwood LS-200G	200	Pt	89	4	60	21,35,30	European design
Kenwood LS-700G	260	Pt	88	4	110	27,48,26	European design
Kenwood LS-300G	300	Pt	82	8	60	21,35,30	European design
Kenwood LS-880G	360	Pt	86	4	160	28,51,26	Titanium tweeter
Kenwood LS-500G	500	Pt	87	4	100	22,44,28	European design
Kenwood LS-700G	1200	Pt	87	4	120	30,90,30	European design
Kenwood LS-1000G	1700	Pt	87	4	160	34,110,38	European design
Keswick Audio Aria	269	2x	88	8	70	21,42,27	Bookshelf
Keswick Audio Volante	499	-	90	8	85	21,85,27	Floor standing
Keswick Audio Figaro	799	-	86	8	125	19,28,27	Features solid timbers
Keswick Audio Alto	999	Sub	87	8	150	19,70,27	To match Figaro
Koss SA10	19	Active	-	-	-	-	High imp
Koss SA20	25	-	-	-	-	-	
Koss SA30	36	Active	-	-	-	-	High impedance
Linaeum LFX Wood	649	Hybrid	90	-	-	16,22,18	Modified ribbon/dynamic
Linaeum LSII	991	Hybrid	90	-	-	30,150,38	Modified ribbon/dynamic
Linaeum 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							



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Metaxas Emperor	19500	ESL	99	8	250	100,230.8	Full range, multi-panel ESL
Mission 73S	100	2xPt	89	8	50	15,26.15	Stand mount, shelf, w/brackets
Mission 731	130	2xPt	89	8	75	31,17.20	Stand mount, bookshelf
Mission 760i	130	2xPt	89	6	75	18,30.20	Stand mount, boundary siting
Mission 73C	150	2x	90	8	75	16,20.43	TV top, shielded
Mission 760i SE	150	2xPt	89	6	75	18,30.20	Stand mount, boundary siting
Mission 732	200	2x	89	8	100	41,21.31	Stand mount, boundary
Mission 780SE	270	2xPt	89	6	75	18,30.20	Stand mount, boundary siting
Mission 733	300	2x	89	8	100	84,21.31	Floor standing, boundary
Mission 751	300	2xPt	89	6	75	19,32.27	Stand mount, boundary
Mission 734	430	3x	90	8	125	84,21.33	Floor standing, boundary
Mission 752	500	2xPt	90	8	125	20,84.26	Floor stand, boundary
Mission 735	600	3x	90	8	150	106,21.33	
Mission 753	700	2xPt	90	6	150	21,88.32	Floor stand, transverse folded
Modulus Subwoofer	1750	Active	-	-	250	49,45.45	Variable phase, high/low filte
MA Monitor 1 Gold	200	2x IB	88	8	70	16,24.16	Miniature stand/shelf mount
MA Monitor 7 Gold II	245	2xPt	89	8	70	17,35.17	Stand/shelf mount
Monitor Audio MA100G	280	2x IB	89	8	120	16,24.16	As MA Monitor 1, shielded
Monitor Audio MA201	300	2xPt	90	8	100	22,41.27	Gold dome tweeter, pulp bass
MA Monitor 9 Gold II	350	2xPt	88	8	100	21,37.21	Stand/shelf mount
Monitor Audio MA202	450	2xPt	90	8	100	22,89.29	Gold dome tweeter, pulp bass
MA Monitor 14 Gold II	500	3x	88	8	120	21,76.24	Floor/shelf standing
Monitor Audio Studio 2	600	2x	89	8	120	27,17.20	
Monitor Audio Studio 6	900	2xPt	88	8	200	22,35.25	Stand/shelf mount, metal bass
Monitor Audio Studio 12	1000	2	90	8	200	92,17.20	Black - rosewood extra
MA Studio 20SE	2200	2xPt	88	8	200	20,92.26	Floor stand, metal cone bass
Monitor Audio Studio 50	4000	2x	90	8	300	20,104.30	Floor stand, metal bass & mid
M-S CS-1 Dialogue	60	2xPt	87	8	100	16,23.13	Shielded, Postec protected
Mordaunt-Short MS05	110	Pt	87	8	60	26,17.18	Bookshelf, wall positioning
M-S CS1 Stereo	115	Pt	87	8	100	16,23.13	Shielded, Postec protected
Mordaunt-Short MS10	140	Pt	88	8	60	19,31.22	Alloy tweeter, MCS woofer
Mordaunt-Short HT30	150	Pt	90	8	120	25,43.29	Shielded, Postec protected
Mordaunt-Short SW1	150	Sub	90	8	100	24,58.26	Coupled cavity, matches CS1
Mordaunt-Short MS20	190	Pt	89	8	75	22,37.22	Alloy tweeter, MCS woofer
M-S CS-1 Triple	200	2xPt	87	8	100	16,23.13	Shielded, Postec protected
Mordaunt-Short MS30	270	Pt	90	8	100	25,43.28	Alloy tweeter, MCS woofer
Mordaunt-Short HT50	275	Pt	90	8	120	25,87.33	Positec, integrated subwoofer
Mordaunt-Short MS40	400	Pt	90	8	150	23,82.28	Alloy tweeter, MCS woofer
Mordaunt-Short MS50	530	Pt	90	8	200	25,87.33	Alloy tweeter, MCS woofer
NAD 800	149	Pt	90	6	60	20,32.24	10 litre enclosure
NAD 802	219	Pt	90	6	80	20,40.26	11.5 litre enclosure
Naim IBL Active	776	-	-	-	65	25,80.28	Boundary, floor standing
Naim IBL Passive	895	-	86	6	65	25,80.28	Boundary, floor standing
Naim SBL Active	1586	-	-	-	75	27,89.27	Boundary, floor standing
Naim SBL Passive	1708	-	88	6	75	27,89.27	Boundary, floor standing
Naim DBL Active	6991	-	-	-	200	65,120.40	Boundary, floor standing
Naim DBL Passive	7672	-	92	4	200	65,120.40	Boundary, floor standing
Neat Petite	595	2x	87	6	100	20,30.18	
Orelle Orator II	699	2xPt	91	8	100	27,40.30	Time aligned, biwire
Origin Live OL1B	289	-	89	8	100	20,30.19	
Origin Live OL2B	349	-	90	8	150	19,80.19	Floor standing
Origin Live OL-1AS	399	-	89	8	199	20,30.19	Floor standing
Origin Live OL-1A	399	-	86	8	150	20,30.19	
Origin Live OL-2AS	469	-	90	8	100	19,80.19	Floor standing
Origin Live OL-2A	469	-	86	8	150	19,80.19	Floor standing
Origin Live OL-1	499	-	86	8	150	20,30.19	
Origin Live OL-2	649	-	86	8	150	19,80.19	Floor standing
Origin Live OL3	975	3x	88	8	150	19,83.23	Floor standing
Origin Live Conqueror	1600	3x	89	8	150	23,87.23	Floor standing
Pentachord A	449	IB	87	8	80	21,28.20	Direct coupled
Pentachord B	499	IB	87	8	80	52,35.52	Active crossover, including el
Pentachord Pentode	695	IB	87	4	80	20,74.20	Active crossover, including el
Pentachord P'column	1579	2xIB	87	4	80	21,108.20	Including active crossover, 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 Vertical	865	Hybrid	86	11	100	15,80.32	Ribbon hybrid
Pioneer CS-3030	120	3xPt	90	8	120	27,54.24	Bookshelf
Pioneer CS-5030	170	3xPt	90	8	140	31,53.25	Bookshelf
Pioneer CS-7030	230	3xPt	90	8	190	35,70.28	Bookshelf
Pioneer S-4UK	250	2xPt	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	3xPt	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	2xPt	91	8	100	24,39.18	Stand mount, free standing
Polk M3	200	2xPt	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	2xPt	89	8	250	27,83.29	Floorstanding
Polk LS70	1200	2xPt	90	8	250	31,94.37	Floorstanding, biampable
Polk LS90	1700	3xPt	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

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
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	2xPt	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 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 EL6	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	59,56.37	Active, internal amp
REL Studio	2995	Sub	-	-	1kw	69,62.52	Active, internal amp
Revolver by Ram Beretta	100	2xPt	87	6	80	30,19.22	Bookshelf/stand mount
Revolver by Ram Colt	149	2xPt	88	6	100	30,19.22	Bookshelf/stand mount
Revolver by Ram Purdey	249	2xPt	88	6	120	75,19.22	Floor stand, with plinth
Rogers LS1	199	2x	-	6	75	20,20.30	Stand required
Rogers LS2a/2	250	2x	86	8	100	23,36.21	Use about 30cm from wall
Rogers LS4a/2	330	2x	88	8	-	-	Various finishes
Rogers Studio 3	449	2x	85	8	45	19,30.16	Stand required
Rogers AB1C Subwoofer	499	1x	-	8	50	57,19.16	Passive subwoofer
Rogers LS3/5A	699	2xIB	-	12	50	31,19.16	Small broadcast monitor
Rogers Studio 5	699	2x	-	8	100	25,25.48	Stand required
Rogers P20	750	2xPt	88	8	150	26,42.30	Stand mount, stands available
Rogers P22	832	2xPt	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	895	Pt	88	8	250	28,76.46	Floor standing, sprung tweeter
Royd The Herald	198	Pt	86	8	100	31,20.18	Stand mount
Royd The Minstrel	259	Pt	86	8	100	69,18.12	Side port, floor standing
Royd Merlin	298	Pt	86	8	100	31,20.18	Veneered
Royd The Sorcerer	595	Pt	86	8	120	31,20.18	Front port, near field monitor
Royd The Abbot	665	Pt	90	8	120	81,20.30	Floor standing, free space
Royd The Prior	978	Pt	90	8	150	96,37.26	Floor standing, free space
Ruark Swordsman Plus II	299	2x IB	87	8	100	20,38.27	Near wall/stand mount
Ruark Sabre II	385	2x IB	87	8	100	23,37.27	Wall/free, on stands
Ruark Templar	479	2x IB	87	8	100	19,70.27	Wall or free, no stands reqd
Ruark Talisman II	699	2xPt					

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Key to loudspeakers
Price - typical retail, to nearest pound.
Type - 2x, 3x etc - number of independent drive units, Pt - ported, IB - sealed, Active - dedicated active crossover, needs amps for each driver, ABR - auxiliary bass radiator, Sub - subwoofer, Uni-Q - KEF prop. coaxial drive unit, Horn - horn loading, MC - moving coil, ESL - electrostatic, CC - coupled cavity, Hybrid - dynamic bass/ESL or ribbon top.

Sens - output at given power input level.
Impedance - in ohms. Power - maximum recommended amplifier output.
Size - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to receivers
Price - typical retail, to nearest pound.
A/V - minimum requirements - Dolby Surround/Pro-Logic circuitry.
Power - watts/channel, both channels driven RMS 8ohms, 20Hz - 20kHz.
Wavebands - FM, L - long wave, M - medium wave.
Pres ets - number thereof.
In/outputs - MM/MC - moving coil/moving magnet, L - line, T - tape, V - audio input or tape circuit with video signal routing.

Remote - control.
Prc - width x height x depth in cm.
Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Type	Sens	Impedance	Power	Size	Special	
LOUDSPEAKERS								
Spendor SP3/1	890	2x	85	8	70	40,22,25	Stand mount, free space	
Spendor SP2/3	1100	2x	88	8	80	28,55,33	On stands, free space	
Spendor SP1/2	1430	3x	89	8	90	30,63,30	Stand mount, free space	
Spendor SP7/1	2000	2x	89	8	100	85,30,35	Floor standing	
Spendor SP100	2230	3x	90	8	100	37,70,43	Classic monitor, free space	
Spendor SP9/1	3300	3x	90	8	125	106,37,44	Floor standing monitor	
Spica TC50	649	IB	86	4	50	33,39,29	Free space, on stands	
Spica TC50SE	849	IB	86	4	50	33,39,29	Free space, on stands	
Spica TC50SEX	949	IB	86	4	50	33,39,29	Free space, on stands	
Spica Angelus	1295	IB	87	8	200	53,117,26	Free space, floor standing	
Tannoy 631	149	2xPt	87	6	70	19,34,15	Advanced 'silent' enc	
Tannoy 632	189	2xPt	88	8	90	51,43,27		
Tannoy 633	319	3xIB	89	8	100	29,75,28		
Tannoy Subsat3	399	3xPt	88	8	120	11,16,9	Subsat system with ICT tech	
Tannoy 636	419	3xIB	90	6	120	29,75,28		
Tannoy 637	499	3xIB	91	6	150	33,86,32		
Tannoy 625	595	Active	-	-	90	58,49,45	Servo, current drive subwoofer	
Tannoy 638	599	3xPt	91	6	175	33,96,32		
Tannoy D100	649	2xPt	89	8	120	25,36,22	6.5 inch Dual Concentric	
Tannoy D500	1470	3xPt	91	6	175	31,93,34	8 inch Dual Concentric	
Tannoy Sterling TW	1750	2x	93	8	150	48,70,31		
Tannoy D700	2100	3xPt	93	6	200	37,99,36	10 inch Dual Concentric	
Tannoy Edinburgh TW	2700	2x	95	8	180	66,102,42		
Tannoy GRFM TW	3500	2x	95	8	200	80,100,48		
Tannoy Canterbury 12^	5500	2x	94	8	200	58,90,43		
Tannoy Westminster TW	6000	2x	99	8	200	-		
Tannoy Canterbury 15^	7000	2x	96	8	250	68,110,48		
Tannoy Westminster Royal	13500	2x	99	8	200	98,139,56		
TDL Near Field Monitor	120	2x	88	8	70	18,30,17		
TDL RTL2	300	-	87	8	80	20,73,22	Reflex transmission line	
TDL RTL3	400	-	90	8	120	20,90,37	Reflex transmission line	
TDL Studio 0.5	499	-	85	8	75	20,62,30	Transmission line	
TDL Studio 1	699	2x	86	8	120	23,77,33	Transmission line bass	
TDL Studio 0.75m	749	2xTSL	85	8	100	29,67,31	Metal dome tweeter	
TDL Studio 1m	899	2TSL	86	8	120	23,77,34	Metal drivers	
TDL Reference Monitor	1999	-	87	8	350	30,119,47	Transmission line	
Teac LSX8	80	-	-	-	8	30	11,18,11	
Teac SW1	120	Sub	-	-	6	100	17,44,30	Coaxial, shielded
Teac S300	150	2x Pt	-	-	6	100	17,24,17	
Technics SB-CS55	80	2x Pt	-	-	8	60	25,23,25	Shell/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 T2x	325	-	90	8	75	20,25,32		
Triangle Comete T2x	475	-	91	8	100	22,28,40	Suits low powered valve amps	
Triangle Norma	775	-	93	8	150	26,84,25	Suits low power valve amp	
Triangle Alcante	999	-	92	4	200	22,100,22	Suits low power valve amp	
Triangle Zayo	1299	-	92	8	250	99,22,28		
Triangle Altina	1850	-	90	8	300	104,22,22		
Triangle Altair	2450	-	92	4	300	35,120,30	Proprietary tweeter	
Triangle Octant T2i	3750	-	94	4	300	42,150,19	Ultra high sensitivity	
UKD Opera Prima	450	Pt	88	8	75	20,33,25	Solid walnut, stand mount	
UKD Opera Seconda	550	Pt	88	8	100	23,35,34	Solid walnut, stand mount	
UKD Operetta	660	Pt	87	8	70	22,30,26	Solid mahogany, stand mount	
UKD Callas Mahogany	750	Pt	88	8	120	34,22,32	Solid mahogany, stand mount	
UKD Super Pavarotti	875	Pt	88	8	150	23,55,23	Solid mahogany, stand mount	
UKD Callas Walnut	895	Pt	87	6	150	34,22,32	Solid walnut, Focal drivers	
UKD Divina	1390	Pt	87	8	150	24,39,40	Solid walnut, stand mount	
UKD Caruso	2250	Pt	88	8	200	22,97,28	Solid walnut, floor standing	
Vandersteen 20c	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 CRSS	89	2x Pt	89	8	100	22,38,17	Stand/bookshelf mount	
Wharfedale Diamond 6R	109	Pt	89	8	100	16,27,22	Stand/bookshelf mount	
Wharfedale Modus Micro	109	2x Pt	86	8	75	14,23,12	Shielded	
Wharfedale Modus Centre	119	Pt	87	8	75	46,14,12	Shielded centre speaker	
Wharfedale Diamond V	129	Pt	87	8	100	18,26,20	Stand mount, near wall	
Wharfedale CRS5	129	2x Pt	89	8	140	26,48,20		
Wharfedale Modus Mini	139	ABR	86	8	75	14,39,12	Shielded two-way	
Wharfedale Modus One	159	2xPt	89	8	100	22,41,29	Stand/bookshelf mount	
Wharfedale Modus Sub-bass	179	Pt	88	8	200	57,23,38	Two channel double tuned sub-w	
Wharfedale Modus Three	199	2xPt	90	8	100	22,57,29	Stand/bookshelf mount	
Wharfedale CRS7	199	Pt	91	8	150	26,60,21		
Wharfedale Modus Five	259	3xPt	90	8	125	22,65,29	Stand/bookshelf mount	
Wharfedale CRS9	299	Pt	93	8	160	31,80,28	Floor standing, three way	
Wharfedale Modus Seven	339	3xPt	90	8	125	22,81,20	Floor standing	
Wharfedale Modus One-T	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	

