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might be a
DVD machine!
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**Buyer's
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**ISSUE 177
APRIL 1998
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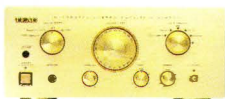
T-H500 TUNER



AV-H500 PRO-LOGIC AMP



A-H500 AMP



MD-H500 MINI DISC



R-H500 CASSETTE DECK



PD-H500 CD PLAYER



VRDS-9 CD PLAYER



"TEAC mini sets standards"

WHAT HI-FI, Jan 97

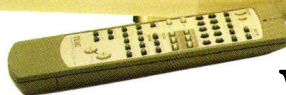
"All three sources sound big and confident, with an accuracy and delicacy more akin to separates than minis"

WHAT HI-FI, May 97

"In terms of its good looks, the system's asking price could just about be doubled"

Gramophone, Jan 97

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DUE TO TECHNICAL DIFFICULTIES BEYOND THEIR CONTROL, OTHER MINI SYSTEMS WILL NOT BE DELIVERING THIS LEVEL OF PERFORMANCE

Chief Musical Officers' Warning

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Street, London W1P 3LD ☎ 0171-396 8000 Fax 0171-396 8002

• Published by Dennis Publishing Ltd, 19 Bolsover Street, London

W1P 7JH • Company registered in England, number 1138891 • Entire

contents of this issue © 1998 Felden Productions ISSN 09551115



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Editor's Notebook



PHOTO BY SEAN RUDOWHER

Stan Vincent shakes the dust out of his ear canals and puts on sunglasses to greet the bright new dawn of a new audio age.

A hi-fi manufacturer recently suggested to me a new malaise: reviewer fatigue. The golden ears have become tarnished, he reckons. We've all heard so much hi-fi, our musical palates are jaded. The only tastes we can perceive are the most extreme, the red-hot chillis of hi-fi like Rehdeko speakers and Acoustic Precision CD players.

Might be stimulating for us, could be frightening for readers — the people for whom hi-fi is not business but pleasure; a comfort zone. He made a good point, but I defend our right to champion the products that sound most exciting and different.

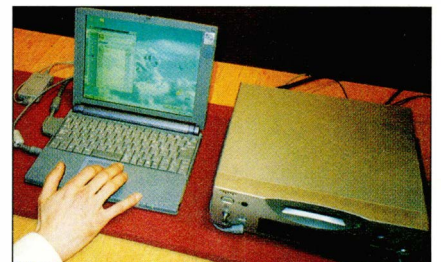
Fact is, so much hi-fi, even from specialist manufacturers, often sounds quite similar. I heard this for myself while attending *Hi-Fi Choice's* unsighted panel listening tests this month. The first one was loudspeakers, as featured this month; the latter was amps for next month. The former group exhibited much greater internal differences than the latter, but what I found more concerning was the way that some expensive equipment failed to impress more than the cheaper gear.

Hi-fi novices won't upgrade unless they can hear a reason to do so, making it all the more important for hi-fi journalists to champion the equipment that *really* stands out in sound. Vive la difference!

Sound Trek: The Next Generation

I'm very excited by the promising propositions being aired for next-generation, higher-resolution CD formats. SACD, jointly developed by Sony and Philips (see *Update*, p9) promises interchangeability with current CDs and players; while the new DAD format (see p15) is making a case for audiophiles to purchase DVD players.

Mind you, at present it does make sense to buy a DVD player for music, not movies: at a recent Sony press conference the proposed roster of launch-supporting DVD software titles was frankly uninspiring, as was their picture quality. Politics is a problem: vast tracts of disc space have been taken up with multi-language digital surround tracks in both Dolby Digital and MPEG2 5.1 formats, even though the former alone would have done the job legitimately (see *Update*, HFC 175.)



Computerised MiniDisc editing from Sony!

While these new formats struggle to leave the ground, HDCD is already serving the in-flight meal. Its maker, Pacific Microsonics, is working with silicon giant Motorola, to incorporate HDCD Process technology on an advanced new audio chip (see *Update*). Another fillip for HDCD has been its use in remastering Atlantic Records' prestigious 50th Anniversary CD.

Tech that and party

Even for existing formats, numerous high-tech new products are pouring over the horizon, as you'll read in this month's *Update*. I'm particularly intrigued by developments in MiniDisc (MD) from Sony, which claim to link MD recorders to CD multiplayers under computer control.

MiniDisc is emerging as a very useful recording format for audio editing, because of its rewritability and computer-disk-like file storage format. But for advice on the current crop of MD recorders, don't miss our group test on p52 of this issue.

CD recordable resurges

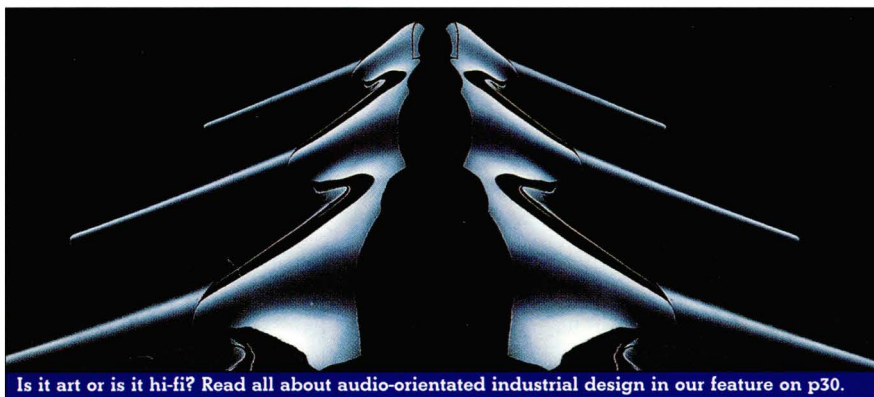
Philips is challenging MD's recording role with CD-Rewritable (CD-RW), in the CDR 870 CD recorder we reviewed in HFC 174. But increasingly it looks like recordable CD and MD will become complementary: the former offering uni-format convenience and ultimate sound quality; the latter promising ultimate miniaturisation for portable applications and, at present, an increasing groundswell of support from third-party manufacturers.

Incidentally, on the CDR 870 front, soon we'll be testing a version of this unit revised following problems we identified in February issue's review. So keep reading *Hi-Fi Choice* to learn of all the exciting new developments as they occur!

A feast of US high-end exotica awaits you from p42 onwards: (from left) Boulder pre/power amp, Resolution Audio CD50, Krell KAV-250 pre/power.



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A fantastic Vestax AA-88,
where hi-fi meets DJ!

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Update

THIS MONTH... NEW SONY DVD AND MD PRODUCTS... AP EIKOS UPGRADE... SACD LICENSING... AND MUCH MORE...

In brief

Rotel has announced the RA971, an integrated amp priced at £199.95 which claims to offer 70 Watts per channel. It has four line inputs and two tape loops. ☎ (01908) 317707.

Castle Acoustics has secured a £600,000 investment from Yorkshire Fund Managers to help fund further expansion over the next five years. ☎ (01756) 795333

Data Conversion Systems (dCS) of Saffron Walden has won five international awards for its £8,500 Elgar DAC. ☎ (01799) 531999

Surrey Sounds of Walton-on-Thames has taken over the UK distribution of Micromega products. ☎ (01932) 254297

DSA Concepts has announced a range of equipment supports, including modular multiple-shelf units, purpose-designed source/amp platforms, and a range designed for AV components. ☎ (01706) 712472

JBL has announced the Control 52 AV package, priced at £699.99, which comprises four CM52 enclosures (a two-way design based on the classic Control 1), a Control Centre dialogue speaker voiced to match, and the Sub 10 100-Watt powered subwoofer. ☎ (01908) 317701

Musical Technology has doubled the size of its production facility in anticipation of increasing OEM business, by moving from Chesham, Bucks to: Unit One, Penllwyngent Industrial Estate, Saville Road, Ogmere Vale, Bridgend, Mid Glamorgan, CF32 7AX. ☎ (01656) 842000

Miller and Kreisel has developed in-wall speakers the SW-85 and

Sony tech extravaganza

Sony is set to launch two DVD players in April: the 'high-end' DVP-S715 (£599) and the DVP-S315 (£499).

Though these are first and foremost video products, Sony claims that the 'S715 in particular will offer above-average sound quality, thanks to a dedicated analogue output board with discrete components and its own R-Core transformer sporting oversized windings.

It incorporates a one-bit DAC, supporting quantisation from CD's 16 bits up to the 24 bits embodied in the DVD audio specification, and sampling rates up to 96kHz. (See p15 of this issue to learn how this may impact upon audiophiles.) For tweakers there is Sony's variable-coefficient digital filter, as offered on the CDP-X3000ES (HFC 169).

On the MiniDisc front, Sony is introducing 11 new models, bringing the range to a total of 18, divided equally between home decks and portables. The home decks are part of a new 'mid-range' separates series designated QS — separates intended to complement MD products, which should help build the market for MD, Sony hopes.



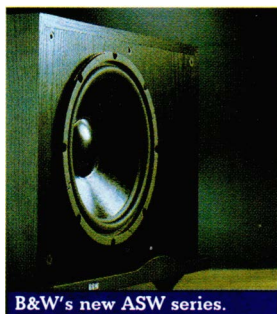
The MDS-JB920, due to be launched in August, will lead the new MD homedeck range at a price of £299.99. It incorporates ATRAC 4.5, plus the 'R-Core' transformer and current-pulse D/A found in the upmarket ES MD recorders, like the MDS-JA30ES reviewed on p57. New features include a digital recording level control to standardise different levels from CD, digital audio broadcasts etc, and a pitch control which adjusts playback speeds between -98.5 per cent and +12.5 per cent.

Intriguingly for those who value MD's editing facilities, the JB920 offers 'Control A1', the facility to link with both a PC and Sony's MegaStorage CD changers. Sony ☎ (0990) 111999

B&W's final frontier

To boldly go where no subwoofer has gone before — that, or something very similar, is the claim for B&W's new ASW (active subwoofer) range. Three models, priced from £499.95 to £999.95, are all housed in reflex-loaded cabinets, whose port flares benefit from B&W's 'FlowPort' system, in which the mouth of the flare is peppered with tiny pits. This represents an attempt to benefit from the enhanced aerodynamics of a golf ball, according to B&W.

The range-opening ASW1000 incorporates a 120 Watts amplifier and 300mm-diameter drive-unit, claiming a response down to 25Hz (-3dB). The £799.95 ASW2000 ups the ante with a 175 Watts amplifier, a higher-spec driver of the same dimensions. It increases on the 1000's maximum output level and, stretches down a bit further to 22Hz. The top-notch ASW3000 powers a 380mm-diameter driver with a 300 Watts amplifier, claiming extension down to a positively seismic 18Hz.



B&W's new ASW series.

All units are magnetically-shielded for positioning close to TV sets, and all incorporate 'soft clipping' circuits to lessen the likelihood of audible distortion. The two higher-power amps employ encapsulated toroidal transformers.

Signal connections may be made at line or speaker level.

B&W ☎ (01903) 750750

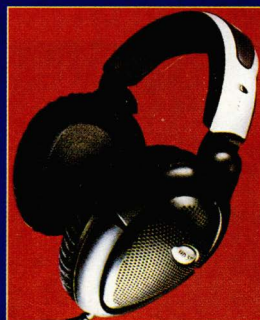
Sennheiser's new can

Headphone supremo Sennheiser has replaced its HD535 as the entry-point into the company's prestigious 5 Series of upmarket ear-speakers.

At the heart of the new HD570 Symphony is a 'Duofol' transducer, constructed from two Mylar films, which claims to be both rigid and self damping. This is driven by a neodymium-iron magnet assembly and lightweight-alloy voice coils, designed for controlled long excursions, according to Sennheiser.

The company has invented the buzz-word 'Bionetic' to describe the advanced ergonomic design which allegedly benefits this 'can'. It weighs 210 grams and has a single-entry signal lead, which is reinforced with woven Kevlar strands but may be unplugged for replacement — a Sennheiser exclusive, claims the publicist. The three-metre OFC lead is terminated in a 3.5mm plug, with a 6.3mm plug adaptor supplied.

Frequency response is said to be 18 to 22,000 Hz \pm 3dB; impedance, 120 Ohms. Sennheiser ☎ (01494) 551532



Sennheiser's 'Symphony.'

Eikos cleans up

The Acoustic Precision Eikos CD player celebrates its first birthday with an upgrade to voltage regulation circuitry. In this retrofittable modification, dubbed Lithos D, seven motherboard voltage regulators are replaced with discrete, ultra-low-noise daughterboard versions.

To modify an existing player costs £352. All new Eikos CD players will incorporate the revision, but will now retail for £2,100, which represents a premium of £250 over the current selling price.

The new circuits claim to improve voltage stability six times to a figure of one part per million, and to ensure 100 times less noise on voltage supply rails.

Acoustic Precision also alleges that the Eikos's dual-differential DAC chips are able to operate with greater accuracy once the upgrade has taken place.

An analogue version of this upgrade, called Lithos A, is also available for existing Michell Iso phono stages and Argo preamps, in both standard and HR guises. Since only two upgrade devices are required on either unit, the modification cost is £159.

Acoustic Precision ☎ (01483) 267516



Acoustic Precision's Eikos gets a birthday upgrade.

In brief

the SW-95, which share the company's enclosed designs' drivers and crossovers, but feature a unique frameless, magnetic grille fastened to a steel baffle. Prices start at £350.

☎ (01273) 233021



REL/Boston 2, priced £1,199.

Boston Acoustics and UK subwoofer supremos, REL, have teamed up to offer two AV packages: the REL/Boston 1 (£799.99) and 2 (£1,199.99). The REL/Boston 1 utilises REL's Q50 active sub-bass system, which will operate alongside two Boston Micro80 satellites, the CR1 dialogue and Micro VRS two-way dipolar surrounds. The REL/Boston 2, meanwhile, combines the REL Q100E sub with two Micro90 satellites, Micro90 Centre and two Micro VRS surrounds.

☎ (01656) 768777

HDCD creator Pacific Microsonics is working with Motorola to incorporate the HDCD Process technology on the chip manufacturer's new DSP56362 24-bit audio DSP chip, which will also offer Dolby Digital, DTS and MPEG decoding.

☎ (01844) 261919

From April, Sky Music Choice, a joint venture between BSkyB and Music Choice Europe, will offer up to 60 channels of non-stop 'CD-quality' music programming. Seven channels will be available for existing analogue BSkyB subscribers; while a further 50 channels will become available on the launch of BSkyB's digital service in June.

Errata

In our review of the Myryad MCD 500 CD player in HFC 176, we neglected to account for the unit's three-year guarantee in our value rating. We have retrospectively adjusted its rating to three stars in recognition.

In the review of lifestyle systems in HFC 174, we suggested that the price of the Denon D-M7 system was £649.99 excluding speakers. We have been advised that this is a package price in which speakers are included. Apologies for any confusion this may have caused.

Small is beautiful

Celestion has washed its A1 standmount speaker (Best Buy, HFC 164) on the super-hot cycle, resulting in the A Compact, at a price of £599, representing a £300 discount from the £899 A1.

The A Compact incorporates the A1's 25mm-diameter titanium-domed tweeter, but partners it with a 100mm-diameter, long-throw, bass-mid driver, which is 25mm smaller than the A1's unit. As visible in the picture, both units in the Compact are mounted on a die-cast aluminium frame. Enclosure size is a diminutive 245 x 168 x 214 mm (HxWxD).

Sensitivity is quoted as 87dB, low-frequency extension as 80Hz. Rosewood, black ash and cherry real-wood veneers are available. Celestion Consumer Division ☎ (01622) 687442



Celestion's A Compact.

Arcam's Alpha gets smart

Arcam chose the Bristol hi-fi show to debut its new Alpha 10 and 10P amplifiers, for which upgradability is being touted as a major feature. Priced at £799.90, the Alpha 10 starts out as a 100-Watt stereo integrated amp, but may be converted into a multi-room or home cinema processor.

The £599.90 Alpha 10P power amp also offers 100 Watts per channel. A third channel may be added at a later stage: thus upgraded and combined, the 10 and 10P could be used to run a full 5.1 channel, 500-Watt digital surround-sound system. The extra upgrade is expected to cost £249.

The remote-controlled Alpha 10 offers a 'full suite' of audio inputs, plus the option of an MM/MC stage for turntables. Smart cards can be fitted for Dolby Digital processing and multi-room functions, the latter enhanced by a bus 'comms link' facility fitted as standard.

Arcam ☎ (01223) 440964



Arcam's Alpha 10/10P combination.

Myryad's airwave supply

Myryad Systems, of Waterlooville, Hants, has announced a remote-controlled tuner, the MT 100, priced at £529.95. It is said to incorporate 'a discrete front end with dual-gate MOSFET input amp, three tuned RF stages and a buffered local oscillator', according to Myryad.

At the other end of the signal chain, meanwhile, there's said to be a discrete Class A push-pull output buffer amp, which claims to offer a low output impedance, for compatibility with a wide range of interconnect cables and amps.

The unit may be tuned automatically or manually, and will store up to 19 stations in non-volatile memory. Its fluorescent display is said to match that of the MC 100 CD player.

The company has also announced the arrival of Chris Short, former owner of Mordaunt-Short loudspeakers, who has 'taken an involvement in the affairs' of the company, according to Myryad's publicist.

Myryad ☎ (01705) 265508

Myryad's remote-controlled MT 100.



NAD's cut-price CD

NAD's new 522 CD player slots into the hotly-contested budget marketplace at £169.95, and assumes the mantle from the £200 510, as the cheapest model in NAD's range.

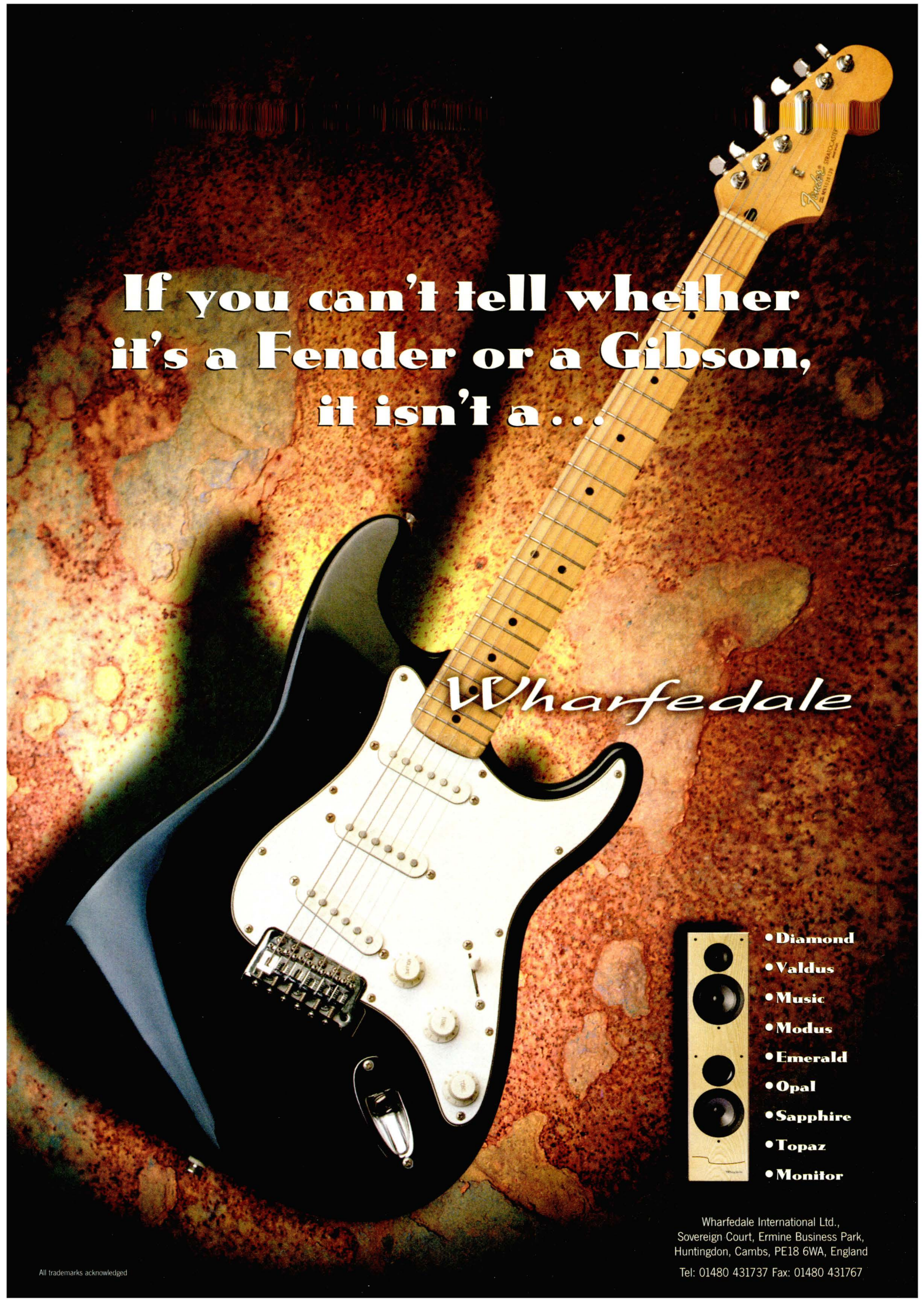
Unlike the 510 it offers remote control, plus a MASH DAC followed by five-pole filter. Other 'audiophile' touches are said to include metal-film resistors and polypropylene capacitors in 'key areas' of the signal path, an output impedance of 120 Ohms and premium-quality op-amps.

On the AV front, NAD has launched the remote-controlled AV711 Dolby Pro-Logic receiver, a £299.95 device which claims to develop 120 Watts of power for front left, centre and right speakers, plus 20 Watts for surround; or two times 115 Watts into two Ohms of IHF dynamic power.

At the recent Sound & Vision hi-fi show in Bristol, NAD unveiled the PP-1 phono amp, and the Silver Line, a radical departure from the company's cost-conscious tradition, comprising high-end separates priced over £1,500. More details in our Bristol show report next month. Audio Club ☎ (01296) 482017



NAD's 522 CD player.



**If you can't tell whether
it's a Fender or a Gibson,
it isn't a...**

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Huntingdon, Cambs, PE18 6WA, England

Tel: 01480 431737 Fax: 01480 431767

Super Audio CD gathers pace

Philips Electronics N.V. and Sony Corporation have announced licensing terms for their jointly-developed Super Audio CD (SACD) technology, as previewed in *HFC 175*. Current CD format licensees will be offered the chance to extend their licensing agreement to include SACD, but at the same royalty levels currently being levied for CD.

The two companies propose to discuss licensing of SACD at a forthcoming CD licensing meeting due to be held in Tokyo on March 19. Version 0.9 of the SACD specifications is scheduled for release at the end of March. Once this spec is finalised, Philips and Sony claim it will be appended to the Red Book CD standard.