Model	Price	Type	Sens	Impedance	Power	Size	Special
LOUDSPEAKERS							
Wilson WAP Puppy II	5600	Sub	91	-	-	25,53,35	Passive subwoofer for WATT
Wilson WATT III	7700	2x	91	-	-	27,31,36	
Wilson WHOW II	12500	Sub	98	-	-	88/65,36	Active subwoofer for WATT
Yamaha NS-C80	99	-	90	6	80	14,45,17	
Yamaha NS-E80	120	-	90	6	50	27,20,7	
Yamaha NS-C110	149	-	90	6	120	15,47,18	
Yamaha NS10M	250	-	90	8	100	21,38,20	
ZYP A1	199	IB	88	8	50	14,22,12	Wall mount
ZYP A1T	219	IB	88	8	50	14,22,12	Magnetically shielded
ZYP A2S	299	2xIB	88	8	50	22,14,12	Studio nearfield monitor

Model	Price	A/V	Power	Wavebands	Presets	In/outputs	Remote	Size	Special
RECEIVERS									
B&O Beomaster 7000	920	N	75	FM,M,L	24	MM,2L,2T	Y	-	
Denon DRX-365RD	250	N	45	FM,M	20	MM,3L,1T	Y	44,12,32	System remote
Denon DRX-545RD	320	N	60	FM,M	24	MM,3L,2T	Y	44,12,32	RDS
Denon AVR-1000	520	Y	70	FM,M	16	MM,2L,2T	Y	44,15,33	Auto input balance
Dual CR9000RS	200	N	55	FM,M,L	30	MM,4L,2T	Y	44,14,30	System component
Grundig R210	150	N	50	FM,M,L	59	MM,5L	Y	36,12,30	Gain switch, remote
Grundig R2	250	N	50	FM,M,L	59	MM,5L	Y	44,14,30	RDS, Radio text, remote
Harman-Kardon HK3300	379	N	20	FM,M	-	MM,3L,2T	Y	45,13,35	
Harman-Kardon HK3400	499	N	35	FM,M	-	MM3L,2T	Y	45,13,35	
Harman-Kardon HK3500	699	N	50	FM,M	-	MM,4L,2T	Y	45,13,35	
Harman-Kardon HK3600	799	N	75	FM,M	-	MM,4L,2T	Y	45,13,35	
Harman-Kardon AVR-30	999	Y	50	FM,M	16	MM,3L,3T,6V	Y	45,13,35	Dolby Pro Logic
JVC RX-212XBK	200	N	50	FM,M,L	40	MM,3L,1T	Y	44,13,34	4ch surround
JVC RX-308BK	230	N	70	FM,M,L	40	MM,3L,1T	Y	44,13,34	4 channel surround
JVC RX-508VBK	350	Y	50	FM,M,L	40	MM,1L,3T	Y	44,13,34	5ch Dolby Pro Logic
JVC RX-808VBK	570	Y	70	FM,M,L	40	MM,1L,3T	Y	44,16,40	5ch Dolby Pro Logic
Kenwood KR-A4060	230	N	80	FM,M	20	MM,3L,2T	Y	44,13,33	RDS
Kenwood KR-V6060	350	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Kenwood KR-V7050	400	Y	100	FM,M	20	MM,3L,2T	Y	44,15,40	Dolby Pro Logic, RDS
Marantz SR-63	330	N	80	FM,M,L	30	MM,3L,1T	Y	43,14,34	
Marantz SR-73	599	Y	75	FM,M	30	MM,3L,3T	Y	43,15,38	Dolby Pro Logic
Marantz SR-82	899	Y	75	FM,M	30	MM,3L,2T	Y	43,17,43	Dolby Pro Logic, multi-room
NAD 701	259	N	25	FM,M	24	MM,2L,1T	Y	-	
NAD 705	329	N	40	FM,M	39	MM,2L,2T	Y	-	
Philips FR940	450	Y	100	FM,M,L	30	MM,4L,4T	Y	44,14,30	Dolby Pro Logic
Pioneer SX-203RDS	200	N	35	FM,M	30	MM,2L,2T	Y	42,14,29	RDS tuner
Pioneer SX-303RDS	250	N	50	FM,M	30	MM,2L,2T	Y	42,14,34	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	170	N	30	FM,M	30	MM,2L,2T	Y	-	
Sherwood RX1010	320	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	-	

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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.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to tuners
Price - typical retail, to nearest pound.
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.
Presets - total number of presets on all bands.

RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.
Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

Model	Price	Source	Power	Size	Special
SYSTEMS					
Aiwa NSX-D939	750	CD,R,2T	50	-	Dolby Pro Logic, incl speakers
Aiwa Z-D9100M	900	CD,R,Tu,2T	75	36,63,35	Midi, Pro Logic inc speakers
Akai MX92	279	CD,R,2T	25	26,38,24	
Akai MX115	399	CD,R,2T	35	27,39,26	Graphic equaliser
Akai RX90	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 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
Denon D-250/S	1000	CD,R,Tu,2T	50	27 wide	RDS, inc optional UK speakers
Denon D-F10/S	1150	CD,R,Tu,1T	50	-	All components sold separately
Dual MS2600	499	CD,R,2T	30	27,39,30	Karaoke support
Goodmans System 700	600	CD,R,2T	50	-	
Grundig MC10	300	CD,R,T	25	18,36,29	'Super Mini', Dolby NR
Grundig M10	330	CD,R,2T	22	27,37,34	Five band graphic & full remot
Grundig M20	430	CD,R,2T	35	25,37,30	Spectrum analyser
Grundig Fine Arts S1	750	CD,R,2T	50	44,45,30	
Grundig Fine Arts S3	770	CD,R,2T	50	44,37,30	Separates system
Grundig Fine Arts S2	890	CD,R,2T	80	44,45,30	Separates system
Grundig Fine Arts S4	1130	CD,R,2T	120	44,45,30	Separates system
Grundig Fine Arts S5	1300	CD,R,2T	120	44,41,30	Separates system
Hitachi AX10	329	CD,R,2T	20	23,29,28	Inc graphic equaliser
Hitachi AX12	350	CD,R,2T	20	23,34,32	Graphic equaliser
Hitachi AX10	379	CD,R,2T	20	23,29,28	6-disc, graphic equaliser
JVC Adagio S20	370	R,CD,2T	30	25,27,35	Live surround
JVC Midi-W48CD	430	R,CD,2T	30	36,50,34	Live Surround
JVC Adagio S30	430	R,CD,2T	32	25,27,35	Live surround, Karaoke
JVC Adagio S50	450	R,CD,2T,V	40	40	Live Surround system
JVC Adagio C33	450	R,CD,2T,V	30	25,33,34	Live surround, 7CD disc system
JVC Midi-W58CD	500	R,CD,2T	50	36,48,25	Bass compensator
JVC Adagio S50R	500	R,CD,2T	40	25,36,35	Live surround, RDS
JVC Adagio C55	600	R,CD,2T,V	36	24,36,34	Advanced 7CD disc system
JVC Adagio S60R	600	R,CD,2T	45	28,36,35	Panoramic surround, RDS
JVC Midi-W78CD	750	R,CD,2T	60	36,57,29	Two channel surround
JVC Adagio G7	800	R,CD,2T,V	50	28,43,28	Panoramic surround
JVC Adagio G9	1000	R,CD,2T,V	55	28,43,28	Panoramic surround
Kenwood UD-302	400	CD,R,2T	33	27,36,31	3-disc carousel
Kenwood UD-502	500	CD,R,T,2T	55	27,41,31	Presence modes
Kenwood M-28MG	600	CD,R,T,2T	30	36,56,38	Five disc CD carousel
Kenwood UD-552	650	CD,R,2T	32	27,41,31	7-CD Bank system
Kenwood M-58M	850	CD,R,Tu,2T	60	36,62,38	Dolby Pro Logic
Kenwood HD-600	900	CD,R,Tu,T	40	27,40,35	'Audiophile' mini
Kenwood UD-952	1000	CD,R,Tu,2T	70	27,41,31	Dolby Pro Logic
Kenwood HD-1000	1000	CD,R,T	40	27,40,35	MD & equaliser options
Kenwood M-97G	1250	CD,R,V,Tu,2T	85	36,64,38	Dolby Pro Logic
Kenwood M-97MG	1300	CD,R,V,Tu,2T	85	36,64,38	Multi-CD
Marantz 1010	900	CD,R,2T	45	42,77,31	System Link Operation
Marantz 1020	1000	CD,R,2T	45	42,77,31	Motorised Front Panel
Nakamichi S'space 7	1495	CD,R	40	-	Multi-CD, aux & tape input
Onkyo L-909	1200	MM,3L,2T	70	-	Component system, 4ohm rated
Panasonic SC-DH30	250	CD,R,2T	5	-	
Panasonic SC-CH11	300	CD,R,2T	20	-	
Panasonic SC-CH33Z	370	CD,R,2T	30	-	
Panasonic SC-CH170	430	CD,R,T	20	18,25,28	51cm wide, including speakers
Philips FW21	300	CD,R,2T	12	26,30,22	
Philips AS44CD	329	CD,R,2T	20	36,38,29	
Philips AS540CD	379	CD,R,2T	40	36,398,29	
Philips FW41	400	CD,R,2T	30	26,30,25	
Philips AS640CD	429	CD,R,2T	30	36,38,29	Five disc CD
Philips FW91	499	CD,R,DCC	60	26,35,26	DCC mini
Philips FS380	499	CD,R,DCC	100	44,50,30	DCC midi
Philips FW370	900	CD,R,DCC	75	36,50,35	DCC midi
Pioneer N-25	299	CD,R,2T	20	-	Double cassette, three-disc CD
Pioneer N-50W	349	CD,R,2T	50	-	One touch Karaoke, smart timer
Pioneer J-200	399	CD,R,2T,Tu	50	-	Mic mixing, five band equalise
Pioneer N-70W	399	CD,R,2T	70	-	Double auto-reverse cassette,
Pioneer N-70W/M	449	CD,R,2T	70	-	Multi-play version of N-70W

Model	Price	Source	Power	Size	Special
SYSTEMS					
Pioneer N-100W	499	CD,R,2T	100	-	Double auto-reverse cassette,
Pioneer J-300	549	CD,R,2T,Tu	49	-	Single play CD with Smart tune
Pioneer N-100W/M	549	CD,R,2T	100	-	Multi-play version of N-100W
Pioneer J-400M	649	CD,R,2T,Tu	50	-	Six-disc multipley, Dolby Surr
Pioneer Impresso-3	749	CD,R,T	35	-	Separate components, CD with S
Pioneer J-500	779	CD,R,2T,Tu	65	-	Dolby Surround, seven band equ
Pioneer J-500M	829	CD,R,2T,Tu	65	-	Six-disc multipley version of
Pioneer J-V600	879	CD,R,2T,Tu	65	-	Dolby Pro Logic AV 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	
Samsung MAX335	230	CD,R,2T	10	23,30,30	Mini, remote control
Samsung SCM8100	300	CD,R,Tu,2T	20	36,37,26	Midi, remote control
Samsung MAX370	300	CD,R,2T	20	45,32,34	Mini, remote control
Samsung SCM8300	329	CD,R,Tu,2T	20	36,37,30	Midi, equaliser, 5 CD carousel
Samsung SCM9100	430	CD,R,Tu,2T	30	36,47,29	Midi, remote control
Sansui MS6901	420	CD,R,2T	50	18,26,34	
Sanyo SYS 220	300	CD,R,2T	15	36,36,37	
Sanyo MS1	300	CD,R,T	25	22,21,22	
Sanyo DC D10	300	CD,R,2T	15	27,36,32	
Sanyo DC-D15	350	CD,R,2T	15	27,36,32	10 disc CD player
Sanyo DC-D40	400	CD,R,2T	30	27,36,32	10 disc CD player
Sanyo SYS915	430	CD,R,2T	30	36,43,36	Four-disc CD player
Sharp Mini C2400	230	CD,R,2T	10	61,32,31	Remote 3 disc CD changer
Sharp System-S360E Mk 2	230	CD,R,2T	10	27,32,33	Remote control
Sharp System-CD150E	260	CD,R,Tu,2T	10	36,48,36	30 tuner presets
Sharp Mid CDR160E	270	CD,R,2T	10	76,40,38	X-bass boost feature
Sharp System-S370E Mk 2	270	CD,R,2T	25	27,32,33	Five band equaliser
Sharp System CD170E	280	CD,R,Tu,2T	10	36,40,36	Remote control, auto-reverse
Sharp Mini S3460	300	CD,R,2T	30	63,32,30	3 mode programmed equaliser
Sharp Midi CDR260	300	CD,R,2T	25	76,40,38	3 mode programmed equaliser
Sharp System-08E	330	CD,R,T	12	15,19,26	Ultra compact
Sharp Mini C4450	350	CD,R,2T	20	63,32,30	3 disc CD changer
Sharp Micro XL12E	399	CD,R,1T	50	48,23,31	
Sharp Mini S6470	399	CD,R,2T	100	63,32,30	
Sony MHC 450	300	CD,T,Tu,2T	20	22,29,27	Remote, double cass deck
Sony MHC 590	330	CD,T,Tu,2T	-	-	Auto reverse
Sony Compact 190	330	CD,R,Tu,2T	9	35,48,34	
Sony MHC 650	380	CD,T,Tu,3T	35	22,28,26	Full remote
Sony Compact 195	380	CD,R,Tu,2T	9	35,49,41	
Sony Compact 290	400	CD,R,Tu,2T	30	35,48,35	
Sony Compact 295	450	CD,R,Tu,2T	30	35,49,41	Full remote
Sony MHC C50CD	500	CD,T,Tu,3T	30	22,33,32	Five-disc CD
Sony MHC 2900	500	CD,T,Tu,3T	40	22,28,26	Electronic EQ
Sony Compact 490	500	CD,R,Tu,2T	40	35,59,36	Five-disc CD
Sony MHC C70CD	600	CD,T,Tu,3T	40	22,39,31	Five-disc CD
Sony Compact Plus 590	600	CD,R,Tu,2T	60	43,48,39	Five-disc CD, electronic EQ
Sony Compact Plus 695AV	800	CD,T,Tu,2T	60	-	Full size separates, Dolby P-L
Sony MHC4900	800	CD,T,Tu,3T	60	22,41,28	
Sony MHC 5900AV	1000	CD,T,Tu,3T	60	22,41,28	UK sound, Dolby Pro Logic
Sony Compact Plus 795AV	1000	CD,R,Tu,2T	60	43,48,39	Dolby Pro Logic, Dolby S
Sony Compact Plus 995AV	1500	CD,R,Tu,2T	60	43,47,42	Dolby Pro Logic, LaserDisc
Technics SC-CH510	500	CD,R,Tu,2T	35	27,42,34	Mini, including speakers
Technics SC-CH505	600	CD,R,Tu,2T	50	27,42,34	Mini Karaoke, including speake
Technics SC-CH515	650	CD,R,2T	50	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	60	-	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						
Aiwa XT-003	120	FM,M,L	30	N	-	
Aiwa XT-950	150	FM,M	24	N	-	
Arcam Alpha 5	220	FM	16	N	43,8,27	Signal strength meter
Arcam Delta 280	350	FM	20	N	43,7,28	Remote control, IF switching
Audiolab 8000T	750	FM,M,L	39	N	45,8,36	Switchable IF, muting, mono
Aura TU80	350	FM,MW	30	N	43,6,27	Chrome finish + £50
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

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TU9400	£299.90	£229.90
HD7425	£349.90	£249.90

	normal price	CLEARANCE PRICE
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XKS9000*	£699.90	£479.90
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KENWOOD

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Key to tuners
Price - typical retail, to nearest pound.
Bands - FM - VHF, stereo and hi-fi capable, M - Medium wave, low quality, mono, L - Long Wave, low quality, mono, N - Nicam digital TV stereo sound.
Presets - total number of presets on all bands.

RDS - Radio Data System, which provides station IDs and sometimes other data on the FM waveband.
Size - width x height x depth in cm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



Key to turntables.
Price - typical retail, to nearest pound.
Speeds - 33, 45 and/or 78 revolutions per minute.
Type - A - Auto, that is, automatic play initiation, and arm return at end of side.
S - Semi, arm lift or arm return at end of side. M - Manual.

Size - width x height x depth in cm.
Special - Cartridge and/or arm included etc.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

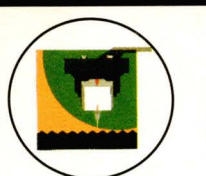
Model	Price	Bands	Presets	RDS	Size	Special
TUNERS						
Grundig T2	170	FM,M,L	59	Y	44,9,30	RDS (PS, RT)
Grundig T4	210	FM,M	59	Y	44,9,30	RDS (PS, CT, RT, PT)
Harman-Kardon TU92000	219	FM,M	70	-	45,8,38	
Harman-Kardon TU94000	299	FM,M	24	-	45,8,33	
Harman-Kardon TU96000	499	FM,M	24	-	45,8,33	
JVC FX362BX	130	FM,M,L	40	N	44,8,30	
JVC FX-572R	200	FM,M,L	40	Y	44,8,30	
JVC FX1010TN	300	FM,M,L	40	N	44,10,30	
Kenwood KT-1060L	120	FM,M,L	30	N	44,8,26	Presets 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 T353	200	FM,M	30	N	9,44,36	System bus rem
Magnum Dynalab FT11	550	FM	-	N	-	Analogue, black finish
Magnum Dynalab FT101	825	FM	-	N	-	Analogue, black finish
Magnum FT101 Etude	1250	FM	-	N	-	Analogue, black finish
Marantz ST-53	170	FM,M,L	59	N	42,9,30	D-bus
Marantz ST-63	249	FM,M,L	59	Y	42,9,30	D-bus
Marantz ST-72L	300	FM,M,L	59	Y	42,10,34	D-bus, IF switch, local switch
McIntosh MR7083	2095	FM,M	16	N	-	Interface to McIntosh remote c
Meridian 504	595	FM	30	N	33,9,34	System handset
Meridian 604	1350	FM	30	N	-	
Michi RHT-10	895	FM	16	N	47,8,34	Remote control
Mission Cyrus FM7	400	FM	29	N	22,8,36	Remote control bus
Musical Fidelity E500	499	FM	20	N	44,12,35	AGC/IF switch
Musical Fidelity FT	899	FM	20	N	49,12,33	Remote control, bandwidth lim
Naim NATO3	499	FM	-	N	21,16,30	
Naim NATO2	954	FM	-	N	21,16,30	
Naim NATO1	1495	FM	-	N	21,16,30	
Onix BWD1	420	FM	-	N	75,23,37	In-house front end
Onkyo T-401	160	FM,MW	40	N	46,8,31	
Onkyo T430RDS	190	FM,MW	30	Y	46,9,30	
Onkyo T-409	230	FM,MW	30	N	28,8,30	Mini component
Onkyo T-450RDS	260	FM,MW	30	Y	46,9,31	
Onkyo T-411RDS	280	FM,MW	30	Y	28,8,30	Mini component
Onkyo R-811RDS	420	FM,MW	30	Y	28,12,33	Mini component, incl timer
Philips FT930	160	FM,M,L	40	Y	44,11,30	
Pioneer F-203RDS	130	FM,M,L	30	Y	42,8,29	RDS at very budget price
Pioneer F-303RDS	180	FM,M	40	Y	42,8,29	RDS with VFD
Pioneer F-502RDS	250	FM,M	40	Y	42,9,34	2 aerial inputs
Quad FM4	434	FM	7	N	33,7,21	
Quad FM66	532	FM	19	N	33,8,26	For use with Quad 66 system
Rotel RT-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, "Autobetcal" select
Sony STS505ES	250	FM,M,L	30	Y	43,9,35	UK optimised sound
Teac T-X4030	120	FM,M	20	N	44,9,28	
Technics ST-6T350L	140	FM,M,L	30	N	43,7,30	
Technics ST-GT550L	190	FM,M,L	39	N	43,7,31	Remote control capable
Technics ST-GT650L	230	FM,M,L	39	Y	43,10,31	Class AA, remote control ready
Yamaha TX-350L	130	FM,M,L	40	N	-	
Yamaha TX-470	160	FM,M	40	N	N	

Model	Price	Type	Speeds	Size	Special
TURNTABLES					
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
Manticore Mantra	890	M	33/45	46,36,12	Turntable
Manticore Magister	3800	M	33/45	57,46,18	Special order only
Michell Mycro	397	M	33/45	46,14,34	
Michell Mycro/arm	539	M	33/45	46,14,34	Includes Rega RB300 arm
Michell Gyrodek	765	M	33/45	53,19,41	Optional outboard PSU
Michell Gyrodek/arm	907	M	33/45	53,19,41	Includes Rega RB300 arm
Moth Alamo	175	M	33/45	-	Comes with RB250 arm
Moth Turntable	199	M	33/45	-	Split-plinth design
Moth Kanoot Mk I Arm	249	M	33/45	-	Inc Rega RB250 arm
Moth Kanoot Mk III Arm	299	M	33/45	-	Inc Rega RB300 arm
NAD 5120	110	S	33/45	-	Includes arm
N'ham Spacedeck	600	M	33/45	-	
N'ham Illusion	600	M	33/45	-	
N'ham HyperSpacedeck	1200	M	33/45	-	
N'ham Graphic	1200	M	33/45	-	
N'ham Mentor	2200	M	33/45	-	75lb alloy or graphite platter
N'ham Mentor Ref	4800	M	33/45	-	150lb platter, graphite top
Origin Live Oasis-S	899	M	33	-	Suspended turntable
Pink Triangle Export GTi	890	M	33/45	46,15,37	Suspended turntable, acrylic p
Pink Triangle Anniv	1695	M	33/45	45,15,37	Two box reference deck
Pink Triangle Anniv/PSU	2050	M	33/45	45,15,37	Battery PSU version of above
Pioneer PL-225	120	S	33/45	42,10,36	Belt drive, fitted cartridge
Pioneer PL-335	150	A	33/45	42,10,36	Belt drive, fitted cartridge
Pro-ject 0.5	145	S	33/45	42,11,3	With Ortofon OM5 cartridge
Pro-ject 1	185	M	33/45	42,11,3	With Ortofon 510 cartridge
Pro-ject 1 (E)	209	S	33/45	42,11,32	Semi-auto version of Pro-ject
Pro-ject 2	249	M	33/45	46,12,3	Metal/glass platter, clamp
Pro-ject 2/Ortofon	275	M	33/45	46,12,3	With Ortofon MC1 cartridge
Pro-ject 6	379	M	33/45	46,17,3	Suspended turntable
Pro-ject 6/Ortofon	435	M	33/45	46,17,3	As above, with Ortofon MC15
Pro-ject 6/Sumiko	699	M	33/45	46,17,3	With Sumiko arm
Rega Planar 78	198	M	78	45,13,37	As Rega Planar 2, 78 only
Rega Planar 2	198	M	33/45	45,13,37	Includes RB250 arm
Rega Planar 3	260	M	33/45	45,13,37	Includes RB300 arm
Rivelin Audio Eclipse	1595	M	33/45	45,13,38	Motor unit
Roksan Radius	495	M	33/45	45,12,35	Motor unit
Roksan Radius/Tabriz	695	M	33/45	45,12,36	As above, with Roksan arm
Roksan TMS	2500	M	33/45	45,12,35	Reference motor unit
Sherwood PS1870	70	S	33/45	-	Budget turntable with arm
SME Model 20	2950	M	33/45/78	42,16,32	Precision turntable
SME Model 20A	4244	M	33/45/78	42,15,32	As above, with SME Series V ar
SME Model 30	10166	M	/78	45,22,35	Flagship turntable
SME Model 30A	11460	M	33/45/78	45,22,35	As above, with SME Series V ar
Sony PSLX150H	90	S	33/45	43,10,36	Player, with MM cartridge
Sony PSLX431B	150	A	33/45	43,11,36	Player, auto rec size select
Systemdek I/920	136	M	33/45	-	Semi-suspended deck
Systemdek IIX/900	230	M	33/45	-	Fully suspended design
Systemdek I/920/Moth	235	M	33/45	-	As above with RB250 arm
Systemdek IIXE/900	330	M	33/45	-	As above with separate PSU
Technics SL-BD20	140	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-BD22	160	S	33/45	43,10,38	Belt drive, includes T4P cartr
Technics SL-1210MkII	450	M	33/45	46,17,36	Quartz DD, no cartridge
Technics SL-1200MkII	450	M	33/45	43,10,38	Quartz DD, includes T4P cartri
Thorens TD-180/AT91	180	S	33/45/78	-	Belt drive, plays 78s
Thorens TD180/S500	200	P	3/45/78	-	Belt drive, plays 78s
Thorens TD-280 IV/UK	200	S	33/45/78	-	Electronic belt drive, AT95E
Thorens TD-166 VI/UK	200	M	33/45	-	Blank armboard, cut to shape.
Thorens TD-166 V/UK	270	M	33/45	-	Inc TP50 manual arm, AT95E
Thorens TD-166 W/UK	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 armboards avai
Thorens TD-3001/UK	770	M	33/45	-	Suspended, Rega arm no cart
Thorens TD-520	900	S	33/45/78	-	Thorens TP90, pitch control, n
Townshend MkIII Rock	799	M	33/45	-	Headshell end arm damping
Voyd The	1570	M	33/45	51,16,42	Original three-motor model
Voyd 0.5	3368	M	33/45	51,16,42	Upgraded standard Voyd
Voyd Reference	6500	M	33/45	51,16,48	Turntable, polycarbonate platt
Well T Record Player	1800	M	33/45	45,18,36	
Well Tempered Classic	2800	M	33/45	48,19,39	The original Well Tempered
Well Tempered Super	3500	M	33/45	49,19,39	Classic with carbon arm
Well Tempered Reference	5500	M	33/45	49,19,39	"Fountainhead" base/carbon arm
Wilson Benesch	1550	M	33/45	-	High-tech turntable

Model	Price	Type	Speeds	Size	Special
TURNTABLES					
Akai AP A950	179	M	33/45	44,12,35	Inc cartridge
Alphason Sonata	835	M	33	-	Motor unit, suspended
Alphason Sonata/Atlas	1235	M	33/45	-	Motor unit inc PSU
Alphason Symphony	1860	M	33/45	-	Motor unit & PSU
Ariston Pro-1200	160	M	33/45	-	Semi-pro disco deck
Audiomeca Romance	1675	M	33/45	-	With Romeo unipivot arm
Audiomeca J1	2500	M	33/45	50,40,2	Top of the range model
Audiomeca J1/SL5	4250	M	33/45	50,40,2	With parallel tracking arm
B&O 7000	555	Auto	33/45	42,8,33	Inc MMC2 cartridge, RIAA pream
Basis Ovation	4950	M	33/45	58,42,14	Lead/brass, record clamped
Basis Debut Gold Std	7250	M	33/45	58,42,19	Belt drive, high mass, four po
Basis Debut Suction	8550	M	33/45	58,42,19	Includes suction platter
DNM Rota 1	2850	M	33/45	59,14,37	Includes arm and cartridge
DNM Rota 2	4000	M	33/45	59,14,37	Includes arm and cartridge
Dual CS3700/3701	85	S	33/45	36,10,36	Mid-sized turntable
Dual CS435	130	F	33/45	44,12,36	Turntable includes cartridge
Dual CS503-2	170	S	33/45	44,13,37	Turntable includes cartridge
Dual 505-4 UK	200	S	33/45	44,15,37	Turntable inc cartridge
Dual CS750-1	350	S	33/45/78	44,14,38	Turntable includes cartridge
Dual Golden II	500	S	33/45/78	44,14,38	Piano finish CS750-1
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

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
Systemdek I/920 136 M 33/45 - Semi-suspended deck

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Key to cartridges.
Price - typical retail, to nearest pound.
Type - MM - moving magnet (output typically 1mV/cm/sec), MC - moving coil (output typically 0.1mV/cm/sec).
Output - in mV/cm/sec
Int. stylus - Y for removable/replaceable styli and N for fixed styli.

Fit - N for normal half inch mountings, T for T4P plug in types.
Weight - in grams.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.



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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 to IV	1395	MC	-	N	N	-	Silver wired
Audio Note to 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-101E	20	MM	-	Y	N	-	
Audio Technica AT-110E	24	MM	-	Y	N	-	
Audio Technica AT-420E	40	MM	-	Y	N	-	
Audio Technica AT-450E	62	MM	-	Y	N	-	
Audio Technica AT-OC3	104	MC	-	N	N	-	
Audio Technica AT-OC5	146	MC	-	N	N	-	
Audio Technica AT-OC30	619	MC	-	N	N	-	Nude micro linear stylus
Audio Technica ART-1	944	MC	-	N	N	-	
Audioquest MC5	250	MC	1.4mV	N	N	-	High output MC, line contact
Audioquest 404II	500	MC	0.5mV	N	N	-	Boron cantilever
Audioquest B200L	800	MC	0.5mV	N	N	-	Boron tube cantilever
Audioquest 7000NSX	1295	MC	0.3mV	N	N	-	Boron tube cantilever
B&O MMC4	1	-	-	-	-	-	MM, elliptical diamond
B&O MMC2	1	-	-	-	-	-	MM, Contact Line stylus
B&O MMC1	1	-	-	-	-	-	MM, Contact Line stylus
Benz-Micro The Glider	600	MC	1mV	N	N	-	Semi-nude design
Benz-Micro H200	700	MC	2mV	N	N	-	
Benz-Micro M090	700	MC	0.9mV	N	N	-	
Benz-Micro L040	700	MC	0.4mV	N	N	-	
Benz-Micro Wood Ref	1100	MC	0.3mV	N	N	-	Bruyere housing, boron
Benz-Micro Ruby Ref	1400	MC	0.3mV	N	N	-	Bruyere housing boron
Denon DL110	70	MC	-	N	N	-	Elliptical stylus
Denon DL160	90	MC	-	N	N	-	
Denon DL103	100	MC	-	N	N	-	
Denon DL304	200	MC	-	N	N	-	Elliptical stylus
Dynavector 50X	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
Goldring Excel	549	MC	0.5mV	N	N	8	van den Hul I stylus
Goldring Excel GS	599	MC	0.5mV	N	N	8	Gyger S, hand built
Grado ZTE+1	27	MM	-	Y	N	-	Moving flux, high output
Grado ZCE+1	37	MM	-	Y	N	-	Moving flux
Grado Z3E+1	47	MM	-	Y	N	-	Moving flux
Grado ZF1+	82	MM	-	Y	N	-	Moving flux
Grado Signature Junior	149	MM	-	Y	N	-	Moving flux
Grado Signature 8M2	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	Deccapod mounting
London Decca Gold Dpd	299	MM	5.0mV	N	N	5	Elliptical stylus, Deccapod
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	Deccapod mounting
London Decca Jubilee	999	MM	5.0mV	N	N	5	0.5 inch mounting

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
Systemdek V920 136 M 33/45 - Semi-suspended deck