The announcement was made at EMI's Abbey Road



studios on February 17, where two and five-channel demonstrations were made of the one-bit Direct Stream Digital (DSD) encoding process on which SACD is based.

Editor's Note: SACD is being proposed as an alternative to the unfinalised DVD Audio format (and, by default, now the nascent DAD format, see p15.). It is a dual-layer disc designed to be backwards-and-forwards-compatible with the existing CD format, and claims to offer bandwidth in excess of 100kHz plus 120dB dynamic range. The system has a data capacity of 2.8Mb/sec/channel with two or five channels.

Neither commercial hardware nor software are expected to be available before Spring 1999.

Arc of a Diva

The Grand Diva is the latest addition to the Grand series from DALI (Danish Audiophile Loudspeaker Industries). It offers a claimed 90dB sensitivity and power handling from 50 to 350 Watts, at a price of £2,500.

Its business end includes a 25mm-diameter silk-domed tweeter, and two 'recently developed' 16.25mm-diameter bass-mid drivers, which are claimed by the publicist to be "ultra-linear, low-loss, low distortion" designs. Each is loaded by an individually-tuned bass-reflex enclosure with rear-facing ports.

Furthermore, DALI says the bass/mid drivers are configured to overlap in output up to 450Hz, thereafter diverging, with one continuing up to the three kHz tweeter crossover frequency, and the other rolling off. This, claims DALI, halves the cone excursion that would be required of a solitary same-size drive unit.

The bi-wirable Diva shares with sibling the Grand Coupé a curved top plate, narrow front baffle, chamfered front corners and a choice of cherry or rouge wood-grain veneers.

Also new from DALI is the Viper loudspeaker cable, priced at £4 per metre. It claims to incorporate oxygen-free copper conductors and a polyethylene dielectric. Audio Club ☎ (01296) 482017

Dali Grand Diva.

Pioneer keeps AV options open

Pioneer joins the vanguard of UK DVD launches this spring, unleashing two new players. The DVL-909 is a LaserDisc/DVD/CD 'combi' player priced at £899.95, while the DV-505 is a DVD/CD player costing £449.95. Pioneer claims both players are equipped with 20-bit/96kHz converters.

The DVL-909 is a dual-standard (NTSC and PAL) combi player. Thanks to its double-pick-up design, Pioneer says it is currently one of few players in its class capable of playing back audio CD-R discs. It is styled to match Pioneer's VSA-06 THX 5.1 AV amp.

The DV-505 is a single pick-up design that will stream both Dolby Digital and MPEG2 multi-channel sound data for decoding by suitably-equipped converters. It incorporates a sample-rate downconverter to create a CD-standard PCM output even from 96kHz audio discs.

Both models offer on-TV graphical interfaces which grant access to features such as field/frame pause. Pioneer ☎ (01753) 789789



Alpha for all

Denon's proprietary Alpha digital processing system, once the sole preserve of the £5,000 DA-S1 DAC, now becomes available on the new DCD-1550AR CD player, priced at £349.99. Alpha processing is said to create a 20-bit quality signal from regular 16-bit CDs, giving ambience and other subtle effects a chance to be heard more clearly.

The DCD-1550AR uses twin multi-bit DACs in a super-linear configuration, which claims to eliminate crossover distortion and the problems associated with 20-bit DACs.

Features include pitch control over a ±12 per cent range, programmable fade in and out, remote electronic volume control, plus optical and coaxial digital outputs. All of this high-end wizardry is housed within a balanced-mass chassis fronted by an alloy fascia.

Hayden Labs ☎ (01753) 888447



Elemental excess

Elemental Audio of Camelford, Cornwall, has unveiled some new high-end speaker stands and supports. The range starts at £499 for the Mono-Plinth, and extends to £1,899 for a pair of Reference Speaker Supports (pictured).

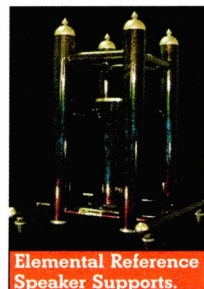
Elemental makes grand claims for constructional excellence, suggesting that all supports are specialist welded from tubular steel, 'agitation filled' with a composite damping material to lower centres of gravity and reinforce anchoring.

The company's so-called 'Composite Hybrid Spike Units' are said to incorporate nickel-plated carbon tool-steel tips, aluminium body and finger grip, with 'hard grade' stainless steel threads, nuts and washers.

Shelves are fabricated from 20mm-thick polyester-bonded marble aggregate, available in different colours and grain structures. Each shelf is damped with rubber matting and decoupled from isolation spikes by bonded, inset lead/zinc discs. Elemental claims this material outperforms marble, granite or slate.

Aluminium end caps and fittings are available in natural-polished finish, or anodised for co-ordination.

The company also offers to undertake individual home colour co-ordination for an additional fee. Elemental ☎ (01840) 211045



In brief

Wire Wraps

US brand Straight Wire has launched its Level 3 interconnects in the UK: Encore II (£99.99 per metre); Rhapsody II (£149.99 per metre); and Maestro II (£249.99 per metre). The unique feature is oxygen-free, high-conductivity (OFHC) copper strands, individually-polymer-coated during extrusion. ☎ (01423) 359054

van den Hul has announced the Skytrack Hybrid 98 speaker cable, in which proprietary carbon-coated oxygen-free copper (OFC) conductors are present in finer strands. Cost is £5.49 per bi-wirable metre. ☎ (01388) 663273

Glaive Ltd has taken on UK distribution of Swedish-made Supra cables, including the Classic and low-inductance Ply series, plus EFF interconnects including the DAC-XLR Gold 110 Ohm AES/EBU harmonised digital interconnect. ☎ (01622) 664070

QED has created a version of the EC-compliant BFA speaker connector, which benefits from QED's unique 'Airluc' cold-welding system. This does away with solder or screw fixings, by compressing speaker wire within the body of a conductor under a force of 36 kiloNewtons. ☎ (01284) 811891

ALBUMS PLAYED IN THE HI-FI CHOICE OFFICE THIS MONTH

The Wallflowers Bringing Down The Horse
Air Moon Safari
Lloyd Cole Love Story
The Propellerheads Decksandrumsandrockandroll
Terry Callier Timepiece
Curtis Mayfield Back To The World
Goldie Saturnz Return
Bob Dylan Highway 61 Revisited (on 180g vinyl)
Cornershop When I Was Born For The 7th Time
Swingers OST
Silent Poets For Nothing
Paul Weller Wild Wood

Breaking The Law



Alan Sircom has a high-end experience with this 'starter' system from Nottingham dealership Definitive Audio.

Definitive Audio's 'starter' system departs from the beaten path of hi-fi. At a cost of £3,492 the set-up breaks almost all the rules, but justifies its iconoclasm with superb sound quality. Perhaps the greatest sin against hi-fi commandments is the emphasis this system places upon loudspeakers.

The source is a £700 Helios Model 3 CD player, the amplifier is a £500 Musical Fidelity A2, while the £1,500 Living Voice Auditorium loudspeakers cost more than both products combined. Cynical readers would expect nothing more from a company that actually builds the loudspeakers, but extensive fiddling and twiddling with CD and amp led to few dramatic improvements without serious increases in the cost of both, so Definitive Audio appears to have balanced this system just right.

The A2, spiritual heir to Musical Fidelity's legendary A1, was reviewed and Recommended in *HFC* 162. The Helios, meanwhile, is junior to the £950 Model 2 CD player Recommended in *HFC* 176.

The Auditorium, too, has seen action in these pages (*Ear Waxings*, *HFC* 164), but has yet to participate in a formal group test. It is a rear-reflex-ported design using a mechanically isolated, hard-wired crossover with extremely high-tolerance components and a very-high-density chipboard cabinet.

It is claimed to be 94dB sensitive, and to offer in-room LF extension of 35Hz. But statistics aren't everything in audio.

If there was nothing more to this system, it would be something special; but Definitive Audio has gone the extra mile to extract really impressive results from already very promising components. The Sound Organisation table is enhanced by the addition of Living Voice Mystic Material isolation platforms. These are sheets of carbon-fibre and other materials, supported by four cones which themselves rest on the Sound Org's MDF shelf. Definitive suggests that the point of contact should be diffused with felt-coated pennies.

All manner of cables have been used to bring out the best in the system. Most interesting are the relatively humble Hitachi LC-OFC speaker wires (none finer, in the opinion of Definitive Audio's Kevin Scott) and the Living Voice LVC1 interconnect. The latter has flying earth leads at both ends of the cable, so optimum earthing can be configured for each system. If all of this sounds like so much snake-oil, every change is clearly audible during audition.

And it is when demonstrated that this system really begins to come alive. The whole package creates a sound that moves air and emotions in equal measure. There is a perfectly natural sense of scale, real-world dynamics and 'musicians-in-the-room' presence.

All of these phrases are grossly overused in hi-fi reviewing, but are wholly justified here. Like the best concert venues, this system favours no musical genre over another. Due to the high sensitivity of the speakers, they may be less 'neutral' than low-efficiency designs, but most speakers sound dull and lifeless by comparison, and the

speakers are certainly not as coloured as the Rehdeko RK115a, for example.

This is not a system which will delve into polite detail or imagery. Instead, it is bold and expressive. Stereo imagery is abundant and surprisingly expansive, but that is not the point. You are less aware of the soundstaging because the sound is so solid and natural. Just like a concert!

Too many hi-fi systems become pigeonholed quickly, because reviewers listen to only two minutes' worth of music from each disc that they play. This rig takes a more disciplined approach to its listeners: it demands that every album is played in full. This reached dangerous proportions when I played some hypnotic Indian raga music: if it had not been for the intervention of a house-mate, I would still be sitting cross-legged on the carpet.

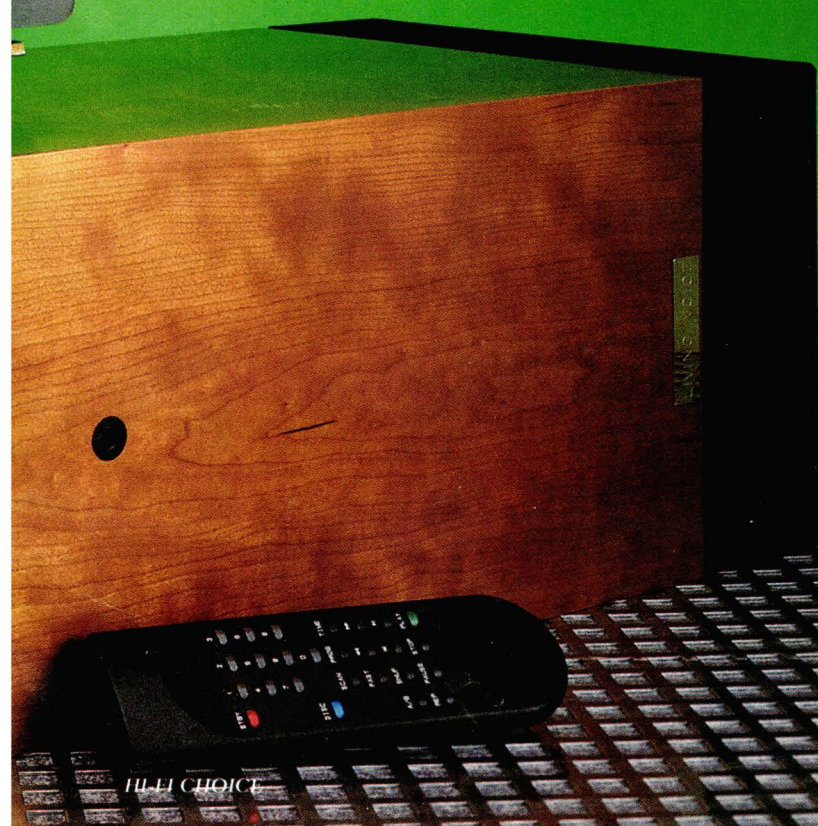
Regrettably, few hi-fi dealers stock this combination of components, so potential purchasers will have to travel to hear this system. Still, that will shake out the serious music fans from the Boys' Toys collectors. I would never suggest buying a system without listening to it first, but I would entreat you to audition this one. In 10 years time, you'll still be grateful!

The hardest thing here is not to find specific grounds for praise or criticism, but to express just how good this system is. Perhaps the easiest way is the most honest: I have heard far too many conventional systems that cost in excess of £40,000, which exhibit only fractional amounts of this cleverly-matched outfit's musical dexterity. I have encountered few systems that sound as good as this one — at any price. It just goes to show that in hi-fi, the whole is much greater than the sum of the parts.

Definitive Audio ☎ (0115) 981 3562

THE SYSTEM

Helios Model 3 CD player	£699
Musical Fidelity A2 integrated amplifier	£500
Living Voice Auditorium loudspeakers	£1,500
Living Voice LVC1 interconnect	£189
2x Living Voice Mystic Material isolation platform (@£83 each)	£166
2x Living Voice LVPC power cable (@£99 each)	£198
4m Hitachi LC-OFC bi-wire loudspeaker cable	£162
Sound Organisation Z021 equipment table	£78
Total Cost	£3,492



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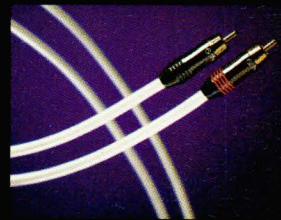
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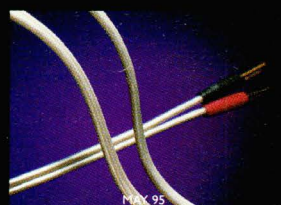
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APRIL 96



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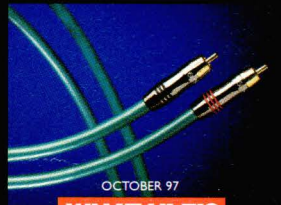
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COMPETITION

MIX 'N' MATCH

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Vestax, known since 1977 for the most innovative musical instruments and DJ/remix equipment, has created a new landmark. A product that bridges the gap between people who make music – and those who listen to it!

The new Active Audio AA-88 system is nothing less than a creative music centre for the 21st Century. It's a cross between a hi-fi system and a fully-fledged DJ mixing outfit, incorporating CD player, MiniDisc recorder and FM tuner. The bonus is, it allows the user to mix these sources with sliding faders, just like a pro DJ!

What's more, there are two phono inputs and four other line inputs, which permit homeboys to throw down wicked multi-media mixathons, all in the comfort of their own bedrooms.

In addition there are two microphone inputs, a crossfader, three-band EQ (tone controls), speed adjustment, as well as joystick-controlled transport functions. The CD and MD drives can be locked together for digital copying of CDs, and while there is a built-in power amplifier, users may also hook up to hi-fi or studio monitoring systems using line-out sockets. Write in and enter today!



The AA-88: chic in the lounge; cool in the bedroom studio.



Vestax's AA-88 system has a CD player, MD recorder, FM tuner and phono inputs. Note finger-friendly joystick for the ultimate in 'digital' manipulation!

HOW TO ENTER

Answer the question below by circling the correct answer, then fill in your name, address and daytime telephone number in the spaces given below. Please remember to tell us whether you are over 18 years of age.

POST THIS ENTRY FORM TO:

Hi-Fi Choice Competition (CHFC804A)
Bradley Pavilions,
Bradley Stoke North,
Bristol BS12 0BQ

All entries must arrive by First Post, Tuesday April 23rd, 1998.

THE QUESTION

What do the initials AA stand for, in the Vestax AA-88?

- a) Automobile Association
- b) Audio Aerobics
- c) Alcoholics Anonymous
- d) Active Audio

YOUR DETAILS

Name _____

Job Title _____

Company Name _____

Address (inc. postcode) _____

Day-time Telephone Number _____

Please tick here if you are under 18.

Please tick here if you do not wish to receive any further information about other products or services.

Please tick one only of the following:

Are you a current subscriber? **OR**

Are you a regular reader? **OR**

Are you an occasional reader?

COMPETITION RULES

- The Closing Date for this competition is Thursday April 23rd, 1998.
- Winners of the Vestax competition will be judged from all correct entries submitted, and drawn at random after the Closing Date.
- Winners will be notified by post.
- The Editor's decision is final and no correspondence will be entered into.
- The Vestax competition is not open to employees of Dennis Publishing Ltd, Vestax (Europe) Ltd, nor their suppliers, agents or associates.
- We regret this competition is open to UK residents only.
- No cash alternatives will be offered.
- We reserve the right to substitute alternative prizes with equivalent value to those shown, in the unlikely event of stock being temporarily unavailable.
- By entering the competition you agree to be bound by the rules.
- All entries must be on this official entry coupon. If you do not wish to cut your magazine, you may send a photocopy of the page instead. Please note: only one entry form per household.

CHFC 804A

CONGRATULATIONS TO THE FOLLOWING WINNERS OF OUR JANUARY 1998 RUARK COMPETITION.

THE CORRECT ANSWER WAS:

b) Full magnetic shielding.

■ One First Prize, comprising a pair of Prologue One, one Dialogue One, and a pair of Epilogue, goes to: ● J Leddy of Dundee.

■ One Second Prize, a pair of Templar II, goes to: ● R Klein of London.

■ Four Third Prizes, each a pair of Epilogue, go to: ● D Ratchford of Staffs, ● M Pullen of W Sussex, ● D Ashdown of W Sussex,

● B Monahan of Edinburgh.

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Ear Waxings

Digital Audio Disc is a new music-storage medium, designed by audiophiles for audiophiles.

Jason Kennedy compares it with CD and finds that DVD players are about to become hot property. . .



Panasonic DVD-A350
Offers pretty pictures and, it appears, a quantum-leap in digital sound quality.

96/20-bit Pioneer DV-505 (£450) and a 96/24 Panasonic DVD-A350EB (£700), with a Marantz CD-63mkII KISig (£500) to serve as a mid-price CD reference. These were fed through a Pioneer A-300R Precision amp (£400) into Max's legendary Sir Galahad speakers (alas no longer in production).

We played back the first DAD at 48kHz, and then moved up to 96kHz, and the difference was not subtle. However, much more staggering was the contrast between CD and DAD: it was like the difference between a decent CD player and a high-end turntable. Away went grain and harshness; in came depth, bandwidth, effortlessness. One of the DAD titles, *Pulse* (Classic Records DAD 1002) contains extraordinary delicate percussion effects which were inaudible on CD.

More intriguing still is the fact that we achieved these impressive results even when comparing ordinary 44/16 CDs between the DVD Audio players and the Marantz. The latter is a fine player, but if the first non-audiophile DVD Video machines play CDs as well as the ones we tried, it's not outrageous to expect that high-end DAD players will surpass even exalted CD products.

This is a moot point. It's unlikely that the record industry will be quick to produce DAD software. Like DVD software, it is not backwards-compatible with current CD players, so is unlikely to describe a steep uphill sales curve. This means mainstream record retailers will be slow to stock DAD, so early adopters will rely on audiophile record labels to provide material.

However, perhaps by virtue of their high-resolution DAC architecture, DVD Video players handle ordinary CDs so well that users needn't wait for DVD Audio/DAD software to exploit such products usefully.

There is still the question of DVD Audio and SACD. The former is but a dream; the latter has backwards compatibility on its side (see feature in *HFC* 175), and heavy-weight industry backing from Sony and Philips. DAD has an uphill struggle.

We're planning a formal test of DVD players, to judge their absolute quality by comparison with today's best CD players. Until then, readers might think we are suggesting that potential CD-player purchasers wait until the format fog clears. However, at this stage, like Urquhart in *House of Cards*, we couldn't possibly comment. . . ▲

Future generations may well recall the 1998 Las Vegas CES as epochal. This year's show hosted a press conference given by Classic Records, for a new, disc-based, genuinely-high-fidelity music storage medium which is available right now. Just as journalists are taking seats to observe the growing debate between the DVD consortium (with its proposed DVD Audio format) and the Sony/Philips axis (with SACD, Super Audio CD), a bunch of American high-enders have upset the format cart, with an admirably simple solution to the quest for a serious digital format.

This format is called DAD (Digital Audio Disc), and brings to bear DVD's 96kHz oversampling, 24-bit word-length capability on purist two-channel stereo — an audiophile's dream format. DAD uses a subset of the DVD Video specification, so the discs should play on any DVD Video player. Suitable products, realistically priced like the £700 Panasonic DVD-A350, are available now. Only the restricted availability of software is limiting the progress of DAD, since only a handful of audiophile labels are producing suitably encoded '96/24' discs.

This format owes its existence to Kevin Halverson of Muse Electronics, Michael Hobson of Classic Records, Jeff Kalt of Resolution Audio, Charles Hanson of Ayre Acoustics and David Chesky of Chesky Records. Also involved are Conrad-Johnson, Cinram and Bel Canto Designs. The DAD encoding system was created by Kevin Halverson and Jeff Kalt. Early software samples are being produced by Classic Records.

Rather than asserting ownership of the

DAD format and sub-licensing it, the above-mentioned progenitors are hoping to maintain an open format, in the hope that this is the best route to a fully-fledged medium.

There is a suggestion that the hardware manufacturers are trying to restrict the format to the high end, by inferring that DAD discs cannot be replayed without specific DAD hardware. As DVD Video players are mass-market products, I'd be surprised if audiophile-engineered products didn't improve on them. However, Sony, for example, makes great claims for the hi-fi sound-quality of its new DVP-S715 DVD player (see *Update*, p6), and insists that it will deliver full 96/24 resolution.

Also optimistic are claims that DAD hardware will play DVD Audio discs — the latter is far from being an agreed standard.

In the frame

Reviews Ed Sircorn and I have compared DAD software with conventional CD versions of the same recordings. This was courtesy of Max Townshend, the man behind Seismic-Sink-Stand-purveyor Townshend Audio. He's already a DAD convert, and is in the process of setting up a DAD Exchange to sell the software (Web users, check out his site at <http://ds.dial.pipex.com/townshend.audio/>). Also present at this session was former *Hi-Fi Choice* editor John Bamford, now Product Information Manager at Pioneer. The software, from Classic Records, comprised DAD and CD discs, mastered from identical analogue sources, plus LP versions of the same material cut at 33 and 45rpm).

We compared the two digital discs on a

Paul Miller's Oasis of Sanity

Paul Miller explains why it is important to choose a speaker cable on the basis of its measured performance, not just the colour of its wires.