Model	Price	Type	Output	Int. stylus	Fit	Weight	Special
CARTRIDGES							
Lyra Lydian	649	MC	-	Y	N	-	
Lyra Clavis Da Capo	995	MC	Low	N	N	-	
Lyra Parnassus	1995	MC	-	Y	N	-	
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 cantilever
N'ham Tracer I	98	MM	-	-	-	-	
N'ham Tracer II	175	MM	-	-	-	-	
N'ham Tracer III	350	MM	-	-	-	-	
N'ham Tracer IV	550	MM	-	-	N	-	
Ortofon VMS2	10	MM	5	Y	N	-	Entry level elliptical cart
Ortofon OM-5E	16	MM	-	Y	N	-	
Ortofon OMP-5E	17	MC	4	Y	T	-	
Ortofon OM Pro S	21	MM	5	Y	N	-	Budget disco cartridge
Ortofon OM10 Super	25	MM	4	Y	N	-	Elliptical stylus
Ortofon OM Night Club S	32	MM	6	Y	N	-	Spherical stylus
Ortofon 510/P	32	MM	3	Y	N	-	
Ortofon OM Night Club E	37	MM	6	Y	N	-	Elliptical stylus
Ortofon Concord Pro S	40	MM	5	Y	N	-	Pro use, inc headshell
Ortofon Concord NC S	55	MM	6	Y	N	-	Pro use, inc headshell
Ortofon 520/P	55	MM	3	Y	N	-	Elliptical stylus
Ortofon OM20 Super	60	MM	4	Y	N	-	
Ortofon MC1 Turbo	60	MC	3.3	Y	N	-	
Ortofon Concord NC E	60	MM	6	Y	N	-	Spherical version of Concord
Ortofon OM30 Super	80	MM	4	Y	N	-	Fine line stylus
Ortofon MC10 Super	85	MC	0.3	N	N	-	
Ortofon 530/P	85	MM	3	Y	T	-	T4P fit
Ortofon MC3 Turbo	110	MC	3.3	N	N	-	
Ortofon MC15 Super II	110	MC	0.35	N	N	-	
Ortofon 540/P	110	MM	3	Y	N	-	
Ortofon MC25E	160	MC	0.5	N	N	-	High output, elliptical stylus
Ortofon MC25FL	210	MC	0.5	N	N	-	High output, Fine Line stylus
Ortofon MC10 Supreme	250	MC	0.5	N	N	-	High output MC
Ortofon MC20 Supreme	350	MC	0.5	N	N	-	High-output elliptical MC
Ortofon MC30 Supreme	450	MC	0.5	N	N	-	High output
Ortofon MC2000II	650	MC	0.12	N	N	-	
Ortofon MC3000II	950	MC	0.12	N	N	-	"Replicant" stylus
Ortofon MC5000	1500	MC	0.12	N	N	-	Sapphire cantilever
Ortofon MC7500	2000	MC	0.13	N	N	-	75th Anniversary model
Pickering TE-15	20	MM	-	Y	N	-	Tracks 1.5gm
Pickering VE-15	25	MM	-	Y	N	-	Tracks 1 - 3gms
Pickering T-E	25	MM	-	Y	T	-	Elliptical
Pickering V15-DJ	28	MM	-	Y	N	-	Disco model
Pickering TL-E	35	MM	-	Y	T	-	
Pickering XV15-350C	40	MM	-	Y	N	-	Conical stylus
Pickering TL-2E	45	MM	-	Y	T	-	
Pickering XV15-625E	50	MM	-	Y	N	-	
Pickering XV15-150-DJ	50	MM	-	Y	N	-	Professional cartridge
Pickering TL-2-S	55	MM	-	Y	N	-	Line contact stylus
Pickering XV15-757S	60	MM	-	Y	N	-	Line contact stylus
Pickering XV15-625DJ	60	MM	-	Y	N	-	Broadcast cartridge
Pickering XV15-1800S	70	MM	-	Y	N	-	Line contact stylus
Pickering TL3S	80	MM	-	Y	T	-	
Pickering XEV-3001E	95	MM	-	Y	N	-	Elliptical stylus
Pickering XLZ-3500	100	MM	-	Y	N	-	
Pickering TL-4-S	100	MM	-	Y	T	-	
Pickering TL-3003	145	MM	-	Y	T	-	
Pickering XLZ-4500	150	MM	-	Y	N	-	Line contact
Pickering TL-4004	175	MM	-	Y	T	-	
Pickering XSV-5000U	200	MM	-	Y	N	-	High output
Pickering XLZ-7500	200	MM	-	Y	N	-	Hybrid, low impedance
Pickering TLZ-7500-S	200	MM	-	Y	T	-	
Rega Bias	34	MM	-	-	N	-	
Rega RB78	34	MM	-	-	N	-	for 78rpm records
Rega Super Bias	52	MM	-	-	N	-	
Rega Elys	74	MM	-	-	N	-	3-point fixing
Roksan Corus Black	130	MM	-	Y	N	-	
Roksan Shiraz	800	MC	-	N	N	-	3-pt generator mount, no glues
Shure ME70B	18	MM	6mV	Y	N	-	Conical stylus
Shure M92E	22	MM	5mV	Y	N	-	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	N	-	DualT4P & normal fit



Key to tonearms
 Price - typical retail to the nearest pound
 Type - F - fixed armtube/headshell, A - interchangeable armtube, H - interchangeable headshell.
 Base type - S - SME fit, L - Linn/Alphason fit, P - proprietary fit.
 Effective length - from pivot point to headshell in millimetres.

Weight range - the range of cartridge masses that the arm can accept in grams.
 Special - characteristics of the arm.

Products highlighted in red have been tested in *Hi-Fi Choice*. Please refer to The Directory for full test results.

	Price	Type	Output	Int. stylus	Fit	Weight	
CARTRIDGES							
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 II 2300	2300	MC	-	N	N	-	
van den Hul Grasshopper II 2300	2300	MC	-	N	N	-	
van den Hul Grasshopper II 2950	2950	MC	-	N	N	-	
van den Hul Grasshopper II 3200	3200	MC	-	N	N	-	
van den Hul Grasshopper II 3200	3200	-	-	N	N	-	
van den Hul Grasshopper II 3500	3500	MC	-	N	N	-	
Virtual Reality Aciore	199	MC	-	N	N	-	
Virtual Reality Etile	299	MC	-	N	N	-	
Virtual Reality Lexe	899	MC	-	N	N	-	

Model	Price	Type	Base type	Effective len	Wt. range	Special
TOEARMS						
Air Tangent Tangent 10B	8000	-	-	-	-	Air-bearing
Air Tan Tangent Ref. Sig.	10000	-	-	-	-	Remote version of above
Alphason Xenon	286	F	L	229	3-20	1-piece titanium armtube
Alphason Xenon MCS	370	F	L	229	3-20	vdH silver wiring
Alphason HR100S	490	F	L	229	3-20	Superior quality bearing
Alphason HR100S MCS	550	F	L	229	3-20	vdH silver, top bearings
Audiomeca SL5	1999	-	-	-	-	Parallel tracking
Decca LI Arm	49	H	L	212	5-12	Damped
Decca LIR Arm	99	H	L	212	5-12	Rewired version of LI
Dynavector 507	1400	-	-	-	-	Biaxial design
Graham 1.5T	2550	-	S	-	-	SME base, unipivot
Helius Orion 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
Mantecore Musician	395	F	L	230	-	
Mantecore Magician1	695	F	L	230	-	Polished armtube finish
Mantecore Magician2	795	F	L	305	-	Polished armtube finish
Moth Arm	95	-	-	-	-	Rebadged Rega RB250
Moth Mk III	146	-	-	-	-	Rebadged Rega RB300
Naim ARO	898	-	-	-	-	Unipivot
N'ham Space	350	-	-	-	-	Optional silver wiring, unipiv
N'ham Mentor	750	-	-	-	-	Silver wiring, unipiv
N'ham Alien	1200	-	-	-	-	Graphite tube, unipivot
Rega RB250	95	F	R	237	-	Scaled down RB300
Rega RB300	139	F	R	237	-	Pivoted arm
Roksan Tabriz	230	F	-	240	-	
Roksan Tabriz Zi	365	F	-	240	-	'Intelligent' counterweight
Roksan Artemiz	725	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-compliant
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 Excalbur	799	F	P	220	3-14	Outrigger headshell damping
Wheaton Tri-Planar 4	2750	-	-	-	-	With terminal box
Wheaton Tri-Planar 4C	3000	-	-	-	-	As above with Cardas cable
Wilson Benesch ACT1	975	-	-	-	-	Carbon-fibre armtube, unipivot
Zeta	469	-	-	-	-	Pivoted
Zeta	555	-	-	-	-	Pivoted, vdH wired

Listings marked in red (as shown below) are covered in the *Hi-Fi Choice* Directory.
 SME Series V 1232 F S 233 0-14 Flagship model



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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.

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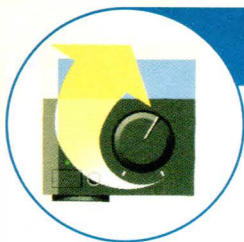
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Amplifiers

The amplifier sits at the heart of the system, processing the outputs from all the various music sources as necessary and then driving the loudspeakers. These two (quite separate) functions are integrated into a single box at the low-to-middle price points; separated pre- and power amplifiers, even separate power supplies, become increasingly common as one moves upmarket.

There is a substantial difference between specialist (sound quality oriented) amplifiers and the consumer electronics style models. The former are bleakly simple, avoiding all unnecessary features to provide the most direct signal path in the interests of sound quality. The latter range

from models with basic tone controls to those with remote control (including volume), surround sound options etc.

We include our measured power output (RMS, 8ohm load, 1 channel driven) – but again, paradoxically, this doesn't necessarily correspond to the loudness capability of the amplifier, which has as much to do with the elegance of the overload characteristics within a given system (valve amplifiers invariably sound more powerful than their rating would suggest).

Apart from output the facilities listing shows how many line (that is inputs besides those for phono cartridges) inputs a product has and

includes tape inputs. The MM and MC blobs indicate which types of cartridge can be accommodated. Integrated, preamp and power amp indicate the type of amplifier and in some instances that a pre/power combination has been tested. In such instances the price given is for both components. The remote control and headphone socket blobs indicate the existence of these facilities.

An increasing number of amplifiers are supplied without RIAA disc stages, or with the phono stage as an optional extra. If you use a turntable, make sure that it has a MM or MC stage to suit your cartridge.

▲▲ Best Buy
▲ Recommended

Amplifiers

Product	£Price	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated	Preamp	Power amp	Remote control	Headphone socket	Issue No.
Albarré AP4/S508	850	A-	A disappointing sound from a pre/power amp that's hamstrung by a variety of technical oversights. Albarré has done better.	46	4	•				•	•	116
▲ Albarré 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	480	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	1100	G	Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7	•	•			•	•	97
Aura VA-100II Evolution	350	G-	Our sample failed to confirm Aura's claims for more power. The big, smooth yet slightly disjointed sound was equally familiar.	74	6	•					•	138
▲ 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-250II	160	A-	Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3	•				•		121
▲ Denon PMA-350II	220	G+	In-depth modifications have brought the original PMA-350 out of its shell with a powerful, up-front and compelling performance.	89	5	•						134
▲ Denon PMA-450	250	G+	Denon's latest integrated amp swept the board with its big, brassy if somewhat extravagant sound.	99	5	•						116
DPA 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
Exposure XX	625	A	Line only integrated with good sense of timing but limited HF extension. Likely to be very system dependent.	43	4					•		121
▲ Harman Kardon HK1400	400	G+	HK's first line-only amplifier exudes a relaxed but confident sound that is only troubled by the most dense of recordings.	52	7					•		129
Harman Kardon HK640	400	G-	A light and breezy-sounding line-only amp with full remote control. Needs more substance to counter its flyaway balance.	78	6						•	138
▲ Jadis JP30/JA30	12204	E	French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4	•				•	•	60
JVC AX-R562	250	A-	More fuss and bluster than detail and dynamics was how one listener concisely described this less than wonderful model	90	5	•					•	121
▲ Kenwood KA-3020SE	230	G+	A lower-powered but more load tolerant version of the KA-3020 with an up-beat yet very comfortable and generous sound.	39	5	•						134
Kenwood KA-4050R	280	A-	Respectable but ultimately uninspiring model whose remote control is its main asset.	85	5	•	•	•			•	121
Kenwood KA-5050R	350	A	A listenable but neither particularly communicative or captivating amplifier that puts features ahead of sound.	103	6	•	•	•			•	129
Kenwood KA-7050R	500	G	The beefiest of Kenwood's MOSFET amplifiers still sounds rather too polished and over-produced for its own good.	130	6	•	•	•			•	140
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 Class A	599	G+	Lashings of rich and compelling music, trading a hint of lushness for stark accuracy. An unexpected find. Phono stage option	55	7							116
Magnum Quartet	329	A-	An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble.	72	5							121
Marantz PM-44SEmkII	200	A-	Two generations on from the PM-40SE, Marantz' latest £200 contender provides a disappointingly grey view of music.	56	5	•						134
Marantz PM-54SE	330	G-	A beefed-up variation of the PM-40SE inside a PM-52SE case. It has a very quick but forward and ultimately tiresome balance.	79	6	•	•	•				138
▲ Marantz PM-52SE	300	G+	The SE premium pays for a degree of fluency that draws you into the music and keeps you there. Rather nice	95	6	•	•	•				121
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/BΩ	Line inputs	MM	MC	Integrated	Preamp	Headphone socket	Remote control	Power socket	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
▲ NVA AP-20	340	G+	Utilitarian amplifier sounds gentle and restrained but is euphonic and utterly engaging. Optional phono stage	35	4	•	•	•	•	•	•	109
Onix OA31	450	A+	What this amplifier lacks in subtlety it 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
▲ Pioneer A-303R	200	G	A remote-controlled amp with a surprisingly fresh and uncomplicated sound that bests much of its audiophile competition	56	5	•	•	•	•	•	•	134
Pioneer A-300X	230	A+	This revamped version of the A-300 was also more confident sounding via CD than MM, yet our panel were still left unmoved.	55	5	•	•	•	•	•	•	116
▲▲ Pioneer A-400	280	VG	Pioneer's design concept snaps into focus with an amp that seems to bubble with musical detail. A budget bench-mark	71	5	•	•	•	•	•	•	92
▲ Pioneer A-400X	300	G+	Now firmly in production and thoroughly retested, this erstwhile Best Buy was tonally unchanged but less compelling on audition.	67	5	•	•	•	•	•	•	138
Pioneer A-503R	300	A-	At its best via MM disc, the dull and claustrophobic sound of this remote-controlled amp is otherwise deeply uninspiring.	75	6	•	•	•	•	•	•	138
▲ QED A270CD/PA	370	G+	Recent updates have bolstered the output of the A270 without adding to its colorations. The PA phono option is a touch expensive	61	5	•	•	•	•	•	•	97
▲ QED C300/P300	630	G	A cost-effective combo, limited in its resolution but less beguiling as a result. Disc stage is sweeter but samey	58	3	•	•	•	•	•	•	85
Quad 34	398	A	Well-built durable preamp, filtering and above average tone controls but was found lacking in sound quality (viz: detail/dynamics)	4	•	•	•	•	•	•	•	44
Quad 66/606	1553	G	Amplifiers with a classic lineage but compromised by an equally dated, soft and undynamic sound.	138	6	•	•	•	•	•	•	124
Rega Elex	359	A	Minimalist amplifier that sounds too forward, hard and unforgiving for its own good. Shows plenty of promise, however.	51	4	•	•	•	•	•	•	116
▲ Rose RV-23	450	G+	Beautifully built British 'hybrid'. You can spend more to get a more transparent sound but it's hard to criticise at the price	3	•	•	•	•	•	•	•	77
▲▲ Rotel RA-930BX	200	VG	A gilded version of the classic RA-930AX with a dark and luxurious sound that's reminiscent of Rotel's heyday.	50	4	•	•	•	•	•	•	134
▲ Rotel RA-970BX	300	G	Sounds lively, fresh and perky with plenty of power to manhandle tricky speakers. Not so clever with complex recordings however.	99	6	•	•	•	•	•	•	138
Rotel RC-980BX/RB-980BX	800	A	Plenty of watts per pound, sound is expansive but lacks a sense of poise, of control and fine detail - a disappointment	143	5	•	•	•	•	•	•	109
Rotel RA-980BX	425	A	This integrated version of the 980BX pre/power is certainly very powerful but also lacks poise and subtlety	139	5	•	•	•	•	•	•	129
▲▲ Sansui AUX-417R	280	G+	Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	•	121
Sherwood AI-2210	80	P	Lightweight in all respects this is better than you'd find on a midi and at least its reasonably painless.	47	4	•	•	•	•	•	•	121
Sonic Frontiers SFC-1	1500	G+	Smooth, sophisticated Canadian valve amp with a decent direct input and more features than average	54	6	•	•	•	•	•	•	126
Sugden A21a	469	G	The modern-day relative of Sugden's original Class A amp and one that offers a smooth, easy-going sound.	25								92
Technics SU-A800mk2	350	A	A quick audition might convince you the '800mk2 is something special, but longer term listening shows it's little but bluff.	79	5	•	•	•	•	•	•	134
▲ Technics SU-A900mk2	400	G+	A Jeckyl and Hyde amplifier with a dismal-sounding phono stage but delightfully transparent and engaging CD input.	117	5	•	•	•	•	•	•	138
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.

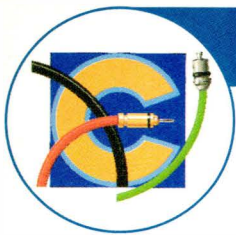
Subwoofer outputs are of the phono socket variety for active subs, and AM/FM tuner denotes if the unit is effectively a receiver.

▲▲ Best Buy
▲ Recommended

AV amplifiers

Product	£Price	Comments	Surround output W/BΩ	Surround output W/BΩ	Video inputs	Audio inputs	Subwoofer outputs	AM/FM tuner	Issue No.			
Denon AVC-3530	999	VG	A true heavyweight with a richly detailed sound and flexible features to match	142	141	46	10	9	5	5	•	125
Harman Kardon AVR30	999	G+	Limited surround options are offset by a very secure sound with excellent control over effects.	74	75	30	7	10	6	0	•	125
Kenwood KA-V8500	699	G-	Can sound a tad forced and immediate but is remarkably well-equipped with digital soundfield options.	62	63	37	10	11	6	5	•	125
Marantz PM-700AV	450	A+	Sounds just great through front and centre channels but surround is very weak.	69	52	51	3	7	6	3	•	125
Philips FR940	450	A-	Perhaps as a result of the mismatch between front/centre channels, the FR940 proved a great disappointment on dem.	180	24	24	6	8	4	0	•	125
Pioneer VSA-D802S	600	A-	The disappointingly grey sound lacks attack and confidence, undermining the tension of movie soundtracks.	53	55	32	9	9	5	3	•	125
Yamaha DSP-A2070	1100	G+	The ultimate in AV flexibility with full manual control over ever conceivable soundfield.	101	99	35	24	10	6	6	•	125

Cables



Cables are not accessories but an integral part of your system. You can make do without accessories but no conventional system will function without cables. Inevitably some cables are greater than others. The best cable for your system will only be found through trial and error, but hopefully by combining our recommendations with those of a dealer you will end up with something that suits both your pocket and your system. Generally speaking budget to spend about ten per cent of the total system cost on cables.

Analogue interconnects are the leads that

connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one metre terminated pair. Symmetrical indicates where a twisted pair of conductors are used.

Coaxial means that there is a central 'hot' conductor and a shield that carries the negative signal. Stranded cables have multiple strands and solid core use individually insulated strand(s). Copper and silver indicates whether these metals are used as conductors.

Digital interconnects connect CD transports to

DACs, and are traditionally coaxial with a 75ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass and the latter in coaxial or alternative configurations. The prices shown are for a terminated linear metre

Speaker cables are used between the amplifier and speaker. Our prices are for a terminated 5metre pair. Resistance and capacitance are indicated as low (L), medium (M) or high (H). Neither high resistance nor high capacitance cables are suitable for long runs.

▲▲ **Best Buy**
▲ **Recommended**

Analogue interconnects

Product	Price	Grade	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Silver	Issue No.
Audio Note AN-A	29.50	A-	A well-rounded and cuddly sound from a high-ish resistance interconnect. Lacks a sense of scale and dynamics		•		•		•	108
Audioquest Ruby Hyperlitz	70	A+	A crisp, fast and articulate-sounding cable if one that's a little too pointed for our listeners		•			•	•	108
▲ Audioquest Lapis Hyperlitz	329	E	An expensive cable that justifies its tag with a beautifully poised sound - natural, relaxed and very compatible.		•			•	•	108
Audio Technica AT620	28	A	Plenty of cable for the money but its performance is distinctly lightweight, lacking depth and subtlety			•	•		•	108
Chord Chameleon	59	A+	An unpredictable cable with an 'anomalous treble' that can sound harsh one moment and oddly recessed the next!			•	•		•	108
▲ Chord Solid	115	VG	What looks like a military RF cable actually provides a slightly forward but incisive and intimately detailed performance			•		•	•	108
▲ Cogan-Hall Intermezzo Ref	185	E	A user-hostile cable with a tight, convincing bass allied to a very relaxed and involving mid/treble.					•	•	108
Cogan Hall Intermezzo E-M	320	G+	This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser		•			•	•	108
▲ DNM Interconnect	40	VG	Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners		•			•	•	108
Goldring 'Studio Quality'	20	A-	A bog-standard OFC coaxial cable that might otherwise be given away with a new amp or CD player. Cheap but nothing special.		•	•	•		•	108
▲ Isoda Electric HA-08-PSR	199	G+	This odd-ball cables utilises a mix of copper, brass and aluminium strands to achieve a very distinct sound		•		•		•	108
▲ Madrigal HPC	215	VG	A very unusual cable design with a business-like approach to music-making that barely conceals its underlying 'fizz'.		•			•	•	108
Magnan Type Vi	595	A+	With a series resistance some 500-1000 times higher than average, the furry sound of the Type Vi will alter from system to system.			•	•		•	108
▲ Monster Interlink 500	60	G+	Plenty of hype to keep the marketing bandwagon rolling plus a lively and lucid balance to cheer up the enthusiast		•		•		•	108
▲ Moth Ley Line Black	100	G+	The cheapest of Moth's Ley Line series uses just two twisted conductors to achieve a very solid and confident sound.		•			•	•	108
Moth Ley Line Grey	200	G+	The four twisted conductors of this cable actually mark a downturn in audio quality		•			•	•	108
▲ Panasonic RP-CA910	50	G	This conventional coax employs plenty of hi-tech materials which encourage an even-handed balance. A good upgrade.			•	•		•	108
▲ Silver Sounds 12/2 and 12/3	99/150	VG	Both these cables share a similarly open, transparent and dynamic sound though the latter is arguably the better integrated		•		•		•	108
Sonic Link Yellow	60	A	An interesting non-copper cable with an up-front sounded described as 'heavy-handed and pushy'.			•		•		108
▲ Sonic Link Violet	99	G+	Another nickel-based cable but with a very much better-balanced sound than Sonic Link Yellow		•		•		•	108
Straight Wire Laser Link	50	A+	Thanks to its high parallel capacitance this interconnect helps remove ultrasonic noise. Unfortunately it still sounds very odd!				•		•	108
Straight Wire LSI-Encore	90	A+	A solid-sounding cable with a strong mid and bass but a disappointingly sat-upon treble		•		•		•	108
▲ Tara Labs Prism	36	G	6N-purity copper, aero-grade insulation and spaced solid-core conductors all add-up to a slightly bright but frisky sound		•			•	•	108
▲ Tara Labs Quantum CD	63	G+	Praised by our panel for its lack of obvious vices, Quantum CD encourages a sweet and positive sound.		•			•	•	108
Tara Labs Quantum II	99	G	Bass power and extension is the key to the sound of this unusual and hi-tech cable		•			•	•	108
▲ van den Hul The Source	70	G+	Accurately reflects the life of the music without detail forcibly from the speakers			•	•		•	108
van den Hul MC D-102mkIII S	80	A+	A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble		•		•		•	108

Connections



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Digital interconnects

Product	£Price	Comments	Type	Plastic	Glass	Coaxial	Non-coaxial	75 Ω	Issue No.
▲▲ 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 impassive but there's no avoiding its exceptionally detailed sound	Electrical				•	•	108
DPA Opti-link	20	P Very similar to Bandridge AL560 with an equally naff sound	Optical	•					108
Kimber PSB Digilink	24	A- An analogue interconnect inappropriately pressed into digital service. A visible deterioration in the digital signal results.	Electrical					•	108
Kimber KC-1 Digilink	52	A This cable adopts a woven construction with the addition of a conductive screen. Music lacks detail and spirit.	Electrical					•	108
Kimber KC-AG Digilink	222	A- An asymmetric cable using silver conductors that deviates from the 75ohm standard. Not ideal for digital applications.	Electrical					•	108
▲ Kimber Opti-Link	70	G Hardly cheap for what appears to be a bog-standard PMMA fibre, yet it sounds a little brighter and livelier than most.	Optical	•					108
▲ Monster Cable Datalink 100	45	G+ A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible.	Electrical				•	•	108
▲ Monster Cable Interlink LS100	45	G Well constructed stepped-index fibre with polished ends and rugged connectors. Slightly lean, fuzzy but engaging performance	Optical	•					108
Moth Leyline Datalink	140	A- A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive.	Electrical				•	•	108
▲▲ QED Digiflex	19	VG A top performance, low-loss 75ohm coax with a very open, almost liquid quality that allows its music to ease naturally across.	Electrical				•	•	108
Sonic Link Brown Digital	35	A- A solid-core, twisted-pair interconnect that deviates from the 75ohm standard and provides an equally unbalanced sound	Electrical					•	108
Straight Wire Silver link	60	G+ A genuine attempt to get things right with a silver-plated, multi-strand coax. Yet it still sounds too dry and mechanical	Electrical				•	•	108
▲ van den Hul MC Videolink 75	30	VG An AV-cum-digital cable that comes very close to besting QED's Digiflex. Still some emphasis of vocal sibilants, however	Electrical				•	•	108

Speaker cables

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper	Silver	Issue No.
▲ Audio Note AN-B	165	G+ A very high capacitance Litz-style cable whose sound may well act as a taming influence in many systems	M	H			•	•	109
Audio Note AN-D	100	A Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather gritty and forward	L	L	•			•	109
▲ Audio Note AN-SP	1270	VG Some 15 individually-insulated silver strands go to make up this very civilised but exceptionally detailed-sounding cable	H	L			•	•	109
▲ Audioquest F-14	44.50	A+ Ideal for laying flat under carpets, F-14 encourages a slightly warm and vibrant sound	M	L			•	•	109
Audioquest Type 4	75	A+ Four 18-gauge OFHC copper conductors wound in a Litz-fashion increases capacitance but restrain the cable's 'bite'	M	H			•	•	109
Audioquest Midnight Hyperlitz	260	G Very similar to Type 4 but with a delicate smoothness that contrasts with the brighter sound of cheap cables	L	H			•	•	109
▲ Bandridge LC7259 & LC7401	20/30	A Two very traditional figure-of-eight cables. The thinner version (LC7259) sounds lighter and coarser than LC7401	L	L	•			•	109
Bandridge LC8258 & LC8408	30/50	A- Two versions of the Silverflex series that, sadly, encourage very little sense of poise or decorum in their music	L	L	•			•	109
▲ Cogan-Hall Intermezzo Full-Range	465	VG Extra care must be taken to prevent shorting this user-hostile cable. Nevertheless it sounds superb!	L	L			•	•	109
▲ DPA IS19	275	G+ Shares the clear, neutral and transparent sound of the older 8S without the tremendous clarity of Gortex Black-16	L	L			•	•	109
▲▲ DNM Rainbow	84	A+ The high impedance of this simple ribbon cable has an influence on the treble response of some speakers. Lacks 'oomph'	H	L			•	•	109
Heybrook Heywire	66	A This well-meaning facsimile of earlier ribbon-style cables ends up sounding lumpy and uneven	H	L			•	•	109
Isoda Electric HA-20	400	A+ This unorthodox cable employs a combination of copper, brass and aluminium strands. It sounds 'oddly impure'!	M	L	•			•	109
▲▲ Mission Stranded	20	G+ This Swedish-made cable proved a real hit with our listeners - a slick performer and Best Buy upgrade	L	M	•			•	109
Monitor PC KC27/KC34	40/60	A Two heavyweight multi-strand cables with a thick and chesty (10027) or light and wispy (10034) balance. Take your pick	L	L	•			•	109
Monster Powerline 3 Plus	75	A- The archetypal 'old-style Monster Cable' that labours under a soggy bass and untidy treble	L	M	•			•	109
Naim NAC A5	44	A- Described as a 'dinosaur of a cable' by our listening panel, this stiff rod of wire has little application outside of a Naim system	L	L	•			•	109
QED Bi-wire 79-Strand	35	A Reminiscent of curtain track, this bi-wire version of 79-strand is unfortunately saddled with a 'loud, hard and untidy' balance	L	L	•			•	109
▲ Silver Sounds 12/2	300	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.

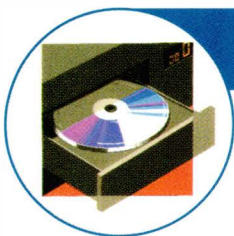
▲▲ **Best Buy**
▲ **Recommended**

Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Auto calibration Bias adjust	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 converter chip used in each player, 16, 18 and 20-bit are multi-bit types, all the others are bitstream variants. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound, but it is an important one. Remote control is not yet universal, and we have included a tick box, more to show which machines don't have

one than which do. The existence of electrical and/or optical digital outputs is important for future upgrading with an outboard DAC, as a rule electrical outputs are the most desirable. Phase inversion in the digital domain is rare on one box players but can make quite a big difference if you've got golden ears. Headphone sockets are useful but beware of those without volume controls. Track entry keypads are those with calculator style buttons which makes track access much quicker.

▲▲ Best Buy
▲ Recommended

CD players

Product	Price	Grade	Comments	DAC type	Electrical digital output	Optical digital output	Remote control	Headphone socket	Variable output	Track entry keypad	Issue No.
Aiwa XC-750	200	A	A refined version of the XC-700, sadly it has lost the magic of the original	PDM Bitstrm	•	•	•	•	•	•	119
▲ AMC CD6	349	G+	Based on the same 1-Bit circuit as Rotel's RCD-965BX but with a raunchier, beefier but less transparent sound.	PDM Bitstrm	•	•	•	•	•	•	124
Arcam Alpha One	300	A+	The first UK-built player under £300 is hampered by a tidy but rather grey and uninspiring sound.	PWM bitstrm	•	•	•	•	•	•	137
Arcam Delta 270	800	G+	The dry but tightly-focused and supremely detailed sound of this player will either beguile or aggravate, depending on taste!	Hybrid	•	•	•	•	•	•	124
Aura CD-50	400	G-	Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•	•	•	•	•	119
AVI S2000MC	999	G+	A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•	•	•	•	•	119
▲ Denon DCD-615	180	G	Builds upon the smooth and composed sound of the DCD-595 while offering extra widgets at no extra cost.	18-bit	•	•	•	•	•	•	139
▲ Denon DCD-825	220	G	Despite extensive revisions, this latest player still sounds like a typical '18-bit Denon', which is no bad thing!	18-bit	•	•	•	•	•	•	137
Denon DCD-1290	330	G-	Looks the business but sound is a real five-minute wonder. Its compelling fizz lasts about as long as a firework.	18-bit	•	•	•	•	•	•	107
Dual CD1001RC	180	A-	This Yamaha-based CD player is compromised by a number of technical flaws and a fundamental lack of bass.	PDM Bitstrm	•	•	•	•	•	•	139
▲ Goodmans Delta 700	110	A+	A 16-bit alternative to the CD650II that furnishes a colourful and animated sound	16-bit	•	•	•	•	•	•	128
Grundig Fine Arts CD2	190	A-	A stylish-looking player with a disappointingly vague approach to music-making	SAA7350	•	•	•	•	•	•	128
▲ Harman Kardon HK7725	800	VG	This flagship implementation of RLS sounds impressively bold and dynamic - a genuine rock 'n roller!	18-bit RLS	•	•	•	•	•	•	124
▲ Harman Kardon TL8600	700	G+	A refined and more flexible version of the TL8500 multiplayer with a significantly more expressive sound	MASH/PWM	•	•	•	•	•	•	132
JVC XL-V274	160	A	This appears to be a re-badged version of JVC's XL-V264, retaining an over-heavy bass and generally gaudy sound.	PEM Bitstrm	•	•	•	•	•	•	139
JVC XL-Z1050	500	A	Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM Bitstrm	•	•	•	•	•	•	119
▲ Kenwood DP-3060	200	G+	Based on the same filter/DAC as Marantz' CD-53 but with a more transparent, sober and highly insightful sound.	NPC bitstrm	•	•	•	•	•	•	139
▲ Linn Karik	1497	VG	Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•	•	•	•	•	119
▲ Marantz CD-53	200	G	Looks identical to the CD-63 but component costs are cut inside, exposing a slightly ragged but enthusiastic performer.	NPC bitstrm	•	•	•	•	•	•	139
▲ Marantz CD-63	250	VG	New technology has enabled Marantz to steal a march on its old CD-52 series and, once again, regain the upper hand.	NPC bitstrm	•	•	•	•	•	•	137
▲ Marantz CD-52IISE	300	G	A new mains transformer plus the full complement of internal mods has recaptured the frothy if startling sound of the original '52	PDM Bitstrm	•	•	•	•	•	•	119
Marantz CD-72SE	600	G+	A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	•	112
NAD 501	180	G-	A thoroughly typical frill-free player but with a slightly too cautious, even restrained musical outlook.	SAA7323	•	•	•	•	•	•	139
▲ NAD 502	220	G	This updated version of the 5425 has traded the spontaneity of its forebear for a more precise but mechanical style of music	MASH/PWM	•	•	•	•	•	•	119
Nakamichi CD-4	380	A-	This looks new enough but sounds little better than the older CD Player 4 upon which it is firmly based.	18-bit	•	•	•	•	•	•	124
▲ Nakamichi MB-4s	300	G	Entry-level MusicBank player that sounds like it's come from a studio control room: plenty of dynamics and detail but little stereo depth	16-bit	•	•	•	•	•	•	132
Onkyo DX-C110	350	G-	A big and beefy 6-disc carousel that strides confidently through rock and pussyfoots around gentle ballads	Bitstream	•	•	•	•	•	•	132
▲ Philips CD732	140	A+	A cross between Philips CD690 and CD920 is no more technically accomplished but encourages a very lively and entertaining sound	SAA7341	•	•	•	•	•	•	128
Philips CD740	170	A	One of several Philips players using a hybrid of DAC technologies. Still sounds insufferably boring, however.	Hybrid	•	•	•	•	•	•	139
Philips CD750	200	A+	The costliest player in Philips range and the last to use its BS DAC lacks a sense of integration and stereo focus.	PDM Bitstrm	•	•	•	•	•	•	137
Pioneer PD-S503	200	A	The cheapest Legato Link player yet but another that sounds unpredictable and generally hard work.	PFM Bitstrm	•	•	•	•	•	•	139
▲ Pioneer PD-S703	300	G+	Legato Link and bitstream are combined into a cheaper IC though the player sounds as manipulative and intriguing as ever.	PFM bitstrm	•	•	•	•	•	•	137
▲ Pioneer PD-S901	500	G+	The very refined but confident, crisp and powerful sound of the '901 snatches Pioneer's LLC concept from the jaws of defeat	PFM Bitstrm	•	•	•	•	•	•	119
▲ Quad 67	790	E	Deceptively sleek in appearance but with a powerful, fluid and captivating sound reminiscent of Meridian's 206.	Crystal BS	•	•	•	•	•	•	124
Rotel RCD-940BX	230	A-	A sea-change in transport and DAC technology lies behind the most untidy-sounding and irritating player to emerge from Rotel.	Hybrid	•	•	•	•	•	•	137
▲ Rotel RCD-945AX	230	G	Based on the same CD-player-on-a-chip as Philips CD690 but with improved execution and build.	SAA7341	•	•	•	•	•	•	124
▲ Rotel RCD-965BX	300	E	An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	PDM Bitstrm	•	•	•	•	•	•	100
Sansui CD-X317	250	A	Not in the same class as older CD-X311 mkII. 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 technical 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 forgiving performance the Digit is almost embarrassingly cheap	PDM Bitstrm	•	•	•	113
▲ QED Digit Reference	425	G+ No great advance over the basic QED Digit yet its enthusiastic sound is more than competitive at the price.	Bit Stream	•	•	•	136
Select Systems Dacula	400	G The overly warm and heavy bass of this DAC is quite atypical of the Crystal Bit Stream DAC.	Crystal	•	•	•	127
▲ Sugden SDA-1	749	G+ A pleasant surprise from the fuddy-duddies of audio, judging by its 'masses of high resolution detail and tremendous dynamics'	TDA1541	•	•	•	113
Thule Audio DAC-200	799	A A good first effort from Thule even though its fizzy and over-eager sound could do with house-training.	DAC7	•	•	•	136
Woodside DAC1	909	G Fine but slightly dated and costly package in performance terms - but flexible, musical and t well built	16-bit	•	•	•	87
▲ Woodside DAC2	509	G+ Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•	•	•	101