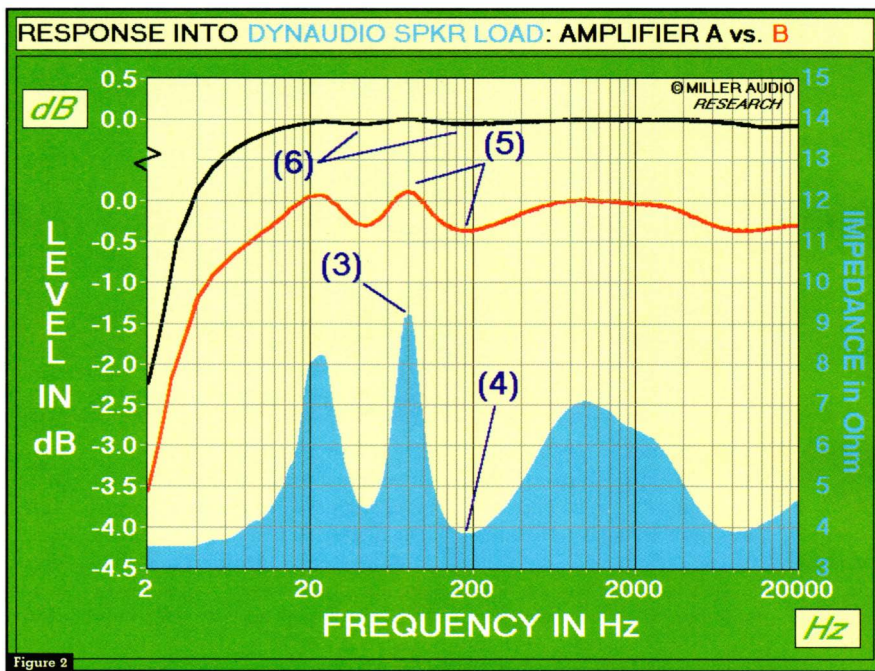
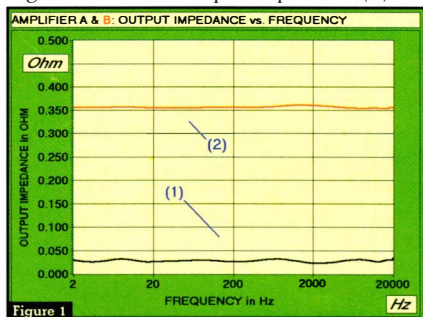
This month I continue my investigation into the interface between hi-fi amplifiers and loudspeakers. Last month I demonstrated that the characteristics of a typical 'real-world' loudspeaker are a long way removed from those of the eight- and four-Ohm resistors used in laboratories to test amplifiers.

In reality, the amplifier 'sees' a load whose mean value might be close to eight Ohms. However, this will swing from many tens of Ohms to just a few in response to reflex-port and driver resonances, crossover networks and the reactance (capacitive/inductive effect) of bass and treble drive-unit coils.

Last month I also showed that the vicissitudes of this load must also be judged in parallel with the sensitivity of a loudspeaker design, for a highly sensitive speaker with a difficult load may still require only a handful of Watts from the amplifier to generate an appreciable sound level. Unlike the eight- and four-Ohm test loads, the speaker load is typically *reactive*, meaning that the current and voltage demanded of an amplifier are shifted out-of-phase. This is the so-called 'phase-angle' that I have mentioned in past loudspeaker Lab Reports, but I'll explore this in greater depth next month.

FIGURE 1: THE DIFFERENCE BETWEEN AMPLIFIERS

For now I will examine how an amplifier's frequency response can be affected when it is driving 'real world' loudspeakers. For experimentory, I obtained two samples of Talk Electronics' new monoblok power amplifier, the Tornado 5. These are identical in every respect save one: Amplifier A has a low 0.028 Ohm output impedance (1), while Amplifier B has been modified with a higher 0.36 Ohm output impedance (2).



The plot shows that these output impedances remain uniform with respect to frequency. A typical batch of integrated amplifiers from *Choice* tests would have mean output impedances from 0.01 Ohm to 0.2 Ohm, for example, increasing beyond roughly one Ohm for a typical valve amplifier.

FIGURE 2: WHY LOW OUTPUT IMPEDANCE MATTERS

When driving a fixed eight-Ohm load resis-

tor, both of our Tornado 5 amplifiers demonstrate the same flat response from 20Hz to 20kHz (within 0.05dB). However, driving a 'real' loudspeaker at the same one Watt level — the Dynaudio Audience 5 from this month's group test — prompts a difference in the response of the two amplifiers. It's also clear that the 'wobbles' in their response(s) are a reflection of the loudspeaker's impedance curve, plotted in light blue.

At 80Hz, the speaker reaches its maximum impedance of 9.2 Ohms (3); and here Amplifier B (red trace), with its 0.355 Ohm/80Hz output impedance, will experience a drop in voltage of 0.33dB. At 185Hz the impedance falls to just 3.8 Ohms (4) where Amplifier B will suffer a loss of 0.78dB. Therefore, the *variation* or 'wobble' in its response (5) from 80Hz to 185Hz should be 0.78dB-0.33dB or 0.45dB, which is very close to the 0.5dB measured in practice. The small *difference* between theory and practice is caused by the finite impedance of the cable inbetween, and this is reflected in the very small variations in response (6) seen with Amplifier A (black trace).

Because Amplifier A has a low output impedance, it is proportionately less susceptible to variations in the speaker's impedance



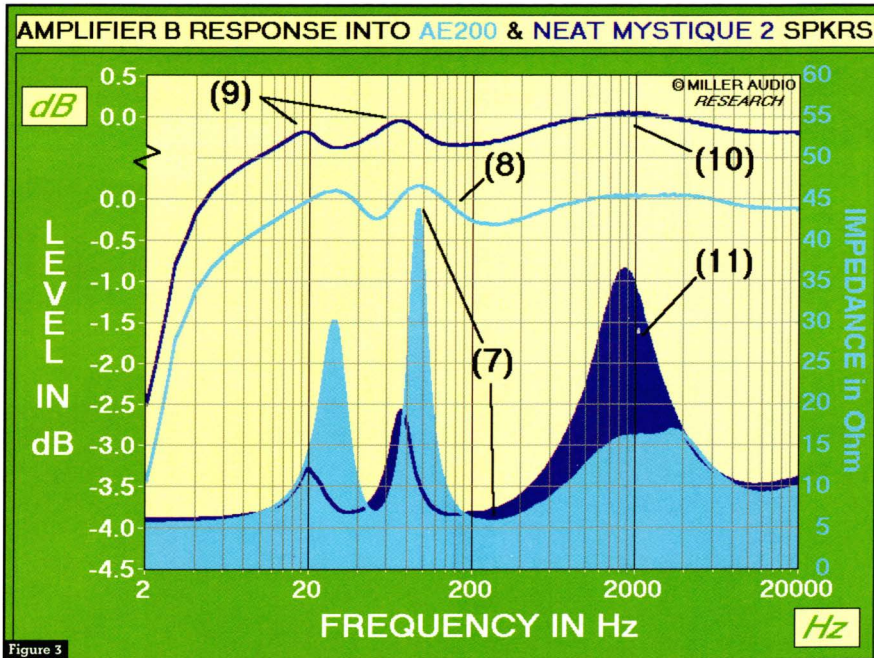


Figure 3

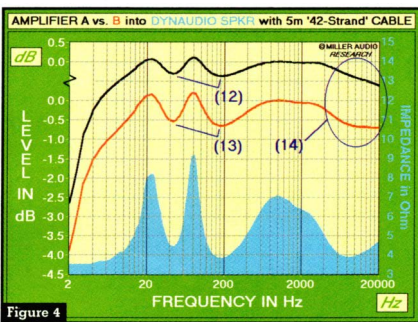


Figure 4

trend than Amplifier B, provided it is connected to the speaker with a low-loss (low resistance and inductance) speaker cable. We'll return to this subject in a moment.

FIGURE 3: HOW LOWER OUTPUT IMPEDANCE PROVIDES A SMOOTHER RESPONSE

To prove the point, this plot shows Amplifier B (with its high output impedance) driving

the Acoustic Energy AE200 (light blue traces) and Neat Mystique 2 (dark blue traces) speakers, also from this month's group. Here we see a similar 0.5dB variation in response (8) due to the difference in impedance (7) between the speaker's system resonance (44 Ohms) and minima (5.7 Ohms). The Neat Mystique 2, by contrast, has a reduced impedance swing at low frequencies and this is mirrored in the smaller response variations (9) suffered by Amplifier B. However, there's now a slightly greater emphasis of the presence region (10) thanks

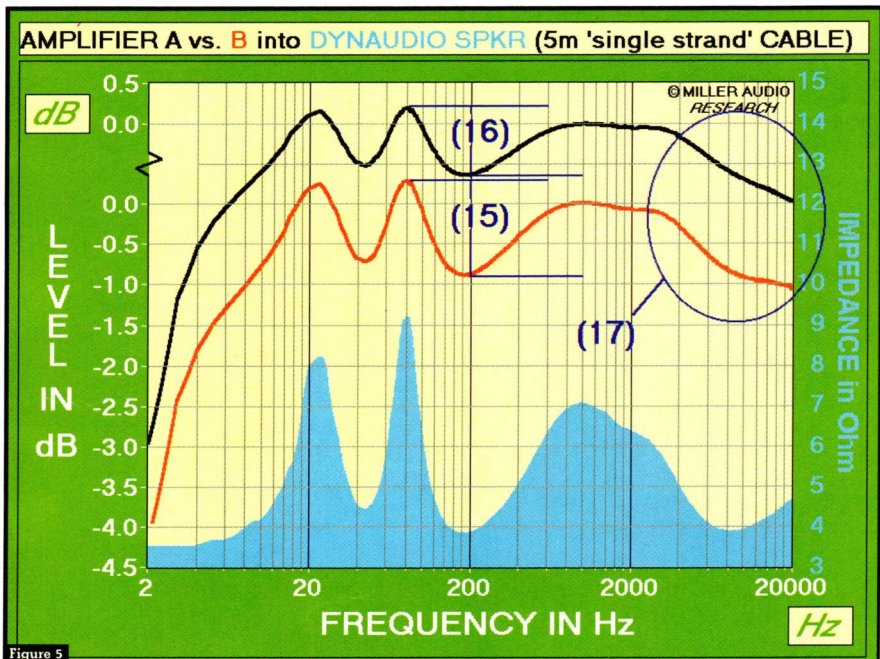
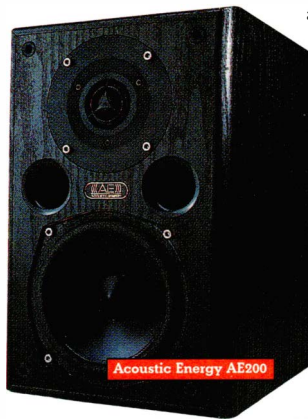


Figure 5

to the Neat's bolder impedance swings at higher frequency (11).

FIGURE 4: HERE'S WHY SPEAKER CABLES MATTER

It should be evident by now that there is a clear relationship between the output impedance of an amplifier, and the sensitivity of its frequency response to the swings in impedance imposed by a 'real' loudspeaker. In this regard, a hi-fi user's choice of loudspeaker cable brings a new dimension to the amplifier/speaker interface.

In this example you will see that the moderate series resistance of a universal stranded cable like QED 42-Strand (and facsimiles thereof) will dissipate many of the advantages promised by low-output-impedance amps like model A used here (black trace).

When it is driving Dynaudio's Audience 5, the response variations through bass and midband frequencies incurred by Amplifier A are almost identical to those seen with Amplifier B when it is used with a low-resistance cable (refer back to Figure Two). This is because the 'source impedance' of the amplifier now includes the extra resistance of the cable as 'seen' at the loudspeaker.

Amplifier B, plus QED 42-Strand, now exhibits larger amplitude response variations (13) because its high output impedance is increased still further by the resistance of the cable. Despite differences in amplitude, the 'shape' of these response variations remains constant between Amplifier A and B. That is, until we reach high treble frequencies where there's a marked departure in the relative response of both amplifiers (14).

FIGURE 5: THIS CABLE MAY INDUCE DROWSINESS IN YOUR HI-FI SYSTEM

This anomalous behaviour in the treble region is emphasised if we use a single-strand, spaced, solid-core cable between our amplifier(s) and the loudspeaker. Here, and despite obvious differences in the amplitude of the LF response variations — 0.85dB for Amplifier A, black trace (16); and 1.2dB for Amplifier B, red trace (15) — both amplifiers show an almost identical 1dB loss from mid-band to treble (17).

In practice both effects (14) and (17) are caused by the series inductance of the speaker cable which increases the overall impedance at higher frequencies. It's another factor in determining the overall 'output impedance' of the amplifier as measured at the loudspeaker and has an impact on the final response of the amplifier/speaker combination.

Now you know why we consider measured performance such a valuable part of our speaker cable assessments. Look out for more tales from the interface next month. ▲ Do you have a subject matter for the Oasis? Please contact P.Miller via E-mail on 100576.3021@compuserve.com



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THE CONCERT 8 - A GREAT ORATOR FROM **Jamo**[®]

The Jimmy Hughes Experience

Jimmy Hughes wonders why he heard more pronounced sound-quality differences between hi-fi components in the '70s. Is it because of radio frequency pollution?

With the public acceptance of surround sound limited by the inconvenience of accommodating five speakers, there has been great interest in claims that two loudspeakers will give a full surround sound effect. What we need is a system able to create a convincing sense of space, width, and depth with standard stereo.

I'm not just talking about being able to place voices or instruments at left or right extremes (though that's vital), but at specific points between, behind, and even at times beyond the speaker boundaries. Ironically, the first test for a stereo system is to produce a narrow, clearly-defined centre image on a mono source; if it can do that, it should be able to do everything else.

Memory is terribly unreliable when it comes to sound quality. But pin-point-sharp stereo imagery characterised every system I owned in the '70s. I may be wrong, but my recollection is that the stereo I heard then was more vivid and precise than much of what I hear today. In the '70s I could hear the slightest change of position; today, I find most systems relatively vague and imprecise — even expensive ones.

I remember a blockbuster synthesiser LP from 1973 called *Space Experience* by John Keating on EMI's Studio 2 label. The recording was almost gimmicky, with wide stereo separation and plenty of movement as synthesiser lines were panned across the stereo soundstage. I had two copies of this LP, the standard stereo and an SQ quadraphonic remix, and they sounded totally different.

The quad mix restructured the soundstage completely, placing instrumental lines in different planes, while altering balances and perspectives. I'd never realised how much a recording could be changed by remixing. Yet when I hear both LPs on many modern systems, I'm disappointed. The difference between discs isn't as great as it once used to be. The basic sound is still good, but the contrast isn't as wide — ironic, given the improved standards of today's equipment.

This business of vivid stereo has bugged me since the mid '80s. The impact of stereo in the '60s was spectacular. Within a few years mono was eclipsed and it became very difficult to sell mono hi-fi systems and mono LPs. This happened because the perceived

difference between mono and stereo was vast; once you'd heard stereo there was no going back. It was like the difference between colour and monochrome TV.

Today, I think most hi-fi dealers would be hard-pressed to convince customers that stereo was a big improvement over mono. The difference doesn't seem to be as big as it was once. I think this proves that modern systems somehow produce less vivid stereo than their counterparts of 20 or 30 years ago.

Why is this so? Equipment in the '60s wasn't superior to the gear we use today, and the vivid stereo I enjoyed in the early '70s was not achieved using expensive gear — quite the reverse. It was almost as if environmental conditions then somehow made it easier to derive optimum performance from whatever piece of equipment I was using. Could it be that increases in electromagnetic radiation and RFI (radio frequency interference) are having bad effects we don't acknowledge?

I wouldn't have thought so, but then I tried Kimber mains cables — see last month's *Hints & Tips*. These cables claim to filter out RFI, thereby giving cleaner mains. When I

tried Kimber, I noticed a big improvement in the way the system imaged. Suddenly, the sound was more three dimensional and holographic-sounding. I felt better mains cables might improve detail and dynamics, but I was surprised by their effect on imaging.

The RFI monster

Since the early '70s, we've witnessed greater levels of RFI in our daily lives, deriving from the increasing use of microprocessors and portions of the radio-frequency spectrum. Experts disagree as to what's happening and why. But because Kimber mains cables produced such a dramatic effect, I wondered if the disappointing stereo so often heard today is actually due to an excess of RFI rather than problems with equipment or recordings. Reduce RFI and suddenly you're hearing what the equipment can do. If so, perhaps it explains why systems in the '60s and '70s seemed to image better.

Related to this is the subjective 'glass ceiling' that seems to limit CD performance to a certain level. It's frustrating when an exotic CD player or DAC sounds merely good when it might have been outstanding. Is there a design fault in the equipment, or is it CD's 'limited' 16-bit 44.1kHz specification?

Like many people, I originally thought poor CD sound was due to limitations in the original specification. Now I'm not so sure; at its best CD can be extremely good. Even if the original spec is limited, perhaps it's less of a constraint than once supposed.

Perhaps subjective limitations are independent of absolute performance standards.

Is there something invisible limiting the full sonic potential of our hi-fi systems? Dispelling the magic, dulling down the music? I don't know if RFI is 100 per cent to blame, but having tried the Kimber mains cables and heard their effect, I feel certain RFI's a bigger problem than most of us have acknowledged. ▲



Illustration: Brett Ryder

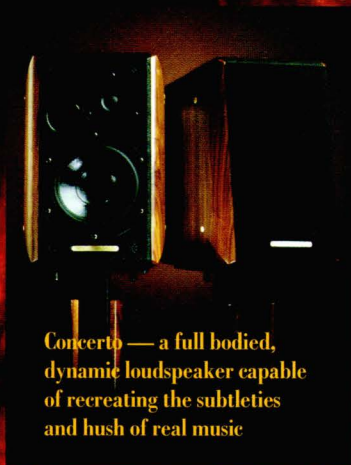
Musical Instruments

Sonus Faber loudspeakers are worked with the old world craftsmanship of the musical instrument maker. Ultimate expression of this craft is the fabled **Guarneri Homage**, a unique lute-shaped speaker with the strong tonal personality of a Guarneri violin.

Guarneri was a 17th century Cremonese master violin maker whose instruments were intensely sculpted acoustic masterpieces characterised by a unique ability to combine tonal strength and full bodied sound with sweetness. This overriding passion for tonal character and dynamic range is a feature of all **Sonus Faber** speakers. To this musical passion is brought modern materials technology and a listening room 'laboratory' to create a family of products true to a musical heritage yet based in today's science.

Baby of this family is the **Concertino**. Its cabinet with solid walnut sides, insulated with non-resonant material brings new meaning to the expression 'substantial'. Ken Kessler reviewing the Concertino (HFN&RR 3/96) referred to it as 'a small speaker for grown-ups' and concluded that 'it's one of the least expensive introductions yet to the joys of "real hi-fi"'. What Hi-Fi (8/96) wrote of the Concertino: 'considering their size they deliver bass of stupendous power, speed and accuracy'.

The bigger **Concerto** two-way was described by Alvin Gold (HFN&RR 4/97) as 'a truly



Concerto — a full bodied, dynamic loudspeaker capable of recreating the subtleties and hush of real music



Concerto Grand piano — a speaker of real stature with extended bass and presence, finished in stunning piano black

remarkable loudspeaker'. He praised the 'exquisitely refined and articulate midband' before concluding 'listening through the Concerto was like listening through an open window. Music sounds completely unmanipulated and utterly clear with a sweetness, purity and a sense of presence...all sense of artifice simply vanished'.

Jason Kennedy (Hi-Fi Choice 4/97) simply said 'an admirable design that achieves its sonic goals and looks beautiful'.

After many successful years the popular **Electa Amator** is revised and appears in MkII form with a revolutionary new cabinet. As exciting comes the news of a Sonus Faber integrated amplifier — the **Musica** — so you can now hear how the Sonus Faber designers listen to their own products.

Sonus Faber has also introduced a floor-standing speaker the **Concerto Grand piano** — indeed it has all the physical and musical presence of a concert grand. Ken Kessler (HFN&RR 5/97) found it 'an odd but delightful blend, a small speaker's energy and vim with a large speaker's authority'. He even christened it 'a perfect rock speaker for the headbanger who want the energy and levels the music demands, minus any rough edges'.

Which just goes to show that what can recreate the sound of a Guarneri can recreate the sound of a Gibson!

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Personal Messages

Paul Messenger frightens his neighbours while finding out whether some Watts are more equal than others. Plus: the mono revival starts here!

In last month's column I discussed Musical Fidelity's big bruiser: a line-level-only integrated amp, the A1001. I mentioned that its prodigious power output capability could extend my perspective on loudspeaker reviewing, especially with low sensitivity designs.

MF's Antony Michaelson has talked of the A1001's '300W' output, and while I'm not equipped to measure amplifier power delivery, our Technical Editor, Paul Miller, did just that in *HFC 172*. According to Paul the A1001 will crank out 275 Watts through the midband into eight Ohms, and 420 Watts into four Ohms (both channels driven). Anthony's claim was close to the mark.

Theory and calculation suggest that the A1001 should offer around five dB of extra headroom over my regular Naim kit, as well as a very respectable alternative sound quality flavour. But theory and practice don't always go hand in hand where amplifier power and loudness capabilities are concerned, as many a satisfied valve-amp user will testify. My parting shot last month was to ascertain how that theoretical five dB translates into practical effect.

The test was simple. I chose a couple of appropriately heavy tracks (it would be dumb to try this with chamber music), and pulled in the Audio Spectrum Xanadu speakers (reviewed on p49), whose sensitivity is low enough to prevent deafness when cranking the A1001 to the max. Furthermore, they present a theoretically easy load and very high power-handling capability. I started with side one of The Chemical Brothers' *Dig Your Own Hole* (on vinyl), and graduated to the Fun Lovin' Criminals' *Come Find Yourself* on CD.

Having checked that the neighbours were out, I sat back, sound-pressure-level meter in hand, and pumped up the volume, starting with the Naim NAP135 power amps. It's not easy to tell when a Naim goes into clip, but I kept going until it started to sound unpleasant, then backed off until the unpleasantness seemed to have gone — not scientific, but fairly practical. The meter (C-weighted scale, about four metres away) was peaking at around 101dB.

I did some re-wiring and repeated the procedure with the A1001. It didn't get unpleasant in the same way as the Naim; instead, there came a point where the speaker bass unit emitted a crack (as the voice coil bottomed-out). I backed off to below the 'crack' point, looked down to check the meter, and was surprised find almost the same loudness reading. There couldn't have been more than half a dB in it.

I'll admit I was quite surprised. I'd expected the enormous A1001, with its twin 700VA transformers, to offer some advantage over the 70-Watt-rated Naims. I guess it's all to do with how an amplifier behaves as one approaches its maximum output: the smaller Naims with their tightly-regulated power supply disguise their limits better than the larger-but-looser MF, sufficiently so as

was virtually the same as before, with the Naims hardening up and compressing in the midband, while the MF started losing control at the bottom end. Once again, there wasn't more than half a dB in it.

The upshot is that, even though I still find the big MF very pleasant company, I'll have to look elsewhere for an extra 5-6dB of amp headroom. More seriously, perhaps, this highlights a need to find ways of specifying amplifier power which have rather more 'real-world' meaning than Watts.

Mono magic

30 years and some ago, the Beach Boys released their classic album *Pet Sounds*, and I bought a copy. A friend persuaded me to sell it six months later, which I did (probably to finance *Highway 61 Revisited* or some such — not an uncommon practice among impecunious students at the time. The guy from whom I bought *Highway 61*, meanwhile, used to blow his entire grant cheque on a new record collection at the beginning of each term, and then sell off LPs in order to eat!)

A decade or two later I picked up a secondhand copy of *Pet Sounds* at a record fair. Its condition was fine, but the sound and mix were very disappointing on my now quite decent hi-fi system. So I assumed I'd got lumbered with a 'third-world pressing', gave it away, and went back to *Surf's Up*.

Last year EMI celebrated its centenary with raft of prestige reissues on 180gm vinyl, so I shelled out £18 for a new *Pet Sounds*, only to find it sounded as bad as No. 2 (and probably No. 1 too for that matter: my record player of the era wasn't good enough to discriminate).

I mentioned this to Roy Gregory of Vinyl Demand (☎ 01425 654545), who asked whether I'd heard the mono version, available at £22 on the DCC Compact Classics label (all-analogue, 180g virgin vinyl etc). He sent me a copy and it sounds absolutely wonderful. You instinctively know when something is right, and this displays none of the phasey, murky qualities of the stereo versions. Apparently *Pet Sounds* was originally mixed down to full-track mono, Phil Spector style; presumably the stereo versions were 'electronically processed'. I wonder how many other classics from that exceptionally creative period have been similarly mistreated and misunderstood? ▲



to negate the considerable difference in measured power output. (But surely the limitation experienced here was as much in the loudspeaker as the amplifier? —Ed.)

The investigation was far from complete. It was time to change the speakers, to dig out the Wilson benesch A.C.T. Ones — and maybe find some cotton wool for my ears!

I obtained similar results with this speaker, though at least practice followed theory in one respect — the extra sensitivity of the larger A.C.T. One was very closely translated into extra maximum loudness (taking into account its rather more demanding impedance); while its greater midband transparency made it rather easier to hear the break-up point. The behaviour at that point

Write on!

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LETTER OF THE MONTH

Better go Dutch

Just before Christmas I purchased a Philips CDR 870. My initial enthusiasm turned to disappointment when it became obvious that there was a discrepancy between the sound of a digital source and the recordings made thereof. The unit had been well received by other magazines; maybe it required a long burn-in period. At this point I read your review of the '870 in *HFC* 174.

I was relieved that a competent magazine had shown the machine to be flawed with jitter, and had brought the matter to the attention of Philips. According to the 'Editor's Comment' within that article, Philips had reacted positively and claimed that "a revised design will be in production shortly."

I contacted Philips UK, hoping to clarify arrangements for replacement or modification of units which had already been sold. However, despite being aware of your article, Philips in the UK has no intention of modifying the CDR 870. In the company's opinion, a modification would not improve sound quality, other than enhancing stereo imaging a fraction. I was told that John Wilson, the Product Manager, has opined that no modification was needed; and consequently none will be made.

In view of this hopeless response, I can only hope that your lab report findings were directed to the Dutch division of Philips, and that it has revised or is intending to revise the product.

Mr A Massey, Baguley, Manchester

Nick Thomas, PR for Philips, replies... "The issue of jitter in the CDR 870 was brought to our attention by Hi-Fi Choice some weeks before issue 174 was published. The matter was referred immediately to the Philips Centre in Croydon and to the European HQ in Eindhoven.

"Chris Hannes, System Owner of CD Recordable, visited the UK and met with HFC Technical Editor Paul Miller. Consequent to that meeting and the information he received, design modifications were made immediately on the CDR 870 production line.

"Thus we are surprised that Mr Massey noticed such an obvious difference between the sound of digital sources and their recordings. It may be that the machine purchased was a very early sample. Certainly this has been the only incidence of a consumer raising this problem with Philips in the UK.

"We must stress that since we have taken action to remedy the problems identified in Paul Miller's Lab Report, we believe it is very unlikely that any users will be able to identify an audible problem with digital copies made from CD to CD-R.

"However, as a direct consequence of the investigation set in motion by Hi-Fi Choice's findings on the CDR 870, Philips has modified numerous aspects of its circuitry, and is due to launch a new model, the CDR 880, in due course, which will be a replacement for the '870."

A good telling off

As a long-term reader of *Hi-Fi Choice*, I deprecate your arrogant answer to the letter of Albert Guzik (*HFC* 175). He was making a perfectly valid point, as output impedance has a significant effect on overall performance of cables, and this is the sort of thing for which one reads reviews in the more enlightened hi-fi magazines.

I am pleased that you do lab tests as well as your excellent subjective blind listening group tests, and that lately you have included a little more info in such reports.

However, I can see little use for your group average charts. Not only are they useless for comparison of results from a unit in one issue to the next, but frequently they appear to contradict the listening test results. In *HFC* 175 the Audio Analogue Puccini amp got an outstanding review, with mediocre bar charts; the Audiolab 8000 LX vice versa.

Paul Miller's most revealing *Oasis of Sanity* column, in *HFC* 175, concerning the hidden facts behind quoted amplifier power specifications, indicates that in hi-fi there are many more parameters than meet the eye. Why not let him expound on such topics in his group-test lab reports, rather than print the somewhat meaningless group-average bar charts? Or maybe you should let him develop some more useful charts based on absolute figures. A F Barnes, Sunbury-on-Thames, Middlesex

Stan Vincent replies... I share your desire to be objective about hi-fi sound. It is not enough to know merely that a component or

OUR ADDRESS

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We reserve the right to edit all letters. Concise correspondence preferred! All letters must include address and daytime phone numbers.

system has a particular sonic signature; the reason for this character we must attempt to divine. We are fortunate to have as our Technical Editor a guru like Paul Miller, whose unique computerised measurement systems look as deep (if not deeper) into hi-fi components' innards as any facility in the world. But regrettably you are among a minority of readers who can comprehend the technicalities of Paul's findings, which is why we developed the bar-graph system for our group tests, to crystallise Paul's findings 'at a glance' for the more generalist audience that makes up the majority of our readership.

As I have written many times before, you do not need to be an egg-head to enjoy hi-fi, especially not at *Hi-Fi Choice*. We publish our opinions safe in the knowledge that our subjective

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We have banished the dark days of hi-fi reviewing when judgments were made on measured performance alone — our Best Buy and Recommended flags are awarded on the basis only of sound-quality.

However, since there appears to be a hard-core of tech-buffs who desire greater detail about the products we review, we are currently investigating ways of making more detailed information available on our Web site.

Out of sight, not mind

Having purchased your February '98 issue after a long hiatus, I was disappointed to note a serious omission in the Directory — nowhere could I find a mention of Audion and its amplifiers. I have just bought an Audion pre/power combination, to operate between my Voyd and Audio Note AN-J speakers. The power amps are the Silver Night 300B monobloks, which provide a combination of transparency, detail and control that would be hard to match at a similar price. They also look fabulous, and seem well made. Surely these amplifiers deserve to be included in your Directory? Stephen Ganter, Horndean, Hampshire

Stan Vincent replies... On several occasions we have invited Audion to supply us with product information for inclusion in the Price Guide section of our Directory. At present it is declining to do so. We have reviewed Audion products in the past, though — for example, in HFC 137 (December 1994) we reviewed the less exalted stereo version of your amps — the Silver Night SE.

Serious musician, seriously angry

I found your amp review in HFC 175 to be very upsetting, unjust, unfair, untrue, unfaithful, disappointing and not at all serious. To award only three stars to the Bryston B60-R is totally out of order.

Come on, be serious, if you want serious musicians to believe what you talk about in your magazine. Maybe your test



Bryston B60-R

equipment (in particular the Tannoy speakers) was to blame, or just the panel, but I can find no justification. We are all fed up with biased views and unfounded facts and opinions.

I am beginning to believe that your magazine may be inferior to the rest of the competition, including *Stereophile*, *Bound For Sound*, *Inner Ear* and *Stereo*. All these magazines have decent, sensible, proper, fair, true, faithful and pure, unbiased views about the B60.

Please don't embarrass *Hi-Fi Choice* with such very poor, low-class reviews. You don't even understand the philosophy behind the Bryston amplifiers. The same mistake was made with the YBA Intégré. Get your act together!

By the way, I don't have shares in Bryston. P Benson, East Riding, Yorkshire

Stan Vincent replies... You may not have shares in Bryston, but I suspect you may be a very devoted customer. Why else would your letter embody so much dented pride? I refute entirely your allegations of impropriety. All of our group tests are conducted to the highest standards, with each product given every chance to shine. At the end of the day, we judge a product solely on its performance. The only philosophy that we understand is the one concerning good sound!

Amazed and amused (slight return)

After reading Yuval Goldstein's letter (HFC 174) I can only say I too was amused and completely amazed. In his letter he set out to rubbish Alan Sircom's explanation of RIAA circuitry and the function it performs, as enunciated in the review of Linn's Linto phono preamp in HFC 171.

Alan's explanation was completely correct, if somewhat vague. A phonograph record is cut with approximately flat amplitude characteristics. Unfortunately the output of a magnetic pickup (of any electrical generator, in fact) is directly

proportional to the relative velocity between the coils and magnets therein. That is, the cartridge produces more voltage at higher frequencies when the stylus is moving from side to side with greater velocity. This necessitates the use of a filter with a rising bass response. The characteristics of this filter were decided by the Recording Industry Association of America (RIAA), and were set as a standard so that equipment from all manufacturers could be interconnected without unpleasant side effects.

I am not sure where Mr Goldstein received his information — the *Beano* perhaps? What's more disturbing is that you actually printed his letter in the first place. Andrew Ellison, Cambridge

Stan Vincent replies... I welcome this enthusiastic discussion on the true meaning of RIAA. In fact, all contributors to this debate have imparted a few grains of truth.

Mr Ellison correctly describes the frequency-dependent characteristics of a phonographic pickup cartridge — that for a given output signal, low frequency microgrooves must be modulated (ie 'wobbled') much more heavily than those representing high frequencies. (These are the "electro-mechanical curiosities of cartridges" to which Alan referred in his review.)

If LP records were manufactured according to these characteristics, there would be two problems: the storage capacity of a record would be greatly reduced; and the signal-to-noise ratio would be adversely

affected, due to the excessive physical contortions required of the record-cutting lathe and the pickup cartridge.

Website rocks

Yours must be one of the the finest Web sites I have ever seen. Superb "conference" facility, well laid out, and quickly accessible with moderate hardware. Superb.

George Clegg, via e-mail

Website sucks

Why not have a contact e-mail address on your Web site for the person who deals with its content and functionality?

I have been trying for 20 minutes to get info on Marantz amps with NO luck from your site. I won't be back! John Butterworth, via e-mail

A mad world

Is the hi-fi world going mad? Look at the B&W CDM1SE and the Arcam Alpha 8SE in your *Instant System* from HFC 176. Not only do these products sound good, they look good too — thanks to their manufacturers' enlightened industrial design policies. Other marques should take note.

For example, consider the Densen Beat B-100mkII in the same system. What on earth has happened to Scandinavian design? Perhaps Densen should collaborate with Bang and Olufsen to give our eyes as well our ears a treat.

Owen Rigby, Waterlooville, Hants

Stan Vincent replies... At *Hi-Fi Choice*, we believe that the best hi-fi is unobtrusive and easy on



Arcam Alpha 8SE

the eye, to the same extent that it discharges its responsibilities towards our ears. As chance would have it, we are printing a feature this month concerning design in hi-fi — turn to page 30. However, I do not agree with your condemnation of the Densen's styling. Big knobs and chunky black boxes are for me the perfect embodiment of the enthusiast hi-fi ethos.

By reducing the amount of bass recorded onto the LP's vinyl, and boosting the treble, then inverting these characteristics on replay, the physical limitations of the LP replay system are reduced, and the signal-to-noise ratio improves as a consequence. Thus, the

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MANA MOUNTAIN

Is that the tower of power or what? Earl Grey's studio hardware collection takes up more rack space than most.



Brimful of MANA

Phil Strongman discovers how drum'n'bass duo Earl Grey got their studio sound down to a tee — with a little help from the guys at Mana Acoustics. . .

It was three in the morning — a bike from the record company was due at any time. An uneasy quiet hung over the studio. No-one wanted to admit it, but something was not right. They couldn't quite put a finger on it, but there was definitely a missing musical link.

In the closing months of 1997, dance veteran Ron Wells and session bassist Paul Frazer Clarke (aka Earl Grey) were just minutes from completing the mixes of their jazzy jungle epic, *Purveyors of The New Groove*. The album had been keenly anticipated by Worldwide Ultimatum label-owner — and DJ extraordinaire — Carl Cox, as well as Earl Grey fans including Fabio, Goldie, LTJ Bukem and Gary Numan. The pressure to get it right was intense.

Suddenly Wells twigged what was lacking. There was a tiny rhythm sound on one particular track, which he'd heard on his hi-fi rig at home, but now couldn't pin down in the duo's compact Hillingdon studio. The professional studio gear was solid and new enough — Allen & Heath mixing desk, ATC SCM20a active monitors and a Panasonic DAT recorder. Not until Wells spied the ageing table underneath the mixer did he finally realise what the problem might be.

A question of support

The answer wasn't quite manna from heaven — more a case of Mana from Pinner. Mana Acoustics is the now legendary brand of hi-fi equipment isolation platform, devised by company proprietor John Watson in a search to improve the sound of his Linn Sondek LP12 turntable.

Watson created the Mana Reference Sound Table, a symphony of iron, glass and steel which has proved time and time again to dramatically change the sound of even prosaic hi-fi rigs — dramatically for the better, if you ask the numerous customers and hi-fi scribes who swear by the gear. What started as a hobby quickly became a full-time job and is now a thriving cottage industry, which looks set to enjoy a boom if

favourable rumblings from the US convert into hard custom.

Although Mana's products have achieved an enviable cult status, to date this has been among devotees of domestic hi-fi gear. This is why Ron Wells was using Mana supports only in his home music-playing outfit — until he began to wonder whether they might improve the studio sound. So the Earl Grey crew stripped down the studio and rebuilt it using Mana supports, inserting them beneath the ATCs, installing specially-designed wall-mount shelves (soon to be a new Mana product), and even putting a large, customised support beneath the mixing desk. Once these modifications were complete, it was back to square one with the album, which was entirely remixed and, consequently, ended up being an audibly cleaner, stronger set.

"We couldn't believe the difference — we knew it would sound better, but we didn't know it would sound this good," commented an awestruck Wells. You can see — or rather hear — his point clearly: just by removing the ATC speakers from the Mana supports and placing them on an alternative surface, music seems to diminish and even becomes slightly blurred. Undoubtedly, this has helped endow tracks like the duo's *Earls Court (Dreamin')* with such an amazingly melodic bass range — deep, but not distorted.

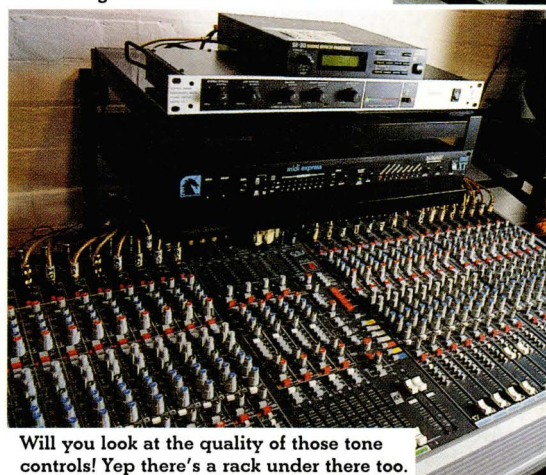
The same cut also showcases smartly clean keyboard touches, many of which can be heard quietly echoing away into the next millennium: such is the depth of the recording. These and many other subtleties, the little touches, are important to the EG lads, especially Wells. He's been a jazz-funk fan for years, revering sounds from the golden '70s when the likes of Herbie Hancock, Weather Report and Donald Byrd first combined the musical dexterity of jazz with the gruff dancefloor punch of funk.

Bringin' it all back home

Having experienced the 'Mana effect' in Earl Grey's studio, the next logical step was



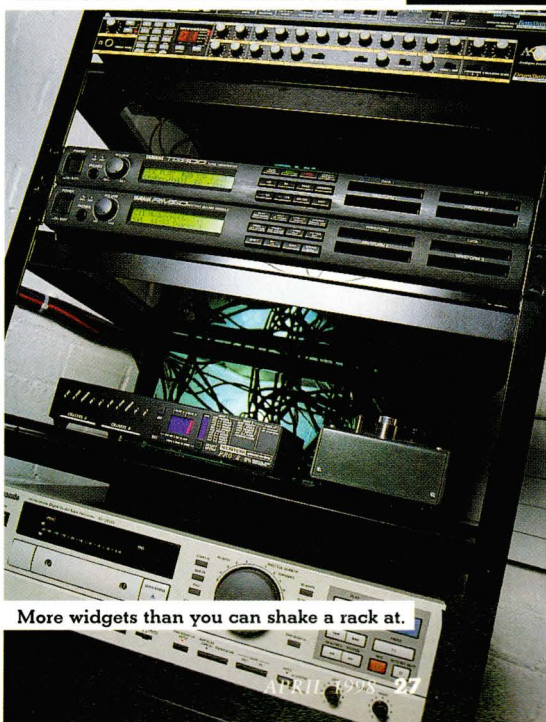
Mana has installed racks for everything, including the ATC SCM20A monitors.



Will you look at the quality of those tone controls! Yep there's a rack under there too.



The Earls at bay. Ron Wells (left) and Paul Frazer Clarke in their Manamixed studio.



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Take a stand: There are 25 separate isolation stages in Ron's domestic listening room!

to compare the sound of the set there with the vibe it generated through Wells's domestic hi-fi rig — which, after all, had helped inspire the final version of the album. After a few hours of persuasion — and a few drinks — Paul and Ron finally led me to the latter's first-floor flat. There, in a modestly-sized (11 x 17 feet) but well-carpeted lounge, resides a pair of massive ATC SCM50a speakers, active enclosures driven by a Naim NAC82 preamp with Super Cap power supply.

Like most Naim users, Wells is fanatical about warm-up time. "I always leave the Naim on, all the time. If there's been a power-cut or some other disaster, then I know that when I switch them on, they're gonna sound OK for four or five weeks, then... bam! They're great again. They need at least one month, minimum."

The cassette deck is a Nakamichi DR3, although Wells admits: "I'd prefer the DR1." A Naim CD2 spins CDs, while another professional Panasonic DAT machine looks after the works-in-progress hot from the studio.

A whole lotta tables

All of Wells's separates are arranged on a 5 Tier Mana Sound Table. So far, so unexceptional. Only when you notice the stands beneath the stands do you realise the extent of this guy's dedication to the cult of sound isolation. The 5 Tier table, for

instance, stands on a staggering 10 Mana Sound Stages. The ATC speakers sit on Mana 50 stands which themselves stand on six Sound Stages apiece. This makes a grand total of 25 isolation pieces supporting a DAT, a CD, a tape deck, a pre-amp and a single pair of speakers.

Overkill? Well, Mana tables start at less than four hundred pounds, but in this case, the support bill was heading towards the three-to-four thousand pound mark. Still, the sonic performance justifies this investment. Had I been blindfolded and told the system had cost twice as much, I'd have believed it without question. Donald Byrd's *Change (Makes You Wanna Hustle)* (Blue Note, 1976) kicked like a live performance. When the veteran trumpeter cuts loose after the second chorus I could really feel the air from his horn — while the sweet end of the keyboards on Chick Corea's esoteric *Leprechauns' Dream* seemed to soar up into the ceiling during the explosive solo.

No anorak required

Wells demonstrated the cumulative effect of adding extra layers of Mana isolation. Every extra Sound Table made a subtle improvement, each one adding depth, width — and in Chick Corea's case, height. Volume also seemed to get a boost. At one point we approached the 116 decibel mark without a hint of distortion.

Despite his manifest obsession with

supports, Wells does not set much store by fancy cables. The rig is laced together simply with the cable that Naim supplies as standard. "I don't go in for all that £900-a-metre cable lark," he explains. "To me that's when you get into anorak territory."

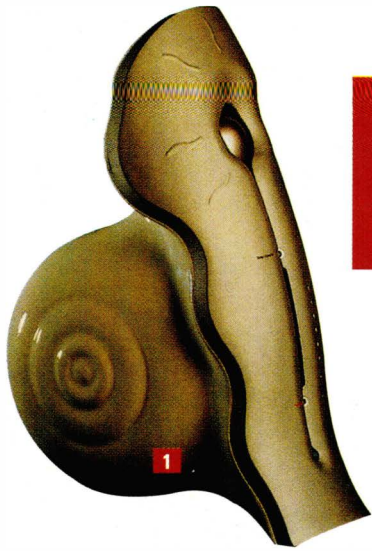
A growing body of evidence suggests cynical recording industry professionals should pay more heed to the hi-fi industry; in particular, to sound improving solutions being developed by music lovers like Mana. This tale just adds further fuel to that fire.

Too many recording establishments still position precious equipment on wobbly Formica-topped tables. When good mics and mixers cost thousands of pounds, surely it's worth investing a proportion of those costs in proven hi-fi tweaks like decent-quality cables, and effective equipment supports that really make a difference to sound.

Mana is not the only company to make hi-fi equipment supports, but to date it is the only one to have forged links with the recording industry; indeed, to have impressed the industry bigwigs on their own territory.

Abbey Road, are you listening?

Earl Grey's *Purveyors of The New Groove* is released on Worldwide Ultimatum records, and the group is touring the UK during the Spring. Tune into their Web site at www.fast-floor.demon.co.uk . ▲



Beyond the Black Box

Designer labels? Only the most aesthetically challenged could be ignorant of them. Our modern-day obsession with namebadges, in every arena from fashion to furniture, has led to matters of design making the difference between commercial success and failure.

In the world of hi-fi, however, the contributions of product designers are largely passed over for the talents of electronic and acoustic engineers. We have seen a recent fashion for 'signature' editions of CD players, amps and speakers — Marantz's Ken Ishiwata series being a case in point — but invariably the paw-print in question is that of the engineer, not the industrial designer.

However, though product stylists operate under a cloak of anonymity, we are seeing increasing evidence of their art in distinctively designed latter-day hi-fi components. Recent examples have included the Audio Innovations Alto amp and CD player, the Blue Room 'Pod' loudspeakers and Musical Fidelity X-Series components.

Let's hear it for the crayons

It's not just inverted snobbery keeping designers out of the limelight. It's a simple fact of hi-fi life that most manufacturers sell their equipment on the back of superior sound quality claims. After all, this is hi-fi's *raison d'être*. However, it would be blinkered to claim that even in hi-fi, looks don't count. Hi-fi is an integral part of most living rooms, and requires more input from the user than, say, a TV set — even if only to change CDs from time to time!

Ironically, budget-priced micro and mini systems are rarely complementary to living room décor, even though most owners buy such equipment because they can't bear the look of hi-fi separates. It's understandable that for many users, hi-fi components should be heard and



Real hi-fi used to be big, ugly, and clothed in matt black. Nowadays, audio ranks with kitchen appliances for styling honours. Jason Kennedy investigates the hi-fi chic attack.

not seen. However, perhaps the look of audio is as much a reflection of national tastes as anything else. Nowadays the popular, ahem, stereotype of a stereo system is a small, light-festooned, black or silver box — a Far Eastern cultural export if ever there was one. I suspect the British love for audio equipment ended with the demise of the wood-veneered radiogram.