Transport/DAC combos

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Variable output	Headphone socket	Track entry keypad	Issue No.
▲▲ Arcam Delta 250/Black Box 50	1200	VG A very sophisticated combination that sounds silky-smooth without appearing soft or sugar-coated. A bargain two-box player.	Hybrid	•	•	•	•	•	133
Audio Alchemy DDS/DTI/XDP/P52	2047	A+ A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	120
▲ Cyrus Discmaster/Dacmaster	1900	G+ A powerful-sounding and perhaps slightly heavy-handed combination that cuts right to the heart of its music.	20-bit	•	•	•	•	•	133
DPA Digital T-1/PDM2mkII	3245	G An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	120
DPA Digital T1/PDM 256	3890	G A highly advanced duet with adjustable dither facility. Sadly its different settings only usher-in different compromises.	Bit Stream	•	•	•	•	•	133
▲ EAD T-1000/DSP-1000	2195	VG A two-box player based on Pioneer's Stable Platter CD transport. Its music always sounds fast, furious and fascinating.	20-bit	•	•	•	•	•	120
Linn Karik/Numerik	2495	G+ Partnering Linn's Numerik DAC with its Karik CD player (as transport) provides a dry, dynamic but also slightly dirty sound.	20-bit	•	•	•	•	•	120
Meridian 200/263	1390	G Now updated with Crystal Bit Stream technology, this popular duet has unfortunately lost much of the charm and poise of the original.	Bit Stream	•	•	•	•	•	120
Meridian 500/563	1670	A+ Combined with its own 500 transport, the recommended 563 sounds disappointingly thin, brash and uncomfortable.	Crystal	•	•	•	•	•	133
▲ Meridian 602/606	3100	VG Meridian's top-of-the-range two-box player looks and sounds both distinctive and elegant, the perfect partner for a cultured system!	DAC7	•	•	•	•	•	120
▲ Monarchy Audio DT-40A/M-33	3090	VG An intriguing combination that provides a beefy and enthusiastic performance via its balanced AES/EBU connection.	20-bit	•	•	•	•	•	133
Proceed PDT3/PDP3	5214	G+ The third in a series of unusual transport/DAC combinations and a pairing that retains a powerful, confident and rugged sound	20-bit	•	•	•	•	•	120
▲ PS Audio Lambda/Ultralink Two	4900	VG In direct contrast with its appearance, this duet positively sparkles with colour and resonant detail.	20-bit	•	•	•	•	•	133
▲▲ Teac P-700/D-700	1500	VG They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•	•	•	120
Teac P-2s/D-2	6000	A- Teac's VRDS statement looks a million dollars but sounds rather thin and uninviting. A great disappointment.	18-bit	•	•	•	•	•	133
Theta Data Basic/Cobalt 307	2696	G+ A cautious and slightly over-refined combination that fails to make the best of either component.	Hybrid	•	•	•	•	•	133



DAT players

DAT, or digital audio tape, has been on the market for quite some time now but has never really 'made it' as a consumer medium, probably due to the fact that very little prerecorded software has been made available. In the last year or so it has begun to carve itself a niche at the top end of the market replacing reel

to reel tape recorders as the audiophile's tape based medium.

The DAT standard specifies a 48kHz sampling rate, which is higher than CD, so direct copying in the digital domain is only possible on those machines with dual sampling frequencies, ie 48kHz and 44.1kHz. Some machines also record at 32kHz

to give a longer recording time for a given length of tape, this is shown in the LP mode column.

The optical and electrical in/outputs in the column headings are for digital signals, analogue in/outputs are universal. The AES/EBU and S/PDIF socketry is for connection to professional components such as mixing desks.

DAT players

Product	£Price	Comments	Remote control	Optical in/out	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



Loudspeakers

▲▲ **Best Buy**
▲ **Recommended**

Last item in the hi-fi chain, to some extent the loudspeaker is merely the slave of what has gone before, capable only of reproducing a signal as good as it is fed. Nevertheless the distortions (colorations and stereo effects) introduced by loudspeakers (and rooms) tend to be more immediately obvious than those anywhere else in the chain, so careful choosing according to taste is very important.

The average loudspeaker consists of a smallish

enclosure, much of which may have begun life as part of a tree, plus a couple of drive units hidden behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. Variations on the above formula are specifically identified in the entries. The designer's primary task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the

bass extension (how low does it go), shown as 'bass from', for the given box size. After that such subtleties as coloration (or lack of it) and dispersion come into the equation.

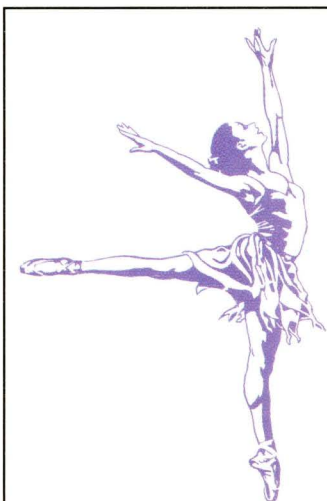
Careful placement of the loudspeakers within the room is as important as the initial choice of model. See siting columns for guidance. For good stereo they need to be more or less the same distance from nearby walls. Models not ticked as 'floorstanding' will require rigid stands.

Loudspeakers

Product	£Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site close to wall	Site in free space	Floorstanding	Issue No.
▲ Acoustic Energy Aegis 1	452	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		•	•	84
▲ 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		•		91
ATC SCM20	1461	G+ Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82		•	•	86
▲ Audio Note AN-E/B	1300	G+ Lovely coherence, great midband dynamics and transparency, extended bass and high sensitivity — pity it's so darn ugly!	80x36x28	20	91		•		106
▲ Audio Note AN-J/B	799	G+ Light damping and local unevenness adds some coloration, but doesn't spoil the very lively, dynamic and coherent sound	58.5x33x24.5	25	90		•		110
Aura SP-50	400	A Two very tasty drivers rather outclass the cabinetwork; a capable but slightly dull compact stand mount	40x22x25	30	87		•		126
▲ B&W 2001	120	A Cunningly concealing its (very real) limitations, this is just about the smoothest and best balanced miniature around	29x18x21	48	87		•		118
B&W 2003	190	A- Flashy and assertive ghetto blaster styling is not reflected in the rather bland, if well balanced sound	43x21x25	30	88		•		122
▲ B&W DM600i	180	A+ Smart cosmetics and a very even balance overall, but dynamically rather bland; amplifier current demands are quite high	35x20.5x25	25	88		•		135

Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site close to wall	Site in free space	Floorstanding	Issue No.
B&W 610i	250	A	Large bookshelf model has fine bass extension and a smooth, well balanced but slightly heavy and laid back sound	49x23.5x31	28	89	•	•	141
▲ B&W DM620i	399	A+	Good material value, this compact floorstander has a beautifully voiced midband, less happy bass tuning	77x24x32	40	89	•	•	126
▲ B&W Matrix 801	3500	G+	Lacks the transparency of the best panels, and the drama of the best dynamics, but is something of an acoustic tour de force	77/99x56x43	<20	86	•	•	81
▲ B&W Matrix 805	845	G	Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	•	98
▲ Bose 305	430	G-	A bit of an oddball, fine dynamic liveliness and a good room match more than make up for the strange stereo imaging and treble	28x45x23	40	88	•	•	78
▲ Bose 401	500	A	Cheaply built but distinctively styled semi-omni floorstander suffers from heavy midbass but still sounds lively and open	78.5x30x28.5	28	89	•	•	110
▲ Bose 901 MK6	1650	A	The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	•	86
▲ Boston HD5	139	A	Tiny and prettily shaped miniature has an attractive lack of boxiness, but is a little short of drama and dynamic drive	25x16x18.5	30	86	•	•	110
▲ Boston Acoustics SW10	449	G-	Clever powered subwoofer system integrates well and improves system loudness and power handling	50x28.5x42	35	NA	•	•	126
▲ Cabasse Bisquine	600	G+	Classy French large bookshelf speaker has great coherence and dynamic grip, but a rather mid-forward overall character	48x26x30.5	30	91	•	•	110
▲ Cabasse Skiff	1500	G+	Large floorstanding three-way gives great sensitivity and bass extension with fine dynamic grip	100x30x36	25	92	•	•	122
▲ Canon S-30	180	A+	Clever and unusual moulded design has attractive lively coherence, along with 'wide imaging stereo' effect	27x22.5x23.5	50	88	•	•	114
▲ Canon S-50	250	A+	Only a small cone miniature at heart, the fascinating styling and extended sweet spot feature make it utterly original.	30x24(diam)	48	84	•	•	102
▲ Castle Chester	650	G+	A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	•	•	98
▲ Castle Durham 900	280	G	Lovely veneer and lots of engineering create a very upfront, coherent and exciting sound — maybe too much so for budget systems	40x21.5x24	45	89	•	•	135
▲ Castle Howard	999	G+	Absolutely 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 hiway passive subwoofer lacks serious bass extension; for high sensitivity speakers only	52x19x34	45	88	•	•	128
▲ Celestion 15	389	G	Big box and bang for your bucks, short on subtlety and control, but long on both enthusiasm and perceived vinyl wood grain	103x20.5x25.5	28	90	•	•	114
▲ Celestion 9	269	A	Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	•	102
▲ Celestion SL12Si	629	A	Elements of fine sound quality, but this 'grown up' SL6 variation has a lumpy response alongside its improved power handling	53x20x27	50	85	•	•	66
▲ Celestion SL600Si	820	G	Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52	82	•	•	68
▲ Celestion SL6Si	429	A+	This stereotype luxury compact can sound a bit dull and congested, but really opens up on Slate Audio stands; favours CD	37.5x20x25	30	86	•	•	94
▲ Celestion 300	1099	G	Splendid bass extension and fine panel-like openness and transparency, but dynamics and timing are suspect, balance very laid back.	100x21x31	<20	86	•	•	118
▲ Dali 102	230	A	Attractive bookshelf model has fine midband focus and bass extension, but treble's a bit restrained and bass a bit detached	37x21x25	30	86	•	•	114
▲ Dawn Chorus FS	698	G	Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	•	•	11
▲ Dynaudio Contour 1.3	1199	G	Heavyweight luxury finish bookshelf model has good scale and weight but is pricey and a bit ponderous	38x20.5x29	28	86	•	•	122
▲ Epos ES11	395	G+	Integral baffle/driver to give a remarkable combination of low coloration, transparency and speed; bass is a bit shy	37.5x20x25	45	86	•	•	94
▲ Epos ES14	595	G+	Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25	85	•	•	98
▲ Faraday FS1	225	A+	Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45	86	•	•	114
▲ Faraday FS5	575	G	Pricey and ugly, but with its own sonic charm, thanks to substantial influence of the concrete enclosure has upon the sound	46x27x26	28	90	•	•	102
▲ Faraday Siren	375	A-	Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48	87	•	•	94
▲ GLL Maxim	119	A	Budget miniature offers well balanced strengths and few weaknesses at a very realistic price; a bit feeble	26x17x20	30	85	•	•	122
▲ GLL Mezzo	160	A	Good value budget compact has splendid midband but foxy extremes; dull treble could suit budget system well	37x21.5x23.5	40	89	•	•	141
▲ Harbeth LS3/5A	539	A	Still a classic miniature, though not to every taste, and none the better for the recent update under our listening conditions	30.5x19x16	60	81	•	•	66
▲ Harbeth HL-P3	479	G	Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smearing sub-miniature	31x19x17	23	82	•	•	118
▲ Harman-Kardon LS 0200	150	A	Laid back to a fault but entertaining nonetheless, and a big box for the price	38x21x29	30	86	•	•	130
▲ Harman-Kardon LS 0500	300	P	A mug's eye-ful — huge box for the price with loads of bass but very little presence: unacceptably unbalanced, or high infidelity	105x21x25	22	91	•	•	135
▲ Heybrook Prima	130	A+	Neat and discreet miniature delivers fine coherence, pace and timing, though balance is a trifle forward and bass a bit light	29x19.5x18	50	86	•	•	110
▲ Heybrook Quartet	555	G	Beautifully presented and built large bookshelf model with good sensitivity and a lively, forward sound	41x24x23	48	89	•	•	122
▲ Heybrook Sextet	1099	G+	Engagingly coherent and a highly analytical, partly due to distinct and t always comfortable upper-mid forwardness	96x27x20	25	85	•	•	102
▲ Heybrook Solo	189	A+	Discreetly styled, sounds a little untidy in both bass and treble but handles complex rhythmic material much better than most	36x23x22	28	87	•	•	90
▲ Heybrook Trio	359	G	Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	•	118



Qudos[™], The Perfect Balance

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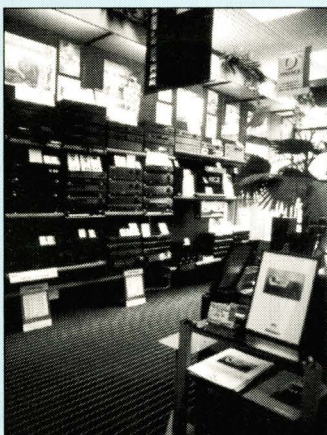


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Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Bass from (Hz)	Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
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	86	•	•	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
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; high price partly justified by near-indestructible Pro build	23x15.5x14	50	89	•	•	90
JBL L1	479 G	Good power handling, decent transparency and deep but current hungry bass from a compact and solid enclosure	40x21x25.4	47	87	•	•	121
▲ JBL L20J	800 G+	Lovely if pricey bookshelf model has that old JBL magic, full of bounce and brio, needs a good quality stand and can sound a bit heavy	44x26x28	30	87	•	•	138
JBL ti1000	1500 G	Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45	89	•	•	118
▲ Jordan JH400	590 A+	Piano finish hexagon has single full range driver and controversial sound, with uneven balance but delightful mid coherence	33x24x30.5	50	83	•	•	106
▲ JPW AP2	180 A	Offers real wood veneer at a bargain price; performance is cleaner but broadly comparable to P1 Vinyl overall	43.5x25.5x26	45	86	•	•	106
▲ JPW AP3	225 A+	Pretty good stereo and well balanced overall it had its own character which is well suited to vinyl replay	52x25x29.5	57	90	•	•	46
▲ JPW Gold Monitor	80 A	Great sound for pound value through bass and midband, but the top end's rather coarse	27x18x18	50	85	•	•	130
▲ JPW Minim	79 A-	Very civilised but dynamically limited, the Minim is well suited to the smaller room and where limited loudness is acceptable	27.5x18x19.5	28	85	•	•	82
▲▲ JPW Mini Monitor	60 A-	Ultra cheap Richer Sounds special is lightweight and short of welly, but a snip for surround sound use	27x18x17	50	85	•	•	122
▲▲ 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 Keliidh	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	Beautifully high-tech 'large compact' delivers extended, smooth and neutral sound with fair speed. Slate Audio stands essential	48.5x21x29.5	23	85	•	•	94
Meridian M30	950 A	Pricey active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA	•	•	46
Mission 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
▲ 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 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

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cyrus



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meridian



506

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kef reference



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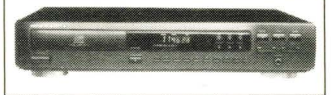
quad



77

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marantz



CD63SE

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EXPRESSION

hi fi connoisseurs and music lovers

awards on numerous products from their extensive range. With this in mind their new **CD63SE** has advanced digital replay. Incorporating top quality components like high mass drawer mechanism and copper screening for improved air flow, it ensures faithful musical reproduction, long term reliability and a natural upgrade from the highly acclaimed **CD63**. Another exceptional value for money product from Marantz.



castle

Severn

The **Severn** are Castle Acoustics' all new two-way reflex loaded floor-standing loudspeaker. As with all Castle products they are engineered to look good and sound great. The hand crafted enclosure incorporates newly developed drive units - a long throw bass/mid driver and soft dome ferro-fluid tweeter - with off-set placement ensuring outstanding stereo imagery like the bigger **Howard** and **Chester II**. Although the **Severn** has a slim

profile and small 'foot print' it generates a surprising level of controlled bass. Finally, for stability a spiked plinth is available in matching wood veneer from Castle's extensive selection of nine finishes including Rosewood, Yew and Cherrywood.



project

6.1

The original Project **6** was the winner of the 1993 What HiFi Award for the best turntable, and acclaimed throughout the HiFi press. Inevitably subtle improvements have lead to the new Project **6.1**, helping to make a good turntable even better. Included within the price is a quality Ortonfon Cartridge (option without cartridge), two different platters - one metal, one glass - and a record clamp. Thus enabling the most determined audiophile to 'tweak'! We also stock other quality turntables from Michell and Pink Triangle.



arcam

Delta 290

The **Delta 290** is Arcam's finest integrated amplifier. Aesthetically pleasing and sonically superb it has all the hallmarks of quality you associate with Arcam products - minimalist layout, convenience of operation and of course, excellent value for money. As befits a modern amplifier it features remote control and is extremely versatile. To increase the dynamic performance, yet retain the crisp, clean sound, simply add the new **Delta 290 P** (Power amplifier). This enables you to drive your loudspeakers with more control, creating a hard to beat ancillary package.



rotel

RC/RB970 BXII

Designed and developed in the UK - like all of Rotels other new products - the superb new (mark two) versions of the **RC970BX** (pre amplifier) and **RB970BX** (power amplifier) deliver performance and sound quality unparalleled at their price.

When you look back over the last twenty five years to the birth of HiFi Separates, Rotel were there. Today they still offer an outstanding range of products like the **RA930AXII**, **RCD930AX** and the new **RCD970BX** CD player. All in all proving why Rotel have been awarded more Best Buys, Recommendations and accolades than any other manufacturer.

WHO ARE WE?

Sevenoaks Hi Fi are at the forefront of Hi Fi retail in the UK. For over 21 years we have been selling quality Hi Fi products to discerning customers, and our enthusiasm is undiminished.

AFTER SALES

All our products can be installed in your home. If you wish to use this service please ask your local branch for details.

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All the products we sell are brand new, fully guaranteed and maintained in our own service department. We also offer our own 'no quibble' extended warranty. Ask for details.

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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!

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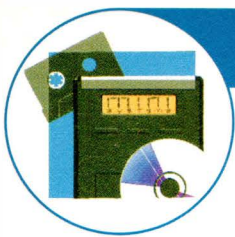


SEVENOAKS HIFI

Loudspeakers continued

Product	Price	Grade	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site close to wall	Floorstanding	In free space	Issue No
NAD 801MM	100	A-	A rather undistinguished sub-miniature with low sensitivity and indifferent sound quality	27x18x18	48	84	•	•	130
▲ NAD 804	320	A+	Good value compact floorstander sounds lively and coherent, but quite coloured due to uneven balance too	75x20x26	25	89	•	•	126
Naim IBL	895	G	This tiny floorstanding wall mount delivers outstanding dynamics, speed and detail, marred by pronounced upper mid forwardness	80x18x15-20	30	84	•	•	94
▲ Naim SBL	1708	G+	Impressive scale, full bandwidth, coherent, attractively discrete, coloured midband, very well balanced and agile	88x26.5x17-27	25	86	•	•	102
▲ Neat Petite	525	G+	Far from perfect, but one of the most entertaining and enjoyable speakers around, colorations notwithstanding.	30.5x20x18	33	86	•	•	102
Origin Live OL1B	290	A+	Pretty little miniature delivers a punchy and dynamic midband, but costs quite a lot for the engineering on offer	31x18.5x22	45	89	•	•	135
▲ Origin Live OL2A	469	G	Compact floorstander sounds open, transparent and evenly balanced; needs a big amp but enjoys hard driving	82x19x19	25	85	•	•	122
Origin Live OL1	499	G	Luxury miniature has very good overall balance, sacrificing sensitivity to achieve remarkable bass extension for the box size	30.5x19x21	25	82	•	•	106
▲ Pioneer S-4UK	250	A+	Latest version now balances pretty well, with a lively and coherent 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	31x5x2x33	45	90	•	•	128
▲ Professional Monitor Co LB1	998	G+	Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	•	•	110
Professional Monitor Co AB1	1600	G	Bulky stand-mount transmission line has lovely panel-like transparency, slightly shut in balance, and needs a big room	79x27x43	22	89	•	•	114
▲ Quad ESL-63	2384	G+	This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	•	•	60
▲ REL Strata	499	G+	Outstandingly value and performance active subwoofer adds serious bass unintrusively to any small speaker system	52x42x31	<20	NA	•	•	128
▲ Rega EL8	298	G	Kyte drivers in compact floorstander give more bass but a shade less coherence; good for small rooms and budget systems	75x16.5x21	55	86	•	•	122
▲ Rega ELA	500	G-	Classy new styling for one of the original compact floorstanders — lovely midband life and coherence if a bit bright and lightweight	84x20x20-31	40	87	•	•	139
▲ Rega Kyte	198	G	Has splendid timing and coherence, sounds very explicit and informative, if a bit bright and short of grunt	31x19x20	50	87	•	•	114
▲ Rega XEL	1040	VG	Looks good, measures well and sounds great too; balance is bright but even, with delightfully bass-to-mid coherence and timing	102x21x33	40	89	•	•	132
▲ Rogers LS2a/2	229	G	Balance is a bit warm and rich but 2a/2 has delightful mid-to-treble coherence and transparency, and more welly than Mk1	35.5x23x22	30	84	•	•	106
Rogers LS4a/2	300	A+	Civilised but a trifle lazy, this large bookshelf model hasn't quite the timing or agility to be particularly engrossing	43x25.5x25.5	25	86	•	•	110
Rogers LS6a/2	399	G	Largish stand-mount is well built, measures well, good material value, but sounds a bit heavy and lacklustre	51x28x29.5	22	87	•	•	114
Rogers LS8a	499	A+	A mixed bag, with plenty of scale and welly but lacking the subtlety, clarity and agility delivered by some rivals	89x25.5x25	48	91	•	•	102
▲ Rogers Studio 3	450	G	Pricey LS3/5A-derived wall-mount sub-miniature is excitingly coherent if a bit lightweight; no real loudness capabilities	31x19x17	30	83	•	•	118
Rogers Studio 5	700	G-	Luxury finish bookshelf size model has genuine monitoring capabilities, but can sound a little thin and unromantic	44x24.5x24.5	40	88	•	•	138
▲ Rogers Studio 7	880	G	Latest variation on classic BBC-monitor theme looks old fashioned but has beautifully voiced, laid back sound	63x30.5x30.5	30	88	•	•	122
▲ Roksan Ojan 3	895	G+	Squat, stylish and black, with unusual tweeter decoupling; great bass extension and flat but somewhat uneven balance	78x28x45	<20	85	•	•	132
Royd Topaz	173	A+	Cheerful, articulate and essentially communicative miniature can also sound a trifle scrappy and shut in; well worth trying	30.5x20.5x19	50	87	•	•	114
▲ Royd Minstrel	229	G	Imaginatively packaged super-slimline floorstander. Not much welly or loudness but fine coherence and timing; a bit bright	69x18x12-24	30	85	•	•	135
Royd Abbot	666	A+	Engaging and dramatic dynamics and fine transient coherence are hampered by a rather coloured mid-forward balance	83x20x34	43	88	•	•	118
Ruark Templar	479	A+	Compact floorstander with striking baffle has decent bass/mid but dull treble; could tame over-bright system	73x19x27	25	85	•	•	122
▲ Ruark 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 System 937	600	G	Compact real-wood floorstander incorporates transmission bass loading to give fine bass extension and an open midband	93x22.5x25	25	88	•	•	138
TDL NFM	120	A-	A disappointing underperformer in our tests, at a price that's not very nice either	27x18x18	50	86	•	•	130
▲ TDL RTL3	400	A+	Bargain price floorstander has rich, heavy and bright sound with good scale and fine basic neutrality	92x20x38	25	88	•	•	126
TDL Studio 0.5	499	G	Tiny floorstanding transmission line has good agility but doesn't provide the coherence or even balance of Studio 1	55x20x30	40	85	•	•	94
▲ TDL Studio 1	699	G	Genuinely extended bass from a compact enclosure, very detailed but a shade clinical and detached in presentation	76x23x33	25	84	•	•	78
▲ TDL Studio 1M	899	G+	Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	•	•	118
▲ TDL Reference Monitor	1999	G+	Fine solidity and good accuracy, with great bass extension. Needs a big room and can sound a bit lazy and a shade tinkly	118.5x30x47	28	85	•	•	66
▲ Tannoy 631	150	A+	High class miniature is beautifully balanced, open, unboxy and quite lively, if a bit short of real muscle	34x19.5x17	40	86	•	•	141
▲ Tannoy 632	190	G	Clever cabinet shaping avoids boxiness and promotes focus and imaging; fine bass extension but tricky stand compatibility	41x14-24x23	25	87	•	•	135
Tannoy 633	330	A+	Compact floorstander with slammin' bass — real extension and coherence without boom — but dubious midband	74x24x23	<20	87	•	•	139
Tannoy 638	599	G	Big value vinyl big box has pretty good balance and lots of loudness capability, but needs a good amp and bass isn't entirely convincing	94x16-29x27	25	90	•	•	138
▲ Tannoy Westminster	6000	G+	These awesome horn loaded speakers are remarkably controlled and impressive, if only suited to a few pockets and rooms	Huge	38	96	•	•	Col
Technics SB-EX2	200	A	Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	•	•	98
▲ Thiel SCS	1069	G+	Luxury piano-gloss compact sets class-leading standards for coherence and communication, can sound a shade dark and shut in	40x22x23	45	87	•	•	114
Thiel CS1.2	1219	G	Elegant compact floorstander has fine balance and dynamic range, but transient timing and dynamics are less convincing	94x27x27	30	86	•	•	118
▲ Totem Model One	995	G	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	31x16.5x23	28	86	•	•	122
Vandersteen 20e	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 grillwork 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

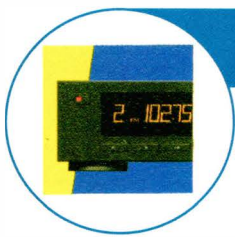
become. With things like double cassette decks, multi preset tuners, CD players and graphic equalisers supplied as standard the big boys of the stack world offer such luxuries as Surround Sound, separate chassis for different components and occasionally a record player. They usually have a few line inputs 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	Remote control	Tuner presets	Loudspeakers	Turntable	Issue No.
▲ Denon D110/S	870	G Nearly hi-fi from pretty but pricey silver stack; richer, fuller speakers would help	37x27x33	40	30	•	o	•	125
Goodmans System 700	600	A Separates flexibility and upgraeability in remote midi package; anodyne sound	69x35x37	50	20	•	•	•	125
▲ JVC Adagio G7	799	A Wondrous 2-speaker surround movie sound system, but a very uneven package elsewhere. Four by 20W output	42x28x28	20	40	•	•	•	125
▲ Kenwood HD-1000	1000	E Mini lifestyle system, well built with minimalist facilities and exacting performance standards all round	30x27x35	40	30	•	•	•	131
Marantz 1020	1000	G Component lifestyle system which is as elegant on audition as it is to look at	22x42x32	30	20	•	•	•	131
Onkyo L-909	1200	G Simple yet flexible lifestyle mini system suffers iffy cassette deck set-up, but otherwise satisfies	38x28x32	40	30	•	•	•	131
Philips FW91	999	A+ Good looking and performing package rendered expensive by inclusion of DCC deck	37x26x32	60	30	•	•	•	125
▲ Technics SC-CH950	1000	A+ Classy if rather bland allrounder includes useful Dolby Pro-Logic AV capabilities	42x27x34	60	39	•	•	•	125



Tuners

The radio medium operates at a much lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live Prom concerts can rival all other sources from a hi-fi perspective.

Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for certain transmissions in the UK.

Something of a hi-fi afterthought, tuners are often selected merely to match a chosen amplifier

cosmetically. However, the task they carry out is far from simple, combining the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on local reception conditions, but money invested in a high quality outside aerial system is well spent.

Tuners come in two basic types. Analogue models tune gradually (and usually manually) across the bands, and can have analogue or digital displays; they are often preferred for sound quality,

and are certainly best for AM bands. Digital tuners offer convenient automatic tune facilities and preset memories.

The 'Presets' column heading shows how many different frequencies a tuner can memorise for instant station access. FM, LW and MW shows which wavebands a tuner can access. 'Signal strength meters' are useful for aerial alignment. 'Automatic tuning' means that a tuner can seek out signals for you.

▲▲ **Best Buy**
▲ **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

CABLE TALK

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Chew & Osbourne Ltd	Bishop Stortford	0279 656401	Zen Audio	Hull	0482 587397	Practical Hi-Fi	Preston	0772 883958
Practical Hi-Fi	Blackburn	0254 691104	Eastern Audio	Ipswich	0473 217217	Island Compact Disc Centre	Ramsey	0624 815521
Romers Hi-Fi Centre	Blackburn	0254 887799	Classic Hi-Fi	Kettering	0536 310855	B & B Hi-Fi	Reading	0734 583730
Practical Hi-Fi	Blackpool	0253 300599	Infidelity	Kingston-upon-Thames	081 9433530	Reading Hi-Fi	Reading	0734 585463
Sound Academy	Bloxwich	0922 473499	Practical Hi-Fi	Lancaster	0524 36991	Moorgate Acoustics	Rotherham	0709 370666
Jaysound Audio	Bognor Regis	0243 826355	The Hi-Fi Company	Leamington Spa	0926 888644	Chew & Osbourne Ltd	Saffron Walden	0799 523728
Practical Hi-Fi	Bolton	0204 395789	Aston Audio Ltd	Leeds	0943 467689	Performance Hi-Fi Systems	Sevenoaks	0732 740425
Mike Manning Audio	Bournemouth	0202 751522	Richer Sounds	Leeds	0532 455717	Sevenoaks Hi-Fi	Sevenoaks	0732 459555
Movement Audio	Bournemouth	0202 529988	Superfi	Leeds	0532 449075	Moorgate Acoustics	Sheffield	0742 756048
Sutons	Bournemouth	0202 555512	Leicester Hi-Fi Company	Leicester	0533 539753	Richer Sounds	Sheffield	0742 661616
B & B Hi-Fi	Bracknell	0344 424556	Listen Inn	Leicester	0533 623754	Superfi	Sheffield	0742 723768
Brentwood Hi-Fidelity	Brentwood	0277 221210	Sevenoaks Hi-Fi	Leicester	0533 557518	Creative Audio	Shrewsbury	0743 241924
Hi-Spek Electronics	Brentwood	0277 226303	Superfi	Lincoln	0552 520265	Shropshire Hi-Fi	Shrewsbury	0743 232317
Quay TV	Bridlington	0262 672870	Beaver Hi-Fi	Liverpool	051 7099898	Fraser's Hi-Fi Video	Slough	0753 520244
Sevenoaks Hi-Fi	Brighton	0273 733338	Richer Sounds	Liverpool	051 7087484	Richer Sounds	Southampton	0703 231311
The Power Plant Hi-Fi Ltd	Brighton	0273 775978	Audio Concept	London	081 5678703	Southampton Hi-Fi Centre	Southampton	0703 228434
Richer Sounds	Bristol	0272 734397	Bartlett's Hi-Fi	London	071 6072296	Square Deal Electrical	St. Albans	0727 852501
V'Audio	Bristol	0272 686005	Billy Vee Sound Systems	London	081 3185755	A N Audio	St. Neots	0480 472071
Spains	Bromsgrove	0527 872460	Citysounds	London	071 4365366	Stamford Hi-Fi Centre	Stamford	0780 62128
Grange Hi-Fi	Burton-upon-Trent	0283 533655	Francis of Streatham	London	081 7690466	Richer Sounds	Stockport	061 4801700
Bury Audio	Bury St. Edmunds	0284 724337	Hi-Fi Care	London	071 6377879	Ward & Williams Ltd	Stockport	061 440 0201
Campkins Hi-Fi	Cambridge	0223 312240	Hi-Fi Care	London	071 6378911	Superfi	Stoke	0782 265010
Steve Boxshall Audio	Cambridge	0223 68305	Hi-Fi Components	London	071 2231110	Music Matters	Stourbridge	0384 444184
Sevenoaks Hi-Fi	Canterbury	0222 462787	Hi-Fi Experience	London	071 580 3535	Stratford Hi-Fi	Stratford-upon-Avon	0789 414533
Richer Sounds	Cardiff	0222 465654	Hi-Spek Electronics	London	081 3491166	Audio Exchange	Swindon	0793 539008
Practical Hi-Fi	Carlisle	0228 44792	Kamla Electronics	London	071 3232747	Thame Audio	Thame	0844 215431
Eric Wiley Hi-Fi	Castleford	0977 556774	M O'Brien Hi-Fi	London	081 9461528	Chelston Hi-Fi	Torquay	0803 606863
Sevenoaks Hi-Fi	Chatham	0634 846859	Musical Images	London	071 4971346	Sevenoaks Hi-Fi	Tunbridge Wells	0892 531543
Rhythms (Colvill Hi-Fi)	Chelmsford	0245 325125	Myers Audio	London	081 5207277	Chantry Audio	Tuxford, nr. Newark	0777 870372
Sevenoaks Hi-Fi	Cheltenham	0242 241171	Oranges & Lemons	London	071 9242040	Astley Audio Ltd	Wallingford	0491 839305
Chichester Hi-Fi	Chichester	0243 776402	Richer Sounds	London	071 3528496	Doug Brady Hi-Fi	Warrington	0925 828009
Monitor Sound Ltd	Chorley	0257 271935	Richer Sounds	London	071 4031201	Practical Hi-Fi	Warrington	0925 32179
Pro Musica	Colchester	0206 577519	Richer Sounds	London	071 7223359	Acoustic Arts	Watford	0923 245250
The Hi-Fi Showrooms	Congleton	0260 280017	Richer Sounds	London	071 8312888	Hi-Fi City	Watford	0923 226169
Frank Harvey Hi-Fi Excellence	Coventry	0203 525200	Sevenoaks Hi-Fi	London	071 3529466	Richer Sounds	Watford	0923 218888
Superfi	Coventry	0203 223254	Sevenoaks Hi-Fi	London	081 8558016	Sevenoaks Hi-Fi	Watford	0923 213533
Richer Sounds	Croydon	081 6671100	Shasonic	London	071 3230333	Stirling Sounds	West Wickham	081 7779321
Sevenoaks Hi-Fi	Croydon	081 6551203	Son et Lumiere	London	071 5809059	Cosmic	Weybridge	0932 854522
Hi-Fi Experience	Darlington	0325 481418	Sound Sense	London	071 4022100	Weymouth Hi-Fi	Weymouth	0305 785729
Superfi	Derby	0332 360303	Superfi	London	071 3881300	Sevenoaks Hi-Fi	Whitham	0376 501733
Rutters Hi-Fi	Devizes	0380 722268	The Sound Organisation	London	071 4032255	Bartlett's Hi-Fi	Woking	0483 771175
KA de Cobains	Doncaster	0302 326026	John Munro	Lossiemouth	0343 812340	Sevenoaks Hi-Fi	Worcester	0905 612929
Hi-Fi Corner	Dublin 2	010 353 1 6714343	B & B Hi-Fi	Luton	0582 459915	West Midlands Audio	Worcester	0905 458046
Richer Sounds	Dublin 2	010 353 1 6719666	B & B Hi-Fi	Maidenhead	0628 73420	Bowers & Wilkins	Worthing	0903 264141
J.D. Brown (Est 1919) Ltd	Dundee	0382 226591	Halksworth Wheeler	Maidstone	0622 756756	Phase 3 Hi-Fi	Worthing	0903 245577
Riverside Hi-Fi	East Twickenham	081 8927613	Central Radio (Manchester) Ltd	Manchester	061 8346700	Worthing Audio	Worthing	0903 212133
Musical Images	Edgware	081 9525535	Practical Hi-Fi	Manchester	061 8398869	Action Gate Audio	Wrexham	0978 364500
Richer Sounds	Edinburgh	031 2263544	V.J. Hi-Fi	Margate	0843 226977	Mike Manning Audio	Yeovil	0935 79361
Sevenoaks Hi-Fi	Enfield	081 3421973	Audio Insight	Milton Keynes	0908 561551	Vickers Hi-Fi	York	0904 629659
Hi-Fi Corner	Falkirk	0324 629011	Technosound	Milton Keynes	0908 604949			