Market preferences fuel continuing conservatism in the design of hi-fi components. Seekers after the absolute sound don't react favourably if presented with equipment that doesn't evoke the laboratory test bench. Engineer-designed specialist hardware thus preserves the status quo.

Design-conscious consumers in the mass-market tend to dismiss specialist-manufactured hi-fi as too expensive. Surely numerous aesthetes warmed to the look of the Blue Room speakers and Alto amp, but found their price indigestible. As a consequence, both products have found it difficult to compete in a marketplace dominated by black boxes and imitation wood veneers.

Radical re-styling

Despite this sorry state of affairs, we don't inhabit a world painted solely in black and brown. There are many fine examples of industrial design to consider. When it comes to naming names, you'll find that the looks of many notable products have been fashioned by the same people who designed their innards.

The distinctive cylindrical construction of Musical Fidelity's neat little X Series, for example, was dreamt up by the company owner, Antony Michaelson, and its aesthetic appeal tallies fortuitously with its cost-effectiveness. One aluminium extrusion forms a common bodywork for the whole X range, with variations in front and rear end-caps catering for different applications.



HI-FI PORTFOLIO

- 1-Daewoo concept CD player, 2-Denon Alpha CD transport, 3-Audio Innovations Series 800 Anniversary, 4-Yamamura-Churchill Ariadne, 5-Bang & Olufsen Beocord.



Because of their practicality, cylinders have been a favoured hi-fi housing for some time. Allen Boothroyd, co-founder of Meridian Audio with Bob Stuart, used glazing tube for the company's 1970s' 100 series components, and far from making them look crude, it resulted in a distinctive style that influenced the subsequent 200 and 500 series, as well as Moth's recent ranges.

Boothroyd is now boss of Cambridge Product Design, which drew up plans for the original BBC computer as well as Canon Audio's now-defunct range of speakers, and the SoundBytes minimonitors. He has worked also with the Boston-based design company, Fitch, on the new Harmony system concept from Harman. (This CD/radio/alarm 'hi-fi in a box' featured in our *Update* pages last month.)

In the early 1970s Boothroyd styled a pre/power amp combo by Lecson, whose pre-amp was distinguished by multi-coloured sliders. Whether tastes will ever swing back that far remains to be seen!

Ambrosia for ears and eyes...

Another famous name in British hi-fi design is that of Dr Kenneth Grange, a partner in the West London firm Pentagram Design Ltd. Since the mid-'70s he has been responsible for the unique aesthetics of B&W loudspeakers, though to the 'real world' he is better known for creations such as the Kenwood Chef food mixer and Intercity 125 trains. He was made a CBE in 1984. (See interview in box overleaf.)

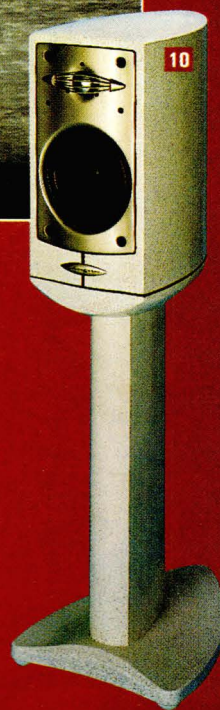
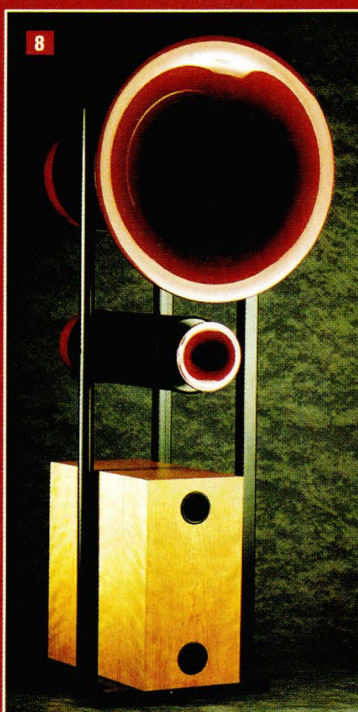
Though B&W's 800 and 600 series speakers might not look particularly radical by the extreme standards of today, Grange's relaxed but exquisitely balanced style has given B&W a unique reputation for blending looks and performance in perfect proportion. Today, the company still calls upon the services of Grange and other design professionals.

Another influential figure is Graham Allen, who worked on the first Arcam Alpha products whilst a practitioner at Cambridge Industrial Design. Allen went on to create the image for Audio Innovations' three product ranges, up to and including the delightful Alto amplifier—a product whose design influence appears to have been considerably greater than its commercial success.

In the early days of the valve revival, about a decade ago now, even Audio Innovations' Series 500 was considered pretty revolutionary. Its exposed valves surmounting a Perspex platform had an architectural quality, conferring modernity on an antique technology.

The subsequent Series 200, L2/P2 et al were equally stylish, if not quite so distinctive. A more orthodox box shape was adopted, to satisfy legislation in certain markets requiring that valves in electrical equipment are recovered completely. This stricture notwithstanding, Allen managed to add style and constructional ingenuity by placing tubular extrusions in each corner of the unit. This styling note has been echoed in recent Wadia CD players.

Designer Morton Villiers Warren has enjoyed a high profile of late. His company, Native, has conceived many of B&W's new products, of which the most dramatic is prob-

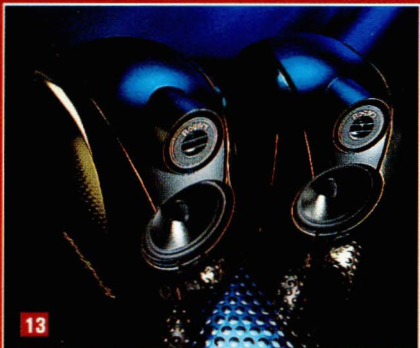


HI-FI PORTFOLIO

- 6-B&W Nautilus,
- 7-Alchemist Kraken,
- 8-Avantgarde Audio Duo speakers,
- 9 Bang & Olufsen Beosound 9000,
- 10-Celestion Kingston.



FEATURE: DESIGN IN HI-FI



HI-FI PORTFOLIO

11-Primare CD player, 12-Marantz monobloks, 13-Rogers DB101, 14-B&W Emphasis, 15-Musical Fidelity X series, 16-Wilson benesch Circle, 17-Audio Innovations Alto, 18-Pluto tonearm, 19-Quad 67/606, 20-Blue Room House Pod, 21-Sennheiser Orpheus, 22-Solid Verticale, 23-KEF Coda 7.



ably the Emphasis, a speaker that looks like a saxophone/orchid hybrid. More down-to-earth projects have included the Solid Solutions range and B&W's DM300 series.

Warren's most recent contribution has been B&W's Casa multiroom system (Update, HFC 175); Native has crafted massive RCA and Proscan TVs for the United States, as well as forthcoming products from QED.

Bricks from the Bauhaus

B&W's most radical design statement must be the Nautilus loudspeaker. This snail-like edifice is the result of both engineering and artistic objectives. The basic shape was honed by Laurence Dickie in the company's R&D facility, while the final look was perfected by Alison Risby, an artist and friend of the engineer. The result is perhaps the ultimate example of form following function.

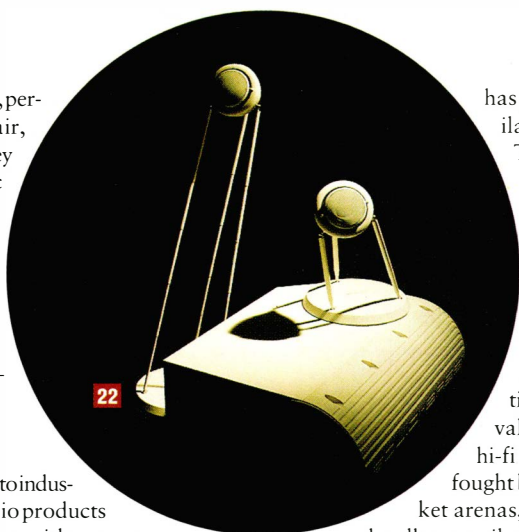
Indeed, in the world of electronics, this seems to be a general rule: right down the line, the look of a product is dictated by the function it discharges. Well, that's one excuse for the plethora of similar-looking amplifiers and CD players on the market.

However, the more imaginative designers have managed to develop metal boxes that stand out from the crowd. Quad's 33 preamp and tuner, for instance, eschewed the 1970s' penchant for a silver finish; their threads combined brown and orange. Pundits scoffed at this colour scheme in the style-conscious '80s, but thanks to the current '70s revival, the old-skool Quads are now at the height of fashion.

More recent Quad products, for example the 77 series, have reprised their forbears' avant-



garde appearance, perhaps with less flair, but nonetheless they plough an eclectic furrow. Their cheeky colour schemes are a counterpoint to the '80s obsession with any-colour-so-long-as-it's-black.



Beo visions

No investigation into industrial design of audio products would be complete without mentioning Denmark's Bang & Olufsen. This company has done more to change the face of hi-fi than pretty much any other concern, anywhere in the world. Like most good ideas their success has stemmed from the commercial application of a simple idea: a generous helping of Scandinavian style, executing clean, simple lines in fine materials.

Hi-fi hair-shirt have always scoffed at B&O for its simplicity and ease of use — how can medicine be effective if it's so easy to swallow? But B&O has done business not because it can out-drag other systems in A/B comparisons, but because folks come across it in the homes of friends and colleagues, and find that its sound is nothing if not acceptable, while its looks are to die for. It would not be wild speculation to suggest that B&O sells more high-value hi-fi than anyone else in the business. This says a lot for the power of good design in a crowded market place.

In contrast with B&W, for example, B&O's design expertise has always been nurtured in-house. In the 1970s, designer Jakob Jensen produced futuristic turntables like the Beogram 4000; while in recent years his colleague David Lewis sketched out the look of Beosound 9000, the highly-flexible six-disc CD multiplayer system, which incorporates a tuner and preamp, can be used either upright or horizontally, and drives powered speakers that look like organ pipes. (Reviewed in HFC 160.)

Another design-conscious Dane is Bo Christensen, founder of Primare and now the force behind Bow Technologies. (Wazoo amp reviewed HFC 175.) Though his products are very much aimed at the high end, and follow that segment's rectangular-box tradition, they feature superb styling details and exude a very strong identity.

More breezy blueprints

High-profile international designers have sometimes dirtied their hands with hi-fi styling exercises. A particularly successful example of this was Mario Bellini's work on the Yamaha TC-800D cassette deck from the '70s: a radical, wedge-shaped machine finished in matt grey. In more recent years there has been input from Philippe Starck, whose soft curves have revolutionised industrial design in the 1990s. Starck has flexed his impeccably-pointed quill for Thomson on a range of video products, and

has produced some similarly radical ideas for Telefunken, like the 'Rock'n'Rock' wireless micro system which is made to look like a stack of three pebbles.

Change is life

It is easier to sell distinctive design as added value in more expensive hi-fi gear. In the hard-fought budget and mid-market arenas, florid styling might be all too easily interpreted as a substitute for hard-core sonic engineering. But the two qualities needn't be mutually exclusive.

Things are getting better. The Arcam and Mission ranges of today are a far cry from their

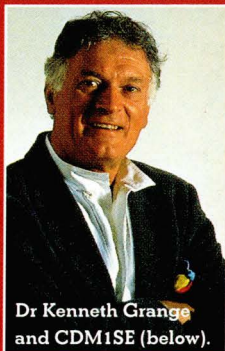
predecessors of even ten years ago. Look at Alchemist's 'Buck Rogers'-influenced Kraken range — that's pretty cool design.

The public must learn that good looks don't prohibit good sound; hi-fi is best chosen with eyes as well as ears. Listen without prejudice. Listen to a little style in your living room! ▲



DESIGNS ON SPEAKERS

Stan Vincent talks to Kenneth Grange, iconoclastic stylist of B&W speakers.



For over 20 years, Dr Kenneth Grange of Pentagram Design has made B&W speakers look just a little bit more special than their peers. Grange first brought his pencil to bear on transducers back in 1976, on what was then a revolutionary enclosure: the DM6. This was one of the first designs to have its drive units set on stepped baffles, in order to align their acoustic centres. "All around were lots of very straightforward boxes, so I knew that whatever I did had to be a piece of furniture," says Grange.

The legendary 801, now a reference for recording engineers all over the world, was the perfect embodiment of a mould-breaking partnership between Grange and B&W founder the late John Bowers. But even these iconoclasts were not sure if the world was ready for the 801 on its launch in 1980. As Grange relates: "They were talking about smooth, flowing contours of the sound around the actual enclosure, so I produced a design for what we called the 'bathysphere', which looked like two pregnant things on top of one another!" (The 801's discrete midrange and tweeter enclosures.)

"We had to convert the bathysphere into something that could be manufactured by cabinetmakers, but everybody was surprised by how well it worked acoustically. We knew damn well that the world wasn't ready for anything so peculiar, so we designed a cover to hide it!" It was not long, however, before the 801's recording-studio enthusiasts did away with the large cloth-covered frame intended to hide those controversial styling points.

Ironically it is B&W's most exotic product, the £33,000 Nautilus, which to many is the archetypal 'designer' speaker. But in fact, the way it looks is much more a consequence of acoustics than a designer's eye. The snail-like shell and nacelle-like protuberances are the classic example of form following function, since they exist to provide optimum air loading for each individual drive-unit. However the sheer scale of Nautilus illustrates a very important fact, as Grange relates.

"The size of a product determines, in a very interesting way, a relationship with the human in space and structure. There is a point at which products cross over from being personal things, handheld things, to being furniture, to being architecture.

Compared with Nautilus, B&W's current DM600 series enclosures are totally understated, but almost more intensively designed. "The decision to adopt subtle patterning on the baffle, the modelling and the shape of the drive units, are just the right mixture of technicality and a softening of technology," says Grange.

Or take the CDM1, now in SE guise (pictured right; and reviewed on page 78 of this issue.) Its front panel has a sizeable chamfer on which rests the tweeter, and this frankly unorthodox configuration resulted from "a bee in my bonnet about cabinet construction," according to Grange. "Perhaps you could start to get more dramatic cabinets if you started to chop off faces. I made a box with this serious cut, and mounted the tweeter on it — acoustically it comes out very elegantly!

"What little I know about acoustics now makes it very difficult for me to do something I know is fundamentally wrong," says Grange. "But I still have some ideas for attractive domestic products!"



INTERVIEW

Help!

SEND YOUR HI-FI QUERIES TO
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Alan Sircom and Jason Kennedy answer your hi-fi queries!
Every letter published wins a TDK SA 90 tape worth approx. £2.39! Ten tapes for our Query of the Month!



Query of the month

Brought to you in association with TDK

Good throb

After years of not taking hi-fi seriously enough, I have started reading your magazine and thus have entered the hallowed realm. To be honest, I don't fully understand everything I read, so before launching into a



Kenwood DP-3080 Core component.

monster shopping spree I would like to learn some 'basics'.

Hence I request your help on my system, which is as follows: Pioneer A-301 amplifier; Denon DRW 850 tape deck; Technics SLP277A CD player; MDS-JE500 MD player.

Speakers are Acoustic Research Red Box (first pair ever purchased — does AR still exist?) and a pair of Heybrook Point Fives, which had their tweeters blown at a party.

Essentially, I need a recommendation for new speakers: floorstanders preferably. I'm looking for something strong in the bass department — I have a penchant for getting a good throb/vibration going — without losing clarity and transparency in mid and high frequencies, for a room 10 x 5 metres. Music tastes are William Orbit, Pink Floyd, Genesis, Radiohead, prog rock.

In addition I have a considerable problem in that I write to you from Mallorca, Spain, where choice is limited and auditioning equipment unheard of.

Carlos Mayans via e-mail

For hi-fi basics, your list of likely components doesn't look too inspiring from here, but perhaps the options are limited in Mallorca. What about more serious core components like a Kenwood DP-3080 or Denon DCD-635 CD player, combined with a harman/kardon HK620, NAD 312 or Audio Innovations Alto amp? Then you can start to think seriously about speakers.

The lack of price-range indication makes this job less easy but with a ceiling of around £300-£400, see if you can track down some Dali 104B, Heybrook Heylios, PMC TB1S or JBL LX2.

A combination of any of the above should give you the hi-fi basics you seek — and with a little luck they should endure any future parties.

Every issue, we're giving 10 of TDK's award-winning SA 90 tapes to the writer of the month's best query. When reviewed in Hi-Fi Choice, TDK's SA tape revealed the heart and soul of music with a graceful and transparent sound. We awarded Five Stars for Sound Quality and our coveted Recommended flag!

Sterling service

My system comprises Marantz CD-63SE, Arcam Alpha 8 amp, B&W 602 on a locally-made Atacama SE24 look-alike stand, bi-wired with QED Qudos via Cable Talk 3 interconnect.

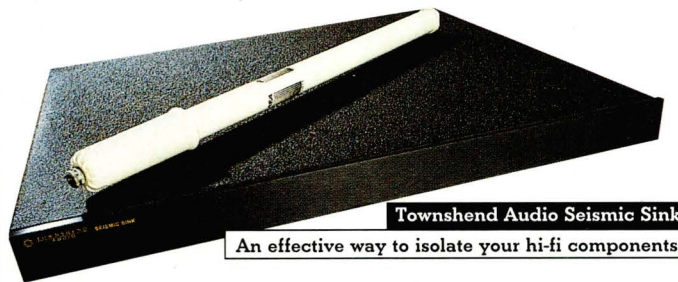
My listening room is 18 x 11 feet and the speaker placement is one foot away from the wall, five feet apart, slightly toed-in. My listening includes soft jazz, Nat King Cole and Jim Reeves.

I love my system's clarity and accuracy, but I am not happy with its bottom-end weight. I can't afford an upgrade, but I desperately need your advice on how I could enhance the bottom-end of my system by tweaking or adding accessories.

Ismail Abdullahus via e-mail

There are a few tweaks you could implement. Are the speaker stands filled? If not use sand and/or lead shot to increase their mass. Blu-tack the speakers to the stands, and experiment with placement — can they go any closer to the wall? What are the amp and CD player sitting on? Can you get Seismic Sinks where you are? If so, get one and use it under both amp and CD.

Your speaker cable could also be limiting bass performance: check out the Ortofon SPK300 instead.



Townshend Audio Seismic Sink
An effective way to isolate your hi-fi components.

Oriental offset

I'm writing from Singapore where turntables are not popular toys. In fact, many people have never seen one before. I'm now trying to educate myself on the design of turntables.

Why do we need an 'off-set' in the shape of a tonearm, like an S-shape tonearm? Isn't the perfect alignment when a straight tonearm (without off-set) is pointing to the spindle, and the stylus tip is positioned at the centre of the spindle?

K P Tseng, Singapore

A tonearm doesn't specifically need to be S-shaped but the stylus needs to be mounted at an angle so that it gives the minimum tracking error as it traverses the record. Because cartridges describe an arc as they do this the degree of distortion due to tracking error varies according to position on the disc. Most arms offset the cartridge at the headshell and use a straight arm tube which offers lower mass and greater rigidity than the S-shaped variety.

Ideal groove tracing can only be achieved with parallel tracking arms that have no off-set and track across the LP tangentially. There is a handful of tangential/parallel tracking arms available, but as they involve more complex engineering than pivoted designs, they tend to be rather more expensive.



A bit of oomph

I recently purchased the excellent Cambridge Audio CD4SE CD player, and the change thus effected to my system has got me thinking about upgrading again.

I currently use DNM Reson interconnect and speaker cable, which I found was the best of the cables I tried last time, only my room and system has changed since then. I tried various interconnects with the Cambridge, settling on a Furukawa FD-1010 which I

received when I took out a subscription to *Hi-Fi Choice*.

There is only one problem with this set-up: I don't think the Furukawa and the DNM cable are complementary with regards to bass. I am looking for a more powerful bass from my system, which is in a room of about 15 x



B&W DM602

Wall-mountable with good bass extension.

18 feet with the speakers either side of a bay window.

The rest of my system comprises: a much-loved Pioneer A400 GTE and bi-wired Royd Sintra IIs on spiked, sand-filled Atacama stands.

The obvious quick option is to try new speaker cable, as I know the Pioneer is very fussy. I have heard of Monolith 20:20 cable working well with the Pioneer, but can you recommend some others for me to check out?

The other option I could try is a fresh choice of stands or speakers. My last dealer used to recommend Target Resolution stands; this could work with possibly a powered subwoofer? (But which one?) As far as new speakers go, I could try the Pioneer with a friend's Mission 753 Freedom speakers, but I doubt they would work close to a rear wall. Are there any speakers you think would work with my amplifier?

Ian Harkins, London

The A400 in GTE guise is a very tasty amp indeed, and it's unlikely that it is drastically limiting your system's bottom-end performance. You've identified the main options available: bigger speakers or a sub, and now you need to listen to both alternatives and decide which route is right for you.

Subs of the active variety are very popular; in fact we're currently preparing a group test of such products, so look out for it if you choose the subwoofer route. Otherwise, wall-mountable speakers with decent extension include B&W's DM602 at £300 and Audio Note's AN-JJB at £799.

The Monolith 20:20 cable would also help, but it looks a little dear compared to the rest of the system. You do love the system, but the question is: how much?

Mellow Marantz moments

I have a 1979 Marantz 5030 cassette deck, and I would like to complement it with a matching amplifier, tuner, and/or receiver from the same Marantz series. Which Marantz amp, tuner and receiver would be appropriate?

Bojan Drndic, via the Internet

The models matching the 5030 are the PM-500 integrated amp and the ST-500 tuner. We do not have a model number for the receiver. However, we'd suggest looking for more up-to-date components, as all of these models are now well into the final stages of an expected 20-year product life-span.



HELP!

Nakamichi DR-3

An old Hi-Fi Choice favourite.

Reelin' in the tape

I am in the market for a tape deck, and have been looking at a couple of units within my budget of £250. The decks I have tried are the Nakamichi DR-3, the Teac V-1030 and the Denon DRM-650S. I've read your review on the Denon, but haven't seen any comments on the others. I currently have a Rotel RA985BX integrated amp, NHT 2.5 speakers and a Denon DCD-560 CD player. Any help would be appreciated.

Nick Cileli via e-mail

We stopped listing the Nakamichi DR-3 review because the brand is no longer available on the British market, but we liked it a lot and we would be inclined to encourage you in that direction. The Teac did not fare so well, and you know about the Denon: when it comes to cassette decks, Nakamichis always possessed a certain magic that took them beyond the realm of the cassette medium. If you can find one in good condition, go for it.

Pop-tastic vinyl, mate!

I have a Pink Triangle turntable, with Goldring MC cartridge, a Linn phono preamp, and a Alchemist Nemesis amp. My problem is: I get lots of loud static pops when listening to vinyl. I have tried getting anti-static cleaners, re-organising all the wiring and so-on: sometimes it improves but it never goes away. I never had this problem with a cheaper MM preamp and MM cartridge. What could it be? What can I do?

Steve Hance, via e-mail

It sounds like you could have a shielding problem. This could be due to the proximity of cartridge or phono stage to something with a transformer, or it might derive from an extraneous source inducing RF hash into the signal through the leadout wires of the turntable. (The source of this interference is often local radio transmissions, such as those from police stations, taxi companies, or TV masts).

Shifting the phono stage away from the amplifier may help, or try wrapping tin foil around the leadout wires of the turntable. Otherwise, the problem may stem from a huge mismatch between cartridge and phono stage due to incorrect load parameters in the latter's input, for example inappropriate capacitance setting. Consult your dealer for further assistance.

Into the '90s

I recently upgraded my CD player to an Arcam Alpha 8. The rest of my system consists of a Luxman LV-104u hybrid amplifier and Jamo Power 270S speakers. The interconnects are from Vivanco and the speaker cables are from Interdyn.

I would like to upgrade the speakers but I'm not sure how much I need to spend, to ensure I'm getting the maximum benefit from the rest of the system. What brands of speakers would you recommend? Also, for the same total price, are floorstanding speakers better than smaller speakers on speaker stands?

I listen to most music with the exception of classical. My listening room is approx. 4.5m x 4.5m. The ceiling is 4m high.

Eddie Michaud, Australia, via the Internet

You are correct in thinking that the speakers are ripe for exchange. However, having replaced the speakers you will most likely need to change the amplifier. Try the B&W DM603, Royd Doublet and Mission 752 Freedom. All these are floorstanders, but there is no reason why you couldn't use something like the stand-mounted PMC TB1, which is transparent if slightly laid-back.

Integrating amplifiers

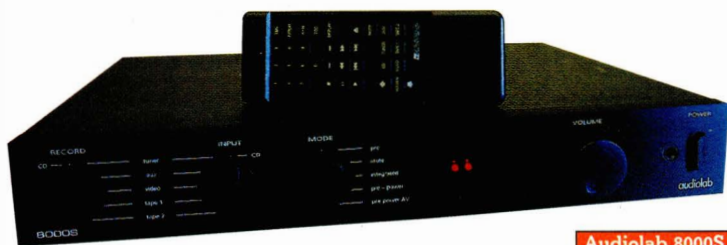
Recently, after auditioning a Linn system comprising the Linn Wakonda preamp, Karik CD and a pair of the LK240 power amps with the Linn AV5140 speakers, I'm curious to find out if there are other hi-fi products that could drive the (purchased) Linn AV5140s. The Linn distributor kept insisting that a complete Linn system is the ideal way to go.

I'm sure a pre/power amp set-up would be great, but are there any integrated amps that could drive the Linn AV5140 with ease, for example the Alchemist Forsetti APD15A integrated amp? I'd appreciate your suggestion of a pre/power and integrated system other than the Linn.

I listen mainly to music such as Enigma, Collective Soul, Andrea Bocelli and US3. I'm starting to wonder if the Linn Keilidh loudspeakers are easier to drive with other integrations. Paul Chin, via the Internet

To be honest, we have had little exposure to the AV51 range of components, as they are mostly used in AV applications. The Linn pre/power combination is an obvious choice — we are not convinced that the Alchemist amplifier you mention will drive the AV5140 speakers happily. The only integrated amps that could drive them properly are hefty models like the Krell KAV300i, Electrocompaniet ECI-1 or Jeff Rowland Concentra.

However, we don't understand why you want to opt for an integrated amplifier if you already have a pre/power. You may want to cut back on boxes, but it is likely that you will cut back on quality, too. If you are determined to do so, we believe the Keilidh will work with a cheaper integrated amplifier than the AV series, but you still need a quality model such as the Arcam Alpha 9, Densen Beat B100 or Naim Nait 3 at the very least to obtain decent sound quality.



Audiolab 8000S

Buy now before prices go up?

Radical replacement

I am looking for an amplifier to replace my home-made valve design. My current system includes: B&W CDM1 speakers, JPW stands, Linn speaker cable and a Micromega Stage 1 CD player. I was planning to buy a second-hand Bryston B60 amplifier but after reading your review of it in HFC 175, I'm unsure.

There is another amplifier on the Swedish market that I like: Audiolab's 8000S. What should I do now? Buy Bryston or Audiolab? Are they very close in sound quality, regardless of price? Which one will best suit my system? Mark Hammer, Cambridge

Neither will sound like a home-made valve amp, or any valve amp for that matter. But both will give you more level and bass grunt from your B&Ws — hopefully more resolution as well.

As for the two amps you list, we are pretty keen on the 8000S — it's a decent product at a good price, though the latter may well rise following TAG Electronics' take-over of Audiolab's parent company. The Bryston is a good solid product that usually costs considerably more, so if you can get both for similar money things are less simple. We'd recommend listening if possible and getting hold of back issues for reviews if you can't, but our equivocal review of the Canadian amp was based principally on its steep UK price — in many respects it appeals.

Perfect sound forever?

I am buying a new CD player to replace my Denon 560, and I would like some suggestions. I have around £300-£350 to spend. I am not concerned right now about other separates because I don't have enough money to buy something I would be happy with.

I am looking for a simple CD player with perfect transport, DAC and build (not hard sounding, but as detailed as can be). Branislav Stankovic, Belgrade, Yugoslavia

In the unedited text of his letter, this reader enunciated a California Audio Labs CD player which is not imported into the UK. By the same token, our recommendations may not be imported into Yugoslavia! However, three good budget CD players we have tested all hail from Cambridge Audio, as distributed exclusively in the UK by Richer Sounds. The models in question are the CD4SE (£200) and CD6 (£250), both Best Buys; and the CD4 (£150), Recommended. Others you could try include the recently-introduced Denon DCD-635, the Kenwood DP-3080 or DP-4090 and the ultra-cheap Philips CD-721. However, we would recommend you also hear some players priced above your nominal budget limit.

Sub or floorstander?

My current system comprises a Linn LP12, Meridian 206 CD and 201 preamp, a Sony TCD-D3 DAT, Albany S508 power amp and a pair of Monitor Audio Monitor 9 speakers. Overall I find the sound very pleasing, and occasionally spine-tingling.

However, I have been thinking about upgrading my speakers to Sonus Faber Concertina, Tannoy D100 or Eikos FR1. Would the Albany make a good match with these, or would you recommend something else?

The power amps by Quad and Cyrus both appeal (I have to move back and forth between here and Canada, so a brand well represented internationally is handy) as do the Sonic Frontiers models (cheaper over there too). The Albany may be due for replacement anyway, due to a 'growling' sound it makes!

Finally, I would like to add a subwoofer eventually. How would the £1,000 combination of the Sonus Faber and an REL Q-100 compare to floorstanders of a similar price?

Mark Hilborne via e-mail

Subs or floorstanders seems to be the question of the month. The answer remains the same: listen and compare. We've had good results with both approaches and it would seem that subs are in the ascendency of late.



Quad 77

Should make an interesting partner for the FR1.

We also love the FR1 and if David Vivian's findings this month (Ultra Vivian Scene, p130) are anything to go by, the FR1 can be happily combined with a decent sub. JK has found that he can do without the bass extension and digs the phenomenal stereo imagery and cohesion of the speaker alone. So check it out.

As for power amps we liked both the Cyrus and Quad 77, but the latter came out a little better so that's where we'd suggest you start. You could also consider the Sumo Polaris III which might be available at a competitive price over the water.

DJ toolz for hi-fi?

What's the *Hi-Fi Choice* verdict on the Technics SL-1200/1210 turntables? I know the sound quality probably does not match a Rega Planar 3, for instance, but I am looking for a new turntable in the sub-£500 bracket and the Technics seems to fit the bill. The vast majority of my vinyl is dance music of various genres, either 12in singles or LPs with two or three tracks per side. My friend has a Planar 2, which sounds good, but I don't fancy the inconvenience of taking off the platter to change rpm. The pitch control on the Technics would be useful too, though not essential. And I believe they hold their value well. So would you recommend the Technics or is there a similarly-priced turntable that would match my needs bearing in mind the type of music I will be listening to?

Robert Day, via the Internet

If you feel that you really cannot stand the inconvenience of removing the platter to change speed, the Technics is about the best to go for. In outright sound quality terms, it cannot compete with a Rega Planar 2 or 3, but it is well built. That said you should check out alternative DJ turntable 'flavas' from Gemini, Vestax et al. The other option is the Michell Mycro, which is slightly more expensive but has an external belt pulley allowing the speed adjustment to be made without removing the platter. And it sounds excellent, too.

System synergy

At the core of my system is a Marantz CD-63 SE CD player, Quad 33/303 pre/power amps (with Cable Talk Monitor 2 interconnect, through a phono-to-DIN converter) and a pair of Tannoy Lancaster speakers (with 12in dual concentrics). I have had the Quads serviced, and still love the sound of them through the Tannoys. So I want to keep them — that is, until a kind dealer unexpectedly arrives at my door with a van-load of £500-£700 amps for me to try at home at my leisure.

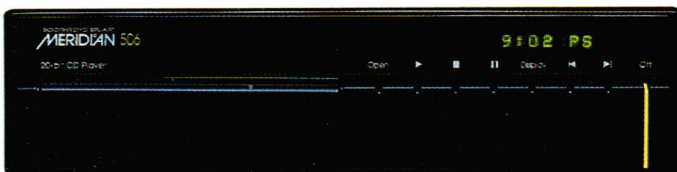
I now want to upgrade the CD player, to something that costs around £1,000. I had thought of starting my trials with the Marantz CD-17 KI-Sig, but your review in this March's issue (HFC 176) expresses some reservations. As it is going to be almost impossible to find a dealer who can let me hear various CD players through this combination of amps and speakers, could you give me some suggestions? In the 'great hi-fi trade-off' between warmth and detail, I prefer to err on the side of warmth.

Also, does it help to replace the standard cable between the Quads with something better? I believe that one can have a Chord Chrysalis interconnect made up with the necessary four-pin DIN plugs at both ends.

Richard Andrews, London

Last things first: most probably it would be worth your while to upgrade the interconnect — there has been a fair amount of progress in this area since the 33 series was around and you should be able to combine the amp's warmth with more detail by going for the Chord connection.

As for a CD player, a couple of the other players from our last test might be more appropriate, notably the Meridian 506 and Helios Model 2. You'd also do well to consider the Helios Model 3 featured in our system review this month (p10).



Meridian 506

This HFC Best Buy is an ideal partner for Quad.

The heart of the blues

I want to build a system that will take me right to the heart of my rhythm and blues collection. I listen to just about every single style of blues, ranging from the earliest acoustic recordings, through to Chicago electric blues and the more progressive style of Stevie Ray Vaughn.

My collection consists mainly of second-hand vinyl (much loved) with a blossoming CD section. I guess I'm looking for quite a warm feeling to the music, with crystal-clear vocals and acoustic instruments. I would also be grateful if surface noise on vinyl was treated sympathetically. Bass depth should be warm,

though not booming or too predominant. Can you give me your views on the following choice of components?

Project 6/Sumiko turntable, Music Fidelity A220 amp with either a Music Fidelity A2 or an Arcam Alpha 7 or 8 CD player.

Sonus Faber Concertino speakers with Atacama stands, Sound Organisation Z560 equipment support, Cable Talk 2.1 interconnects, Cable Talk 3.1 bi-wire speaker cable with either a Yamaha KX580SE, Pioneer CTS550S, or Technics RS-AZ7 tape decks. Roy Thrush, Cheltenham, Gloucestershire

Our view is that you should take a trip to your local dealer and see what this lot sounds like. They are all good components but it is hard to predict how the amp and speakers will interact, and you may find that there are better partners for both. Your speaker choice in particular is unusual, or is it the solid walnut that has caught your eye? You may find a higher quality amplifier is necessary to get the smooth results you seek, and given your budget a less exotic speaker may be more appropriate. Take Celestion's A1 for instance, a good-looking standmount with just the rich, laid-back sound you are looking for. Put a pair of those on a decent Kudos stand and start listening to amps and CD players that suit.



Celestion A1

Good-looking, laid-back and affordable.

Goertz-yer

I bought some Goertz M1 speaker cables and connected them from my Electrocompaniet AW-100 to my ProAc Tablette 50 Sig. Each time I turned on the amp, the fuse in the amp would be blown. The amp was brand-new and subsequently checked by my dealer and burnt-in for a 24 hour period. It was fine. The technician suggested to change the fuse from 2.5 to 4 amps.

Again the fuse blew. I changed back to my old XLO cables and there was no problem. I suspect the culprit is the Goertz cables. Can you confirm this? I tried the cables on the Audiolab 8000S and there was no problem.

J.H. via the Internet

Goertz cable is extremely capacitive and certain amplifiers do have a problem with such designs. This incompatibility casts no aspersions on the quality of either amp or cable, but is simply a gross mis-match. There are three solutions: change the amp, change the cable or add an impedance matching box (available from Townshend Audio). However, this last option is not favoured by some who use incompatible amps. Although it prevents problems of the kind you are experiencing, the tonal balance of the cable can make such systems sound too bright.



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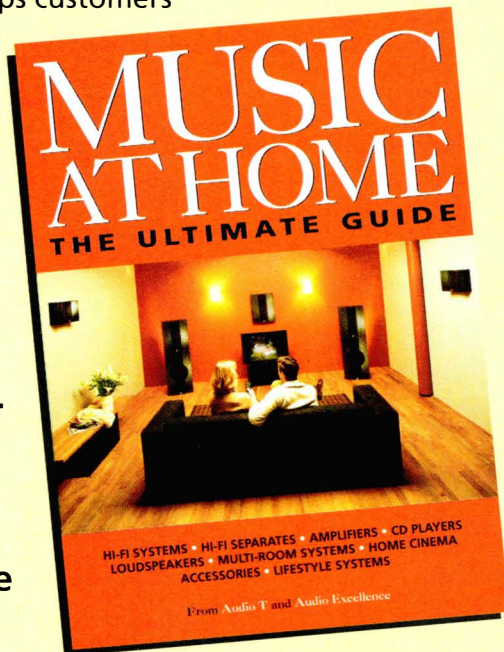
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Wot! No bass?

A few years ago I bought a pair of JBL Control 5 loudspeakers, together with a harman/kardon 6550 amplifier (2x60 Watts), and a Technics SL-PS670A CD player. My problem is that I don't get enough bass, and at half-level volume the JBLs are struggling to perform. Recently I listened to a friend's Rogers LS3 and I was amazed at the bass and the clarity. The difference between these and the JBLs was enormous.

Can you please help me to find a pair of loudspeakers with warm, powerful bass and at the same time the quality of the Rogers? I thought about the Heybrook Optima as I have £300 to spend on loudspeakers, but will it fit with my HK6550? Do you think that I should go for the JBL LX-2s? Do they have enough bass or will they be like the Control 5?

I would prefer a bookshelf or a standmount, but I could live with a floorstander if it would suit better.

Nicola Zamboni, Bournemouth, Dorset

The JBL Control 5 is not designed as a full-range, mid-field speaker (as you are currently using it) and will throw away a lot of bass. If the sound of the LS3 is more bass-heavy, that means your system is really bass-light. You should try speakers like the Tannoy Mercury M2, B&W DM302 or the JBL LX2. Trying a more expensive speaker than this will show up limitations in the rest of your system, but any of these — with cable from Cable Talk or similar and decent stands to suit (ask the manufacturer or dealer in each case) — would be fine.

Student superpowers

I am in the market for a new speaker system to replace my 'el cheapo' Technics speakers which have vague treble and practically no midrange. The speakers have a 5.5cm paper-cone tweeter and a pretty large 25cm midrange/woofer. I want to replace these speakers with either a pair of floorstanding speakers with lots of bass or a pair of small bookshelves and an active subwoofer.

I'm on a maximum budget of £250 and I realise that the subwoofer combo may not be possible at this time. Do you have any advice on which route to take? I listen to rock, indie and drum & bass so I want solid low-end extension. The speakers need to be capable of high volumes for parties and low volumes for the evenings so high sensitivity is quite important. I will be using the speakers with a 100 Watt Pioneer SX-303R receiver and a Sony CDP-CE315 five-disc CD player. The speakers would also be used with a mono TV so decent midrange is important as well.

Adam Cliffe via e-mail

We would suggest either the Tangent Monitor 9 or Wharfedale Valdis 500 speakers for excellent bass performance. The treble on both speakers is not too subtle, but they are party-friendly. Both are also more evenly balanced for day-to-day use than real



Tangent Monitor 9

Provides excellent bass!

party animals like some of the Cerwin-Vega models.

More 'hi-fi'-sounding speakers at this price level (such as the B&W DM302 and the Mordaunt-Short MS10i) are more evenly balanced overall, but lack the sort of grunt required for high volumes. You should check out both styles of speaker and determine for yourself how important is that need to party!

HELP!



Pioneer A-300R Precision

Could help bring out the best in TDL RTL3s.

That sinking feeling

My system comprises a Philips FR751 Dolby Pro-Logic amp, Denon DCD-635 CD player, TDL RTL3 speakers, with Radio Shack Premium copper cable and interconnects. My room measures 13 x 15 x 8.6 foot.

Can you suggest how I can get the best out of my TDLs? Would using monoblocks be advisable? My local hi-fi dealer suggests Rotel amps for an improvement. TDL suggested that my amp is not entirely suitable.

Would it help to partially sink the speakers into the wall? David Neale, Stroud, Gloucester

Sink the speakers into the walls, whoa! Radical thinking, dude, but not such a great idea given the freestanding requirements of the RTL3. We concur with TDL on this one: the amp is the weak link in the chain and unless you use its multi-channel potentials there are few sonic reasons for hanging on to it. Listen to some decent integrated amps and see if you agree. Try some of the following: harman/kardon HK620, Magnum 1A70, Marantz PM-66 KI Sig, Mission Cyrus SL or the Pioneer A300R Precision. It would also pay to upgrade your cables — check out the Directory (p106) for the alternatives.

Insight and coherence

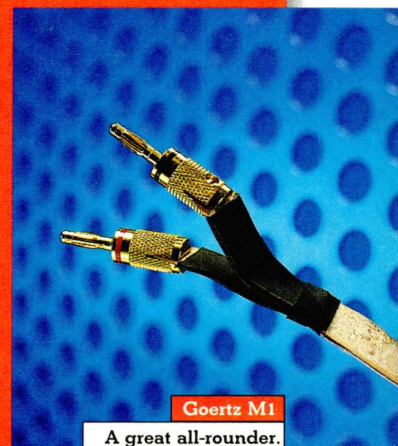
Could you please give me some advice on my present system, which consists of the following: Marantz CD-63 mkII, Pioneer A400 amp, Sony SA-370 tuner, Yamaha KX-260 cassette deck, Rogers LS 33 loudspeakers on single-pillar sand-filled stands, six inches from the back wall. My room is 3m x 2m. Cables are Audioquest Quartz.

My music tastes include pop, classical, acoustic and jazz. The sound is soft and smooth, but lacking in detail.

I would like to have more detail, insight and coherence. My options are either to change this amp for a Marantz PM-66 KI Signature to match the CD63 mkII, or to change the CD player for a Pioneer PD-S505 Precision to match the A400 amp. Which would achieve the desired sound?

I would be grateful for any advice you could give.

Richard Williams, Gwynedd



Goertz M1

A great all-rounder.

Replacing the A400 with a PM-66 KI Signature would give you more detail but not necessarily more coherence; while adding a PD-S505 Precision to the A400 would give you the coherence but not necessarily the edge. It looks like you may have to work on a complete upgrade, a step at a time perhaps. Listen to the KI Sig combination and compare it with the Precision pairing and see which one takes you in the desired direction.

Another barrier to detail could be your cable. Audioquest tends to be relaxed sounding, and cable from Goertz combined with Eikos interconnect will give you a lot more insight. (Prior to purchase, ensure Goertz is compatible with your amp — Ed.)

HINTS AND TIPS

QUALITY OR QUANTITY?

JIMMY HUGHES TACKLES THE NEBULOUS QUESTION OF HI-FI LOUDNESS. ARE VOLUME LEVELS REALLY AN INDICATION OF QUALITY?

Because changes in volume level can influence your perception of sound quality, it's essential to maintain identical volume settings when comparing products. Unfortunately this is easier said than done. It's okay if you're comparing cables; you can keep all amplifier settings unchanged so you know you're listening at exactly the same volume. Subjectively it may seem as though one cable makes things louder. But since the amp's volume knob has remained unmoved, the difference must be down to the change in cables.

It's less straightforward when you're comparing other kinds of hi-fi products. For example, when you're sampling several CD players — perhaps in a hi-fi shop prior to purchase — you can't just assume that each will have an identical output. I recently tried Holfi's Xara DC player which has an output of 1.4V compared to the 2V output offered by most machines. The Holfi sounded noticeably quieter than my regular transport/DAC combination, which has an unusually high output of about 4V! Not surprisingly, there was a big contrast between the two — I had to increase volume levels substantially with the Holfi before the sound regained its detail and impact.

However, it was still difficult to gauge what would be an appropriate signal level setting. Subjectively it was as though the Holfi had less 'drive', sounding just a shade more contained than my usual CD player. Because of this, it proved tricky to match volume levels by ear. Trouble is, it's not simply a question of matching average loudness levels. If one product sounds subjectively more dynamic than another, it will retain more of the music's drive and attack, sounding keener and more purposeful as a result. Peak passages will have more bite and impact.

Using a sound pressure meter and pink noise may help to get volume levels the same on paper, but you still need to take care and listen out for subjective differences in dynamics. The ear makes up its mind about volume level over a fairly narrow band of frequencies in what's sometimes called the 'presence' area — around 3kHz. If you're comparing two loudspeakers, and one is a little recessed in this region, subjectively you'll probably want to



You think it's hard to judge hi-fi sitting in your lounge? Try deciding at Warp Factor 5!

play this one at an increased volume level even if broad-band measurements show that the two loudspeakers have virtually identical efficiency.

I tend to think that the subjective impression of loudness is a good thing. In other words, the product that produces a bigger, more room-filling sound is probably the better item. But sometimes this isn't the case. Some products sound 'loud' simply because they compress dynamic range. Superficially, this can fool you into thinking that the sound is more dynamic, because everything's forward and in-your-face, giving the impression of greater impact.

Also, some products sound 'loud' because there is a degree of distortion present which fatigues the ear. A good system often doesn't sound loud even when it's moving quite a lot of air. You can only judge dynamics by the contrast between the loudest and softest passages. The wider this is, the more dynamic the sound.

I Am A Rock

Want to find out what your sources and speakers really sound like? **Jason Kennedy** finds a £6,900 pre/power combo that is ruthlessly revealing.



Boulder L5M (pre) and L102M (power) amps

"The sound of a Boulder amplifier is the sound of your recordings."

The Colorado-based Boulder electronics company believes strongly in engineering and technology. There's little indication of golden-eared tweaking or musicality in its literature. Boulder is owned by Jeff Nelson, an audio electronics designer whose early days were spent on the pro side

of the fence, manufacturing for studios. This is where he discovered a circuit called the 990, a discrete audio gain-stage designed in 1978 under the auspices of Deane Jensen. Used in the first Boulder amp (the model 160), a version modified for DC coupling is at the heart of the range today.

The L5M and L102M pre and power

amps reviewed here are stylised versions of the company's standard AE range. No one in the hi-fi game can ignore the fact that market trends are moving away from black boxes — which characterise the AE series.

The £3,800 L5M preamp is a line-level design with a strong emphasis on balanced connections. The two pairs of inputs and one

pair of outputs are all configurable for different pin connections — XLR plugs can be wired in different ways, allowing for polarity to be optimised. Regular single-ended (phono) sockets are provided for four more sources and two tape recorders. The £3,100 L102M also sports a pair of balanced inputs, along with single sets of binding posts for speaker cable connections. Neither preamp nor power amplifier appears to carry CE marking, but one assumes this situation will be rectified before these units go on sale.

The L102M's specs claim 100 Watts into eight Ohms and 170 Watts into four — and this is the base model in the range. There is an L500M in the metal series, then pre, DAC and monoblocks in the extreme 2000 series, where prices start at £17,000 for the DAC.

Ergonomics on the L5M are better than they first appear. There isn't any option for remote control, but the indented control wheels are easy to use, and once you've realised that the cursor is opposite the indent, there's little danger of accidentally turning up the volume to eleven. These units are also unusually compact, being only 17 inches wide and less than five inches tall. Quite a bit more manageable than the Krell pairing reviewed over the page!

Sound quality

This combination proved hard to pin down. The manufacturer's literature suggest that, "The sound of a Boulder amplifier is the sound of your recordings," and to a greater extent than usual, this seems to be true. As I auditioned with increasingly diverse ancillaries, I learned more and more about them. I tried a few CD players including the Marantz CD-17 KI Sig, T+A CD1220R, Rogers Serie Cadenza and Acoustic Precision Eikos, now sounding even more astonishing — see *Update*, page 6.

To play vinyl I deployed the stalwart SME Model 20 with vdH Frog cartridge and Michell Iso HR step-up amp.

For comparative purposes I also used Krell's KAV250 pre/power combo, along with a full gamut of speakers: JBL 4312mkII, AP Eikos FR1, Living Voice Auditorium and finally ProAc Response 2.5. No stone was left unturned in the quest to get to the heart of this Boulder, so to speak. However, as I said, these amps covered their tracks well, as a pairing of this cost should do.

Here we are faced with a product which comes very close to the hi-fi ideal of a straight wire with gain. These amps add next to nothing to the music they reproduce. Their touch is not quite as light as that of DNM 3C/PA3 (HFC 176), but the extra power here allows the user to choose from a broader range of speakers. There is also the faintest hint that electronics are involved in the reproduction chain — which of course they always are, and



Both balanced and single-ended signals will find a warm welcome on the Boulder's back panel.

a system which negates that sensation is covering up what occurred in the recording studio. It's just that in comparison with the DNMs, the Boulders evince the presence of electronics at high frequencies.

They have a wide dynamic range and broad bandwidth, and delineate sources with tremendous aplomb, effortlessly exposing each one's strengths and weaknesses. Particularly extreme was the gulf between vinyl and CD, which became much more apparent when the Eikos CD went away to be upgraded. No alternative CD players

detail resolution was never an issue. Peeling back the layers on Coldcut's *More Beats And Pieces* (from *Let Us Play*) was still an astonishing experience. I also discovered just how much depth and presence there is on *Moroccan Trance Music II: Sufi* (on the Sub Rosa label), an extraordinary recording of Marrakesh tribesmen singing while playing steel castanets and ghibri (a crude stringed bass instrument). It is so dynamic and ambient a recording that with your eyes closed, you could be in North Africa.

Presence plays a fundamental aspect in this duo's sonic performance: it reveals the depth and timbre of instruments and voices with considerable finesse. The Krells appeared to offer similar detail,

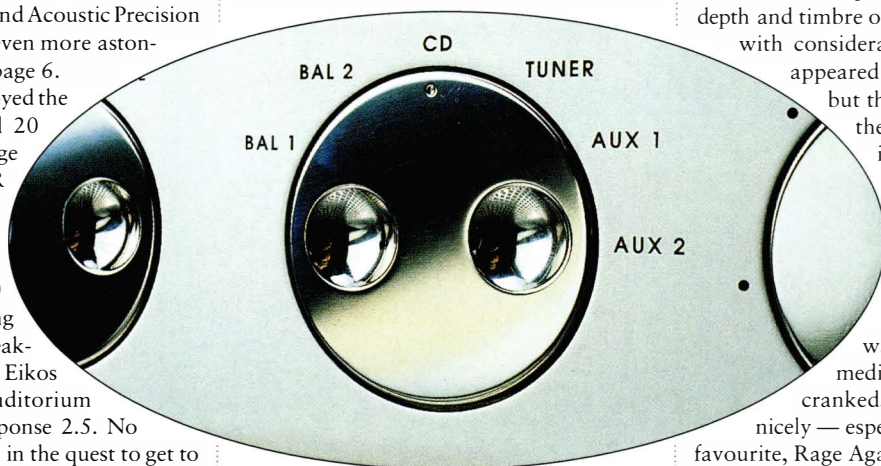
but the Boulders soon proved their worth in extra dynamics and bandwidth. After the JBLs had to go, I had trouble replacing them with speakers that were equal to the Boulder pre/power.

Most of the listening was done at low and medium levels, but even when cranked, these amps held up very nicely — especially with that old hi-fi favourite, *Rage Against The Machine*.

Conclusion

If this is one of Boulder's more affordable combinations I can only imagine the quality available from the company's silly money offerings, but I'm determined to find out nonetheless! The combo's only failing is its lack of remote control, but with these musical dynamics on tap, such trivialities as volume level pale into insignificance. All I need now is to find a speaker with the dynamic range to keep up! ▲

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could escape the Boulders' relentless honesty, and match the quality of the sound produced via the more traditional format of LP.

When it came to timing, rhythmic results from the Boulders were again entirely dependent on ancillaries, with the Marantz emphasising this particular aspect of music every time. Imaging, however, is one area where the Boulders seemed reticent. Other amps tested over the last year or so were more adept in this respect (the Jeff Rowland Concentra comes to mind), but the level of

Ring My Krell

US high-end doyen Krell made its name with amps that were big on bucks and bulk. **Alan Sircom** thinks he detects a degree of '90s downsizing. . .



Krell KAV-250p/250a pre/power amp

"More adept at wading through complex rhythms than I remember old style Krells being capable of..."

US high-end monarch, Krell, has built an impressive reputation on the back of the massive power amplifiers for which it was first known. However, today's high-end customers have very different needs from their counterparts of 10 or 20 years ago, and Krell, like all good high-end hi-fi companies, is moving with the times. It still makes mighty stereo and monoblok power amps,

but recent moves into one-box digital players, AV and integrated amplifiers all highlight a new Krell approach.

The KAV-250 preamplifier and power amplifier combo are typical of the new Krell breed. They eschew old Krell trademarks like massive heatsinks, behemoth power supplies and extremely-high-mass audio. Their industrial design is almost svelte.

The £1,999 KAV-250p preamplifier is a

remote-controlled, line-level-only design offering both balanced and single-ended inputs and outputs. Unusually, the £3,195 KAV-250a power amplifier offers similar inputs, too. It claims to double its power from 250 Watts (eight Ohms) to 500 Watts (four Ohms). Both models feature a custom-specified 12V control system that can energise or switch off every Krell component in a suitably-connected system.

Like most Krell kit, the duo works extensively in Class A, and as a consequence, both components get hot in use. Fortunately, standby modes reduce power consumption when the gear is not in play. That said, the idle power consumption of the KAV-250a power amp is a healthy 250W — more than many decent integrated amps at full tilt. Flat out, the amp claims to sup nigh on 1.8kW (as much as a two-bar electric fire).

Another link with old-school Krell is in the new rig's exceptional build quality. The casework is constructed far beyond regular audio specifications, and the purposeful front panel really looks like it means business. Under the hood, the story is no different. So solid is the lay-out, it appears as if you could pick up the amps by a resistor on one of the circuit boards. Well, almost.

Tried and tested

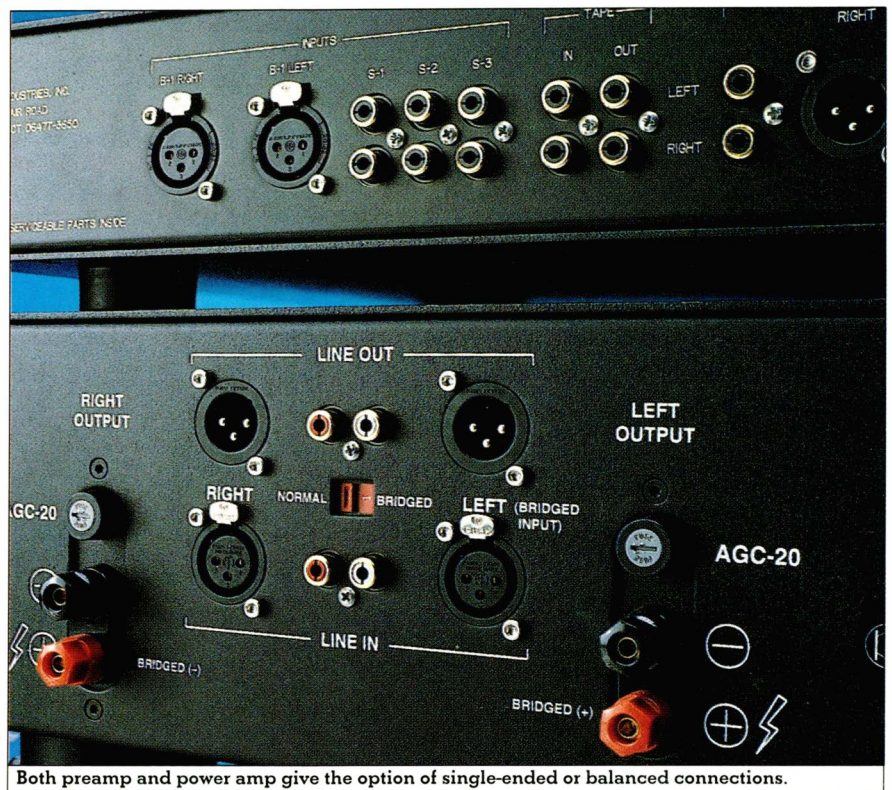
Krell recommends long interconnect cables and short speaker wires, as do most US high-end hi-fi manufacturers. By contrast, British companies usually design and recommend products that use short interconnects and long speaker cables. Whether this dichotomy is because many US high-end companies use balanced operation, or because some British manufacturers make speaker cables, largely depends on which side of the Atlantic you berth your cynicism. Regardless, this Krell duo does work best with long interconnects and short speaker leads and, as such, also benefits from balanced operation.

The preamp and power amp combination faced a brace of different components in my system. Digital sources included my resident Meridian 508, Theta's Miles (tested last month) and the Resolution Audio CD50 (tested on page 49). As the Krell preamplifier has no built-in phono stage, my Linn record deck took a well-deserved sabbatical.

I hooked up to a Meridian 502 preamplifier and 557 power amplifier, with the sound waves coming courtesy of the idiosyncratic Rehdeko RK II 5a speaker (HFC 167).

The interconnect cables included Cable Talk Professional balanced, plus custom-made Mogami Neglex and Nordost Reference single-ended designs. DNM, Exposure and Nordost Reference were the speaker cables of choice. Everything sat on the obligatory Mana tables.

With the power of 20:20 hindsight, the RK115a was not the best choice of loudspeaker for the KAV-250a. Partnering a 250W amplifier with a pair of speakers efficient enough to produce PA levels from a 2W triode design is not wise. Fortunately, both the Resolution Audio and the Theta CD players have excellent on-board volume controls, so I could use the amps at realistic output lev-



els. I also gave the Krell duo a quick blast through a pair of B&W DM805 monitors to see how they would fare with a more conventional speaker.

An amplifier and a gentleman

I need not have worried. The Krells behaved with restraint, control and tact, no matter how much I attempted to embarrass them with unsuitable partners. These amps were not over-controlled, but simply acted as diplomatic advisors between music and speaker. Whatever the speaker, the

Krell amps pin it down and refuse to let its sound

become wayward. The

overall effect was of

an exceptionally

detailed performance

right across the

frequency spectrum.

There was no

partisanship in the

Krells' performance:

they would reproduce a

kettle drum with the same

fidelity as a piccolo, a bass guitar just like a synthesiser or hi-hat. It was hard to find discs that highlighted particular strengths; where it excelled, it did so with all music.

Strangely, this even-handedness did not make it the most dynamic amplifier system around, but the dynamic structure of the sound was always faithful to the music. There were none of the wild dynamic swings found in single-ended triode designs. (To the average Krell buyer such dynamics would sound uncontrolled and imprecise.)

Imagery and solidity — always Krell strong points — are superb in this duo. Together they throw out a wide-ranging and

deep soundstage, yet one which avoids the airy-fairy insubstantiality of many a hi-fi system. Even the preamplifier (often the weak link in the chain), proved a robust performer. Using a CD player with a volume control gives the option of direct input to the power amp. Any preamplifier in the chain is going to hold back the sound by contrast, but the Krell model did considerably less sonic damage than most. It does have its own sound — a small lift to the upper mid and treble — but this is effectively inaudible in normal use.

Thanks to the Internet, there is a strange Chinese Whisper floating around which claims the KAV-300i integrated amp and this duo are bass-light. Let's quash this rumour now: these products are only bass-light when compared to big Krell muscle. Then again, even minor earthquakes would be judged bass-light in this comparison. Moreover, in some respects, the KAV range has the edge over its bigger brothers. With less big-time electronics in the chain, the KAV series is more adept at wading through complex rhythms than I remember old style Krells being capable of.

Normally, when testing a preamplifier and power amplifier, one component dominates — one will be slightly better than the other. That is not true here. These two are a perfect couple in every respect; but even if you split them up, neither suffers in the process. In subjective terms, both models are as good as you are going to get at the price. The true strength of the Krell KAV-250 combination is solid performance. If you want your music to be close to the sound from the original disc, yet not so ruthlessly analytical that every other CD is virtually unplayable, the Krell kombo kicks keister. ▲

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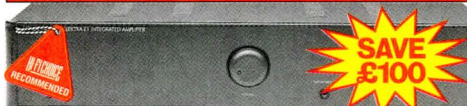
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Silver Machine

Resolution Audio is the latest US high-end manufacturer to plump for a one-box CD player. Alan Sircom finds out more about the new CD50.

If Resolution Audio is not yet as much of a household name as some US high-end brands, it will be soon. The company is among the small consortium proposing a next-generation music-replay format based on the DVD Audio specification (the so-called 24/96 DAD movement, as reported on p9 of *HFC 176*), and soon it will launch its first high-tech, two-box, DVD-based DAD player. In the meantime, Resolution Audio's first integrated CD player, the £2,995 CD50, ably demonstrates why the company beats the big boys at the tech game.

A few years ago, Resolution Audio was best known for multiple-box CD players. In particular, the company had brewed up a unique blend of fully-balanced digital audio in a separate CD transport/DAC combo. However, with the CD50, Resolution Audio has answered the growing calls from audiophiles for one-box players.

Single-box players have become the rage among high-end aficionados, and for a good reason. In former years, it was believed most important to physically separate the transport mechanism and conversion circuitry, to prevent interference between power-supplies driving the transport mechanism, and those supplying the digital circuits. In recent years, however, it has become clear that two-box players are very susceptible to digital jitter (inaccuracies in the digital code representing music). Thus waxes the one-box solution.

Until recently, the CD50 had no digital output (left out for fear of sonic degradation) but improved technology has permitted the inclusion of such a socket — for digital recording rather than upgrading. Sceptics may defeat this output by adjusting internal DIP switches.

The rest of the internal specifications read like a digital engineer's wish list. There's a Philips transport mechanism with custom-designed servo circuit, then a Pacific Microsonics PMD-100 digital filter chosen



Resolution Audio CD50 "Argument for the continued existence of CD."

not only for its HDCD capability but also because it is one of the best sounding digital filters around. Next up there are four Burr-Brown 20-bit PCM63P-K digital to analogue converters; current-to-

voltage conversion is passive, allegedly to keep impedance constant and maintain linearity. Unlike many pseudo-balanced CD players, the CD50's use of four chips allows it to offer fully balanced operation, in which the signal is supplied by a three-pin XLR connector isolated from the ground plane, and thus should suffer less noise. There are phono plug outputs, too, known as single-ended because the audio signal is developed between a 'hot' connector and earth. Usually this implies greater susceptibility to noise, but in the CD50, theoretically-quieter balanced signals are summed at the phono output.

When the chips are down

The CD50's output stage has a micro-processor volume control. Unlike cheap, low-fi systems in which digital information is manipulated, here two CS3310 chips electronically route the signal through different resistors to attenuate only the signal. (The same silicon serves in some high-end preamps to replace traditional volume pots.)

The best digital designs possess highly regulated power supplies — in the CD50 power systems occupy half of the circuit-board, and the toroidal transformers would not look out of place in an amplifier.

Its casing is slightly smaller than the standard 19-inch rack-mount. Yet, with its solid build, silver front panel and bright blue dis-

play, this player is no shrinking violet. Like most US high-end products, it benefits from exceptional build quality.

Resolving power?

Having slotted the CD50 into my Meridian/Rehdeko reference system, I compared it with rival CD players the Meridian 508 and Theta Miles (*HFC 176*). I used the CD50 in both balanced and single-ended modes, both with and without a preamp.

It's a bit of an iconoclast, this one. It eliminates many of the preconceptions that surround digital replay. It doesn't try to create a rich, warm, analogue sound, but instead tries to make the signal as detailed and as precise as possible. All the normal attributes of good CD are there, yet this is without hardness or the steely brightness normally associated with the breed.

Best of all, your heart will thrill as much to music as your head responds to the detail portrayed. There is a sense of technical exactness, but never the impression that precision is more important than vivacity of performance. This becomes particularly true with live jazz recordings, which need both precision and musicality to enliven the sound. Without this verve, the CD50 would be just another digital-sounding machine that rendered unlistenable the sound of rough-edged bands like Rage Against The Machine. Instead, the CD50 seems to make the most of 16-bit digital audio. As a CD-player-cum-preamp, the CD50 is almost as good. Only at whisper-quiet levels does the sound become flat and listless.

24/96 DAD will be in safe hands as long as Resolution Audio is involved. But the CD50 makes a very cogent argument for the continued existence of CD. ▲

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Welcome to the Pleasuredome

Paul Messenger discovers Audio Spectrum, a new speaker company whose standmount designs compete with floorstanding giants.

I have been reviewing speakers for over a decade now, which is quite a long time in hi-fi. Nowadays, sometimes it's hard to get excited when someone rings up, introduces himself as a speaker designer, announces he's formed a new company, and wants my ears first to hear his new baby.

I don't always discourage such initiatives, but so many candidates have trodden the same path, I know that reviewing early products isn't always in everyone's interest. A rave endorsement isn't much use if the production facility is one man, his dog and the potting shed, and the only dealer is Mr Direct Sale. By contrast, damnation with faint praise might bury the operation before it's had a chance to get started.

I had to bear in mind these caveats when former Heybrook man Stefan Venetos called to discuss his new Audio Spectrum brand, and the Xanadu speakers in particular. I met Stefan (in his distributor's guise) a few years ago, when I reviewed a pair of Greek full-range ribbon Analysis speakers for *Choice's* high-end supplement *The Ear* (HFC 136). He proved then that he really understands loudspeakers, so it seemed like a good idea to give his new enclosures a whirl.

And I liked them. In fact, I like them a lot — more and more each time they've been lugged into the listening room over the past months. In a manner, they have sneaked up on me — by rights, Xanadu is not the sort of speaker I should like. It's quite small (for a £1,595 speaker anyway), and it has quite low sensitivity: approximately 85dB/Watt on my conservative measure. Moreover, it uses an exceedingly complex conjugate-load-type crossover network, codenamed ICS (impedance correction system).

On the basis of that thumbnail sketch, this speaker flies firmly in the face of my prejudices; but I cannot avoid the conclusion that Xanadu is an exceptionally good speaker. It is seriously nice in almost every respect, so much so that I have struggled to criticise anything significant about this design.

Indeed, it has forced me to reappraise my own predispositions, and to be less inclined to specious generalisation. The only quibble is that the Xanadu generates less dynamic tension than a high sensitivity speaker.

In its own right, the Xanadu offers a dynamic range of absolutely superb quality, thanks to the combination of top-class SEAS-sourced drivers with large magnets; and an ultra-tough, highly-effective enclosure. The total cabinet weight of 18kg is more than that of many floorstanders, thanks to a mixture



Audio Spectrum Xanadu
A great new all-round standmount;
but a hefty one at 18kg!

of 30mm and 22mm MDF (medium density fibreboard) panels.

I perched the Xanadu on top-quality Kudos S100 stands, though now Audio Spectrum is offering its own brand of support, included in the price. When the boxes are positioned a respectable distance from walls or corners, they generate sound which is superbly transparent and coherent top-to-bottom, with a close-to-ideal room balance.

The midband is unusually smooth and flat, bass alignment is very well judged indeed

(-20Hz in my room), and unwanted midbass boom is avoided. The presence band is on the laid-back side of neutral, so the speaker is pretty tolerant of aggressive recordings or equipment. It can be driven hard without distress, yet still delivers the goods during 'after midnight' low-level listening.

Can Messenger forego efficiency?

This praise notwithstanding, I still hanker for high-sensitivity speakers. The only problem is that these tend to be physically huge, and since their size is dictated by the physics of acoustics, super-efficient speakers are confined to a ghetto of seriously-committed enthusiasts who aren't interested in looks.

In fact, loudspeakers are usually something to be tolerated rather than welcomed, and small size is considered a major plus point. The relationship between size, bandwidth, sensitivity and loudness capability is a pretty rigid equation. You can have small, but only by sacrificing some or all of the other three, as the following examples show.

The Xanadu reminds me of the two Wilson benches floorstanding speakers I tried recently (HFC 162/169). It has a similar balance and bass extension to the Actor and A.C.T. One, but the smaller box and single main driver mean the overall sensitivity is about four dB lower — and of course the price is quite a lot less too. The Tannoy 215DMT — a large studio monitor speaker with twin 15-inch drivers — offers a similar balance and bass extension. But you have to find room for a bigger box, though the payoff comes in a sensitivity (and hence headroom) that's roughly 12dB higher than the Xanadu.

A pair of Xanadu would be an excellent prospect for the domestic environment, and for volume levels that most people will find adequate. It's not for headbangers, and potential purchasers should take amplification into account. Power handling is not the issue here — the main driver is claimed to handle 400 Watt programme peaks without risk — but powerful high-quality amplifiers don't grow on trees and can make a dent in the savings.

It must be acknowledged that £1,595 is a hefty price for a reasonably compact stand-mount (even if it does include the stands), but this speaker is altogether more capable than the smaller 'luxury miniatures' I've tried — and more than a match for most comparably-priced floorstanders too. Hopefully I'll get a chance to try it in the context of a group test, but I have little doubt it will match all comers below £2,000.

It also looks exceptionally elegant, and succeeds through subtle understatement, rather than hit-you-over-the-head impact — a subtlety that comes only from the sort of extended, painstaking development that's a rarity these days. This is one newcomer which truly deserves to succeed. ▲

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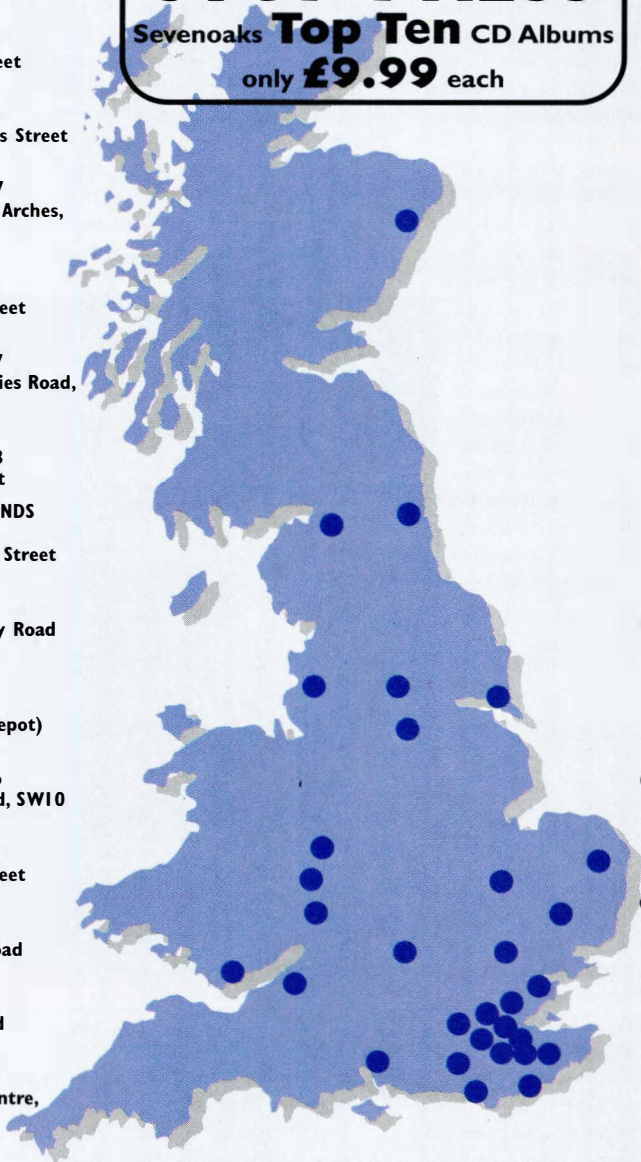
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Dubno MiniDisc With my Headman!



Six years after its launch, MiniDisc appears to have put down roots as a genuine home recording format. **Richard Black** tries out five new models.

MiniDisc first appeared as long ago as 1992, though few people would have seen one around then. At the time of its launch, it was facing a rival in the shape of Digital Compact Cassette (DCC). For a while it looked as if neither format was going to swim, and despite efforts by Philips, DCC gave up the ghost a couple of years back. MD, however, has managed to cling on.

In fact it has done a lot more in Japan, where sales of MD decks are now almost equal with cassette decks, except at the bottom of the market where nothing can touch cassette. There are signs that the system is catching on in Europe, with a number of integrated systems incorporating an MD deck, and growing numbers of portables turning up in High Street retail chains.

MiniDisc is like a cross between CD and computer floppy discs. The actual recording medium is a magneto-optical disc, kept in a plastic housing about half the size of a CD. The replay method is similar to that of a CD, and according to Sony it is possible to record on or erase the disc up to one million times. The discs are fairly robust (although they can it appears be damaged by very strong magnetic fields) and are estimated to have a stable life of at least 20 years.

The amount of data the disc can hold is much smaller than that of a CD, and in order to obtain the recording time of 74 minutes it is necessary to compress the audio data to fit, by a factor of about 4.7 to 1. The only way to do this is to abandon the ideal of making the replayed signal an exact replica of that recorded, and instead rely on psychoacoustics to determine which elements in the signal are audible and reproduce those accurately, using a system called Adaptive TRansform Acoustic Coding, or ATRAC. Thus this is strictly 'lossy data compression' or 'data reduction'; other examples are Dolby Digital (AC-3)

THE CAST LIST

Denon DMD-1300	£499.99 . . .	p53
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Sharp MD-R2	£299.99 . . .	p56
Sony MDS-JA30ES	£699.99 . . .	p57

and M-PEG surround sound, and the RealAudio format used for Internet sound.

Although there has been investigation into data reduction techniques, it is clear that when the output doesn't even claim to be a perfect replica of the input, there is scope for audible information loss, and the claimed 'inaudibility' of the ATRAC system has been questioned. Indeed the system has been upgraded over the years (with backwards compatibility so that discs recorded on a first-generation player will still play on new machines, and vice versa). The latest version of ATRAC is 4.5; the machines

HOW THE TESTS WERE DONE

Because most MiniDisc recorders will be used to copy from CD, the bulk of listening was done with a digital input, recording to disc and replaying through analogue outputs (in 'Record Pause' mode all MiniDisc recorders function as a DAC and to hear the effects of ATRAC coding the music must be recorded and played back). Each machine was auditioned via its analogue inputs, and briefly via the digital input at 32kHz and 48kHz sampling rates, to check performance of the converter which is built into all current MD recorders. Music used included *Ambrosio* by Guzman on Sonora, *English Suite* by Alan Bush on Redcliffe, Ronald Stevenson playing *Busoni* on Altarus, *Alto* by Joe Beck and Ali Ryerson on DMP, and assorted Pink Floyd. Other equipment included a Micromega CD player, a Sony DAT recorder, an EAR amplifier, speakers by ATC, speaker cables by Goertz, interconnects by BICC and optical cable by Kimber.

reviewed here include either version 4 or 4.5. While the idea of data reduction is in many ways repellent, remember that the proof of the pudding is in the eating.

The MD system was designed to offer some handy user functions, in particular the ability to edit recordings and to give titles to tracks and discs. Once a recording has been made, it is possible to rearrange the material on it at will, subject to a few practical restrictions: you can't have edits closer together than about 15 seconds and you can't have more than 255 tracks on a disc. There are four basic functions which achieve this: Erase, Move, Combine and Divide. Erase is obvious. Move allows the ordering sequence of tracks to be altered, so that material can be shuffled around in the play sequence (no actual sound data is moved, just pointers to where data must be extracted next). Combine allows two tracks (normally two consecutive tracks) to be joined into one, and Divide splits one track into two. By performing these functions in the right order it is possible to rearrange tracks in almost any permutation.

This works because all MiniDisc players include a 'read-ahead buffer' which stores the next 10 seconds of music in semiconductor memory. Thus the laser read head can scan ahead to find the next track, wherever it might be, while the audio circuit is still spitting out the signal picked up by the laser several seconds before. Obviously this can't happen infinitely fast, hence the limitations on editing complexity, but it does mean that edits are completely seamless, unlike track search on a CD, which must happen in real time.

As for titles, these can consist of upper and lower case letters plus basic punctuation, to a maximum of about 100 letters per title and 1,700 letters per disc. Entering titles can be a bit of a pain, but it's a good way to keep track of your recordings!



DENON DMD-1300

Denon has built up a lot of experience in MiniDisc equipment manufacturing, being the biggest name in professional MD gear. MD has found great favour with broadcasters for applications like jingles and adverts, which can be recorded and played back more easily, cheaply and reliably than with the old 'NAB cartridges', and Denon seems to have cornered the market. Given Denon's well-respected name for CD players, the ground seems to be prepared for a good line in domestic MD.

The DMD-1300 uses a Sharp mechanism, connected to a single audio board which includes converter chips from Burr-Brown along with the usual general-purpose audio op-amps. Externally, this is the meanest of the five machines here in terms of connections, with only one (optical) digital input and one output, plus audio in and out — no system remote, coaxial digital or spare optical input. There is a headphone socket on the front, and slightly more variety in front panel buttons than on many machines, making for less confusing operation — a definite plus! The usual editing and titling functions are available and the unit can convert from 32kHz and 48kHz sampling rates.

One point to note is that the power switch of the DMD-1300 does in fact switch off the mains, making it easier to damage a disc by failing to write the Table of Contents (ToC) after recording. However, a battery-backed internal memory will keep the ToC data for a couple of days, so all is not lost if you acci-



dentially switch power off before ejecting.

Operation is about average. Basic recording and replay operations are simple and the controls are sensibly laid out.

The bar-graph level display is small but has good resolution. Searching within a track is a bit slow, and track sequences can only be programmed from the remote. Title entry is pretty straightforward, but track editing is rather crude, with no rehearsal function. Finally, reading and writing the Table of Contents on a disc before playing or ejecting it is rather slow (around 10 seconds), compared with the other machines in the test.

Sound quality

The performance of the DMD-1300 worked out at par for the course, certainly no worse but not hugely better. It has some good points, notably a solid, assured and clearly defined bass, and it is completely unperturbed by heavy, complicated textures which thunder away most gratifyingly. Imaging can tend to be rather 'ping-pong', and there's not too much front-back detail, but the effect isn't too severe. The analogue input is just noticeably cleaner than average.

What did seem to be a drawback was the '1300's tendency to 'peel the music apart'; separating thematic strands which ought to be a homogeneous whole and somehow

offering them individually. It's somewhat analogous to being presented with separate plates of food, each one containing lettuce, or cucumber, or tomato, instead of one single plate with the whole lot. This wasn't a major feature, but it did seem to be consistent, trivial but slightly irritating, across a range of music — at least, anything with more than a couple of instruments involved. Still, plenty of hi-fi products have the opposite effect so this might be complementary in some circumstances!

When there is only a simple texture to follow, for instance solo piano, the Denon's very good tonal balance can be appreciated to the full, and this was probably about the best in the group. If there seems to be a generic tonal trait to MiniDisc, it is a slight dulling (there is indeed a small treble loss in most situations), and the Denon seems to suffer from this only very mildly.

Conclusion

Overall, then, nothing to get excited about but its character has some points which might appeal. The price is perhaps a little on the high side for what's on offer by current standards, but it's certainly worth a try.

DENON VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £499.99

- ☐ Sound sometimes lacks integration but tonal balance is good and it handles loud music with panache.
- ✉ Denon, Hayden Laboratories Ltd, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG
- ☎ (01753) 888447

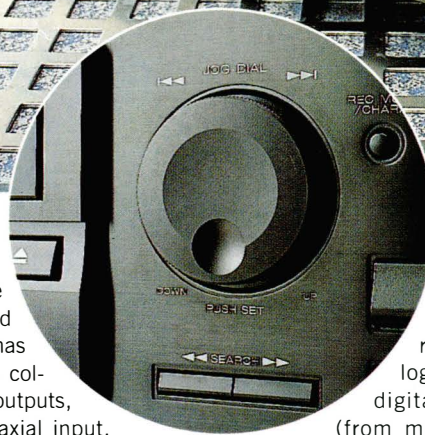


KENWOOD DM-9090

This is a large and imposing machine, and from first glance it is obviously well equipped with features. For a start, it has an unusually comprehensive collection of digital inputs and outputs, with two optical and one coaxial input, plus one optical and one coaxial output. The front panel boasts of '20-bit Rec D.R.I.V.E. [Kenwood's fancy name for Analogue to Digital converter] & 24-bit D/A converter'. Although this may seem excessive for what is essentially a 16-bit format, there is some logic in making the most of digital 'words' generated in any system which uses digital signal processing, as of course MiniDisc does by its nature. It is theoretically possible that MD could give results subjectively better than plain 16-bit PCM, in certain areas.

As with the Denon machine, the DM-9090 has a front panel power switch which actually cuts mains supply (rather than simply entering Standby mode), but to prevent accidental loss of the Table of Contents if the machine is switched off after recording, the ToC is normally written immediately after recording. This feature takes a few seconds and can be switched off, but seems sensible.

Control layout is friendly, and basic operation is fine. Things get more interesting when one investigates the more advanced editing and option features of the recorder, some of which are not obvious without the manual (although this is, at least, well written). Many useful features are present, including rehearsal of edits and adjustment of edit points to an accuracy of about one-16th of a second, adjustable threshold for



inserting new track numbers on record, double-length mono recording (analogue input only), digital level control (from minus infinity to plus 12dB) and automatic fade-in/fade-out on digital recording, with adjustable fade times. Title entry is conducted as usual with the 'jog' dial, but is actually slightly quicker than on many machines. The only annoying feature is searching within a track, which is not particularly fast and takes a second or two to latch on when one releases the button. A few functions, including programming, can only be performed with the remote.

Sound quality

Sound rated equal second with the Sony — maybe because both machines use the same version (4.5) of ATRAC coding? Whatever, the overall picture was of quite rich sound with good midrange detail and generally quite extended treble. If there is a weak area it is imaging, and in some pieces of music it felt as if images were not quite as stable as they should be; indeed they tended to wander a little between the speakers. This was particularly noticeable, for instance, with the opera excerpt (*Ambrosio*, an audiophile production recorded with only two microphones and therefore excellent imaging). At the same time, front-to-back imaging was somewhat compressed. The latter is a common failing in equipment from cables to CD players, but images which actually

move around are a bit more arcane. Still, it's not particularly distracting and frankly hardly noticeable in most recordings.

Solo piano did very well, as did small jazz ensembles, with nice clean percussion and only a hint of 'processed sound' on very subtle instruments. Both these genres showed up the DM-9090's evenhanded balance and strongly defined — but never overstated — bass, and never induced the dreaded listener fatigue. String orchestra developed just a slight glaze (but when did you ever hear one recorded without some of that?), and solo voice acquired a degree of roughness on sibilants but preserved its character well and lost next to nothing of intelligibility.

Conclusion

For all those small quibbles, this is clearly a capable machine, and is no less impressive via the analogue inputs which are quiet and transparent. It has a comprehensive and useful set of facilities and is fairly straightforward to use. Most importantly it has none of the 'uninvolving' quality which seemed to characterise early MiniDisc recorders. It's not the cheapest machine around but its price seems very fair for what's on offer, and it is therefore Recommended.

KENWOOD VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£549.95
<input type="checkbox"/>	Slight sibilance and image vagueness do not detract from excellent balance and solid bass.
<input checked="" type="checkbox"/>	Trio-Kenwood, Kenwood House, Dwight Road, Watford, Herts WD1 8DE
<input type="checkbox"/>	(01923) 816444



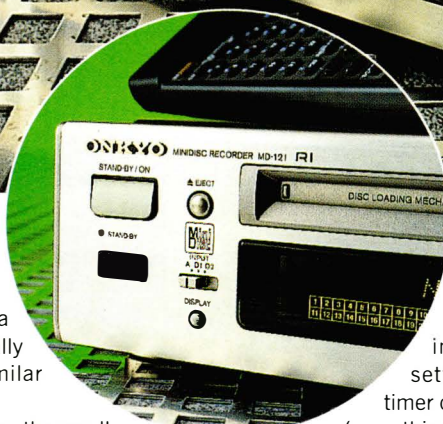
ONKYO MD-121

By contrast with the other machines in this review, the MD-121 is a very slimline unit, actually part of a range of similar products from Onkyo.

There's no reason why the small size should make it in any way inferior to larger machines, given how much fresh air most of them include, and indeed its innards look similar in complexity to those of the Denon and Sharp recorders. For ease of operation, the display needs to be a certain minimum size (given the number of things it has to show), and Onkyo has achieved this without restricting the area for controls.

That said, the record level control is very small and fiddly, and has no facility for independent adjustment of channels; it does look rather as if the designers took it as axiomatic that a MiniDisc recorder is likely to be used mostly with digital sources. Inputs, both optical, are provided for two of the latter, and there's one optical digital output besides. Despite the apparent scarcity of controls on the front panel, the unit is well featured, with the usual title editing functions, and disc editing functions including a rehearsal to get things neat and tidy, editing points being adjustable in 16ths of a second. Most functions, including programming, can be performed without the remote control (am I the only person in the world who finds remote controls a pain for anything more than basic functions?).

In addition to the usual hand-held infra-red remote, there is the option of remote control via a complete Onkyo system, using



a pair of rear panel connectors. This allows functions like synchronised recording from MD to cassette, or CD to MD, or timer operation from a tuner (something not otherwise available on this unit). Unlike many MD recorders, it is possible to record while directly overwriting an existing track, rather than having to erase it first.

Sound quality

Sonically, this Onkyo never quite convinced. It's a safe performer and never did anything really offensive, but it just wasn't as involving as the best. On the plus side, it produces a sound which is solid and immediate, for instance with good attack and bite from unison orchestral cellos — a texture that can easily become weak and lacklustre. Solo piano has good body, and voices communicate well. So far so good, but in the long term it never entirely gels and there's always the feeling of something being not quite right.

In part this may be due to a slightly 'plasticky' quality to the sound which is characteristic of a few CD players (mostly, these days, cheaper models). It's a coloration in the upper midrange which can become rather fatiguing and makes one lose concentration on the music. And even when that's not so evident (it's most obvious in material with lots of transients, such as piano or lively jazz) there's still a slight lack of engagement with the listener, frankly rather reminiscent of the early days of MD.

For all that, the MD-121 performs well with some kinds of music. It was as successful as any of the machines with the string orchestra selection, for instance, which (although it was slightly roughened) stopped well short of becoming screechy and harsh. It was really rather good at background music — smoochy dinner jazz and that kind of thing. Whether by accident or design I don't know, but it seems to fit in with the 'lifestyle' image of the unit!

The analogue inputs are reasonable, though not the finest ever; compared with digital copying they give a slight veiling but nothing serious. Interestingly, the high-frequency response of the MD-121 is actually very slightly lifted, which suggests an attempt to compensate for MD's inherent (supposedly inaudible) treble loss. This would tie in with the deck's immediacy, as noted above.

Conclusion

If that immediacy were coupled with better involvement this would be a fine recorder; as it is, it falls short of the standards set elsewhere at the price. Onkyo system users and other lovers of the petite will not find it unpleasant, though.

ONKYO VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £499.95

- 📁 Midi-sized deck that sounds slightly coloured at times, though immediate and lively.
- ✉ Onkyo UK, Audio Club, Unit 15, Faraday Road, Aylesbury, Bucks HP19 3RY
- ☎ (01296) 482017



SHARP MD-R2

As one of the two (to date) manufacturers of MiniDisc mechanisms (the other is Sony), Sharp has something of an advantage when it comes to budget recorders. Even though the MD-R2 costs half the price of its nearest rival here, it's hard to see any corners that have been cut. Most obvious in the low-price area is a high level of integration inside the unit: here there is only one sparsely-populated circuit board apart from those within the mechanism and display sections.

Features are surprisingly plentiful. There are both coaxial and optical digital inputs, and one optical output; a headphone socket, sample rate converter and editing functions. The one item which does look a bit cheap is the display, which although of similar size to those on the other machines is of lower resolution, and so cannot display as many items at one time. You get a choice between title and recording level, but then is that really a problem? One really only applies on record and the other on replay, so it seems fair enough. The metering is crude, with relatively large steps, but it serves. As with the Onkyo and Denon recorders, there's no recording balance control, and a minute record level knob. Front panel layout is a little bizarre, with the jog dial a long way from the 'Play' button, but most functions can be performed without the remote.

Those caveats made, things pick up on the features front. Unusually, but very usefully, there is a real-time clock built in (Year 2000 compliant to boot!) which can be used



for timed recordings; this feature has been taken for granted for years in video recorders and it's about time audio manufacturers got round to it. The same clock also date- and time-stamps recordings, another useful trick. And the deck can record in long-play mono mode, not only from the analogue inputs but also the digital, giving nearly two-and-a-half hours of recording time. Editing of tracks and titles is pretty much as usual; there's no rehearsal function though.

Sound quality

If there's little evidence of cost-cutting in the features list, there's less in the sound. The downside is a degree of hardness and a slight bass lack — the two things possibly related. Monitoring the input in record pause (which bypasses the ATRAC coding and effectively uses the recorder as a DAC) showed that this is largely a function of the DAC and audio output circuitry, and this deck may therefore be considerably improved by an external DAC, bearing in mind that for the difference in price between the MD-R2 and the next cheapest machine in this survey, you could have a choice of several well-rated outboard DACs.

Otherwise, there is not much to complain about. Midband has good presence and detail, and treble seems generally sweet and extended. To be really picky, one would have to concede that MiniDisc has so far not demonstrated completely pure treble, and

although this example is no worse than any others it does produce just a hint of grain and loss of sweetness on delicate sounds like high percussion instruments. Likewise, there is a small loss in the sense of acoustic space around instruments, which also has the effect of closing down the stereo image a little. Then again, the MD-R2 did well at reproducing a front-to-back image.

The one area where most of the decks did well, solo piano, was a bit of a weak spot for the Sharp. Although the sound was immediate and detailed, there was some loss in body and scale, not only through the internal DAC but when using an external one. The same effect was felt to a certain degree in rock, though here it was really very slight and only noticeable in direct A-B comparisons. The analogue input seemed fine, only minutely behind direct digital input.

Conclusion

Evidently, this recorder is not at all shown up by much pricier comparison, and is indeed a good example of the standard that we can generally expect from current-generation MiniDisc. A few minor irritations on the ergonomics front are not going to stand between it and a Best Buy rating.

SHARP VERDICT	
SOUND	★★★★☆
VALUE	★★★★★
PRICE	£299.99
☐	Loses little or nothing in comparison with more expensive models — very capable.
✉	Sharp Electronics (UK), Sharp House, Thorp Road, Newton Heath, Manchester M40 5BE
☎	(0800) 262958



SONY MDS-JA30ES

MiniDisc is already the true gadget freak's format; Sony is obviously well aware of that and this deck is just the most gadgety thing ever. The only gizmo it lacks, according to the manual, is long-play mono mode (though it will play back discs recorded that way). I wouldn't be surprised if some hacker found the feature lurking among the control sequences somewhere. The full features list is as follows (deep breath).

One coaxial and two optical digital inputs, plus one optical output. Separate analogue and digital record level controls, the latter operating over the range of minus infinity to plus 12 dB, in steps as small as 0.1dB. Digital output level control. Fade-in and fade-out recording and playback start and stop, with separate adjustments for fade-out, in increments of 0.1 seconds and with a selection of curves too. Adjustable thresholds in level and time for detecting the start of a new track on recording. Selectable 16-bit or 20-bit word length on the digital output. A choice of DAC