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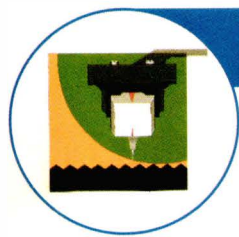
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Turntables – cartridges



Cartridges fall into two groups: high output models, capable of working directly into most amplifiers and categorised as having a normal (N) output, and more expensive low and very low output models (L, VL). Stereotypically, low output cartridges use the moving coil principle of operation, have better mechanical integrity and tighter tolerances, and give better performance but

at much higher cost. With CD now the dominant medium many amplifiers are no longer equipped with the necessary phono input for a cartridge and a separate phono stage is necessary. Valve designs need either an extra head amp or transformer to cope with the low output of moving coil cartridges.

Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs

benefit in overall balance from optimised amplifier capacitance loading. The mechanical characteristic of cantilever compliance ('springiness') needs to be considered in the light of the effective mass of the tonearm, and to achieve a good match compare the effective mass requirements figures with the actual effective mass of specific arms. 'turntables' and 'tonearms' sections.

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	G Although listeners just preferred the 110, its brother here proved a twin in lab tests and is still "thoroughly competent"	6-16	N		•	43
Denon DL304	200	VG Uncoloured, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	450	VG Clear, detailed, neutral and generally very informative - excellent .	6-18	L		•	91
▲ Dynavector XX-1	988	G+ Good, but not immensely competitive at the price, and not helped by comparison with the low output version	7-15	N		•	84
▲ Dynavector XX-1L	988	VG Very clear, very detailed, no troubles with tracking; response lift around 20kHz seems to do no harm	7-13	L		•	84
Empire Benz Micro MC-Gold	150	G Nothing is obviously wrong, but nothing is stunningly right either. Safe, but perhaps a little too safe	7-17	L		•	103
▲ Empire Benz Micro MC-Silver	150	G Ultimately not the peer of the MC Gold is more appropriate to the sort of equipment it's likely to be partnered with	8-18	N		•	103
▲ Empire Benz-Micro MC-3	800	G+ Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
Glanz GMC-10LX	80	A+ Bearing some of the hallmarks of the '10EH, the '10LX is still less competitive in the sonic stakes	7-15	L		•	67
▲ Glanz GMC-20E	129	G+ Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	G Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	G As with 1012, a touch harsh; detail and transient purity improved, though, and it goes well with electric guitar!	5-11	N	•		85
▲ Goldring 1042	90	G Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	A A lightweight and frisky-sounding MM that appears to be based upon the same body as the Nagaoka mm4	7-15	N	•		67
▲ Goldring Elite	200	G The basics are right, and it will cheerfully tackle any source material, but its sound possesses a certain dirtiness	8-18	L		•	103
▲ Goldring Eroica H	100	G- More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	G Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
▲ Goldring Excel	549	G Errs on the warm and heavy side of neutral. Strong bass lines are its forte, but resolution of subtle treble details is weak	6-13	L		•	72
▲ Goldring Excel GS	600	G+ True high end quality in its lack of colorations, but tracking seems indifferent and high levels tend to sound rough and edgy.	9-20	L		•	103
▲ Linn K5	49	A+ Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	G Linn threw this model into the leading pack by beefing up the Basik's bodywork and adding a super stylus	6-15	N	•		Col
▲ London Maroon	199	A+ Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
▲ London Super Gold	339	A- Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Milltek Aurora	299	G+ An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲▲ Ortofon 510	32	G+ For the price, a good blend of virtues weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	55	A+ Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	85	G+ Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
▲ Ortofon 540	110	A Graced with FGII stylus but possessed of too high a compliance for broad arm matching. It could also sound a little unforgiving	3-8	N	•		67
▲▲ Ortofon MC10 Super	85	G "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	110	G+ A good all-rounder, with outstanding performance in detail retrieval, even if it can be very slightly bright and close-up	10-24	L		•	103
▲ Ortofon MC3 Turbo	110	G Not terribly subtle, but it obviously doesn't aim at that. The 3 Turbo is bright, cheerful and bouncy - take it as it comes!	10-24	N		•	103
▲ Ortofon MC3000 MkII	950	E Low levels of body resonance are a real ear-opener. Nothing to criticise elsewhere; one of the very best	9-16	VL		•	84
▲ Ortofon MC5000	1500	G Review sample could not be fully run-in, limited tracking ability, bright and forward sound, though imaging is excellent	12-20	VL		•	91
▲ Rega Bias	34	A+ Difficult to mount in some arms due to its shallow build, the bias offers a 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



▲▲ **Best Buy**
▲ **Recommended**

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 suchassis' — decks which have some form of internal isolation, generally in the form of

springs but occasionally more solid materials such as rubber. 'Manual' and 'Automatic' refer to the operational tendencies of the deck/arm combination — automatic high end turntables are as rare as hens teeth. 'Cartridge' — if one is supplied. 'Belt drive' as opposed to direct drive is the preferred method in most quality decks. An 'Electronic PSU' offers switchable speed change and a 'smoother' power supply for better sound.

Turntables

Product	£Price	Comments	Arm effective mass (g)	Suspended subchassis	Manual	Automatic	Cartridge	Belt drive	Electronic PSU	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	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
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▲ SME 309	568	VG Beautifully made and finished, fully adjustable, a highly neutral performer	10		•	•	79
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Personal messages

Building an AV system has always meant compromising either sound quality or convenience. Paul Messenger looks at a new British amp that aims to compromise neither.



Regular topics of this column have included the difficulty of having your hi-fi cake at the same time as eating your AV surround sound home cinema experience. As a hi-fi nut, I'm not prepared to give up my carefully selected stereo nirvana, but still want the best possible results from TV sound. In striving to combine the two, I've encountered a few nasty little traps lurking along the way.

My particular bête noire is the AV amplifier (or receiver), and in January, I used this column to explain why I believe the separate AV processor is an altogether better bet. (For the jargon weary, the distinction is that the AV processor works alongside and supplements a normal stereo amp, while an AV amp replaces a stereo amp.)

Very soon after writing that column, a courier brought a pleasant surprise—a new AV amp from Arcam, namely the *Xeta One*. It costs a fairly considerable £1000, but in full vindication of the stiff pricetag, it sounds like a real hi-fi amp. So it's in a totally different class from the many AV amps which have passed my way the past couple of years.

My first action on receiving one of these multi-channel monsters is to plug in a high quality stereo source and a classy pair of speakers, and then listen to some favourite records. Soon after I wander off to find something that's more fun, like emptying the dishwasher or hanging out the washing.

These AV amps may carry well known brand names (Pioneer, Denon and Technics, for example) with well-established reputations for good stereo amplifiers. But they rarely have more than the logo in common with the minimalist stereo amps which dominate the budget hi-fi market in Britain.

Most AV amps are created to meet the demands of the large and advanced US market. You can tell by the speaker and signal sockets used on the back, and by the fact that there are nearly as

many AV receivers as amps around. Quite a few 230V models have recently been sold in Europe, but that's simply a nice bonus at this stage of the game.

Much the same was true of the Japanese stereo hi-fi amps which were sold in Britain between 1965 and 1980. During the '80s, the UK developed an appetite for minimal facilities and maximal sound quality, and gradual loss of credibility and market share to British brands like Arcam, Mission and Creek eventually sparked a reaction from the major Japanese brands. By the start of the '90s, several brands were creating special models primarily aimed at recapturing their historic slice of the UK market, often using British input. As we now know, the Pioneer A-400 was the most successful.

But you won't find much in common between the A-400 and Pioneer's AV amps. The VSA-303 was the pick of a bunch in Paul Miller's recent review (*Hi-Fi Choice* 135). It doesn't build on the roots that created the company's current

credibility in the UK, but it's an intelligently conceived design.

Arcam is a much smaller company, exclusively involved in specialist hi-fi. The obvious route to an AV amp was to base it on the building blocks already used for its well-respected stereo amps. If you look inside the *Xeta One*, you'll find elements from both *Alpha* and *Delta* hi-fi amps, held together by Arcam's own implementation of Pro-Logic and the various command protocols.

Connect your stereo source and speakers to a *Xeta One*, and you'll find that it sounds just like a high class stereo hi-fi amp, with all that implies in terms of grip, control, information retrieval and dynamic range. Plug in the video recorder and switch to Dolby Pro-Logic, and you'll get the same sort of tension and transparency from your movie soundtracks. The important

front soundstage is very well covered, because each of the three power amps used here come from Arcam's higher power *Delta* hi-fi series. The surround channel's integrated power blocks don't represent quite the same degree of luxury refinement, but there's always the option to add onboard *Delta* power amps, either to boost the surround or bi-amp the front channels.

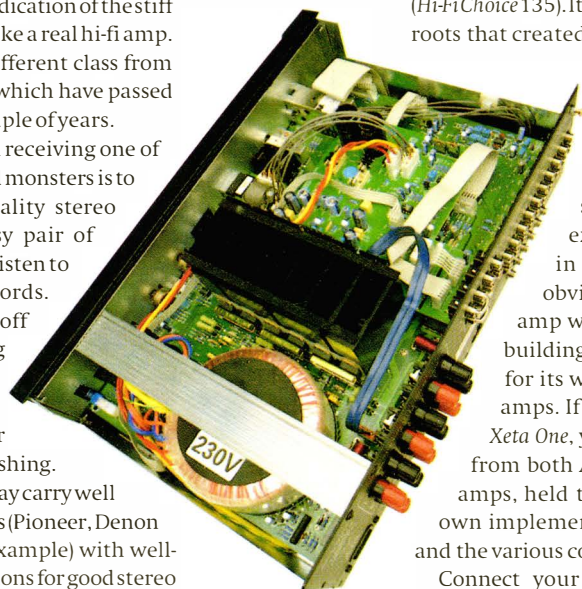
The *Xeta One*'s main achievement is to supply the same sort of performance that a separate processor/pre/power combo can deliver, implemented within a single box. Although the casework is a few inches higher, it has the same depth as Arcam's other integrations and should slot into the same shelf space without much difficulty.

My major complaint, which applies to all AV amps, is that the convenient one-box solution is only really viable from an interconnection point of view if all the A and AV equipment is gathered together in the same general location—an arrangement not usually found in British lounges. I'm not going to reiterate the ins and outs here (check issue 138 of *Hi-Fi Choice* for the full version), but I don't believe that all the AV switching malarkey is relevant in Scart-oriented Europe.

With most AV amps, it's easy to ignore the AV switching and connect the audio output from a TV set into any spare amp input. But that's not quite enough with the *Xeta One*, which lacks any form of built-in display, relying instead on an on-TV-screen display via the monitor output. This makes it more awkward to avoid AV switching, and brought hum problems to my rather elaborate system.

Hum and noise aside—exacerbated by my high sensitivity speakers—the *Xeta One* does at least provide an one-box option that doesn't sacrifice the sound quality that hi-fi buffs have grown accustomed to.

That said, I'm still of the opinion that a separate AV processor is the best way for the serious hi-fi enthusiast to add home cinema sound capabilities to an existing hi-fi system.



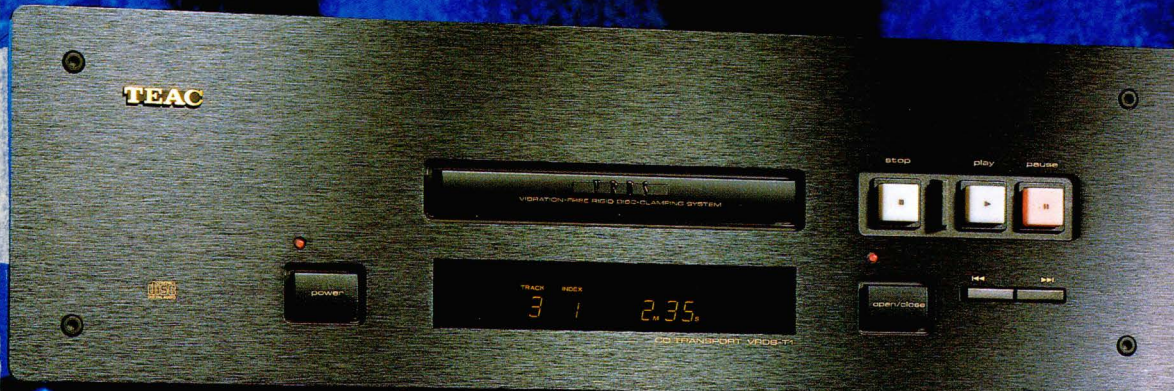
Arcam's *Xeta One* — the first high-end AV amp from a British manufacturer

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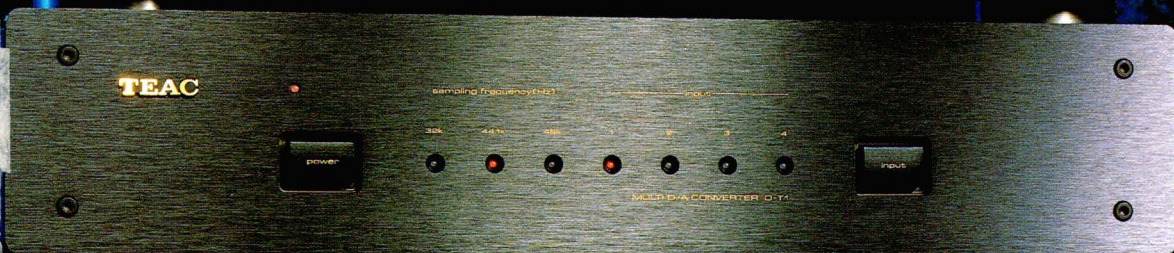
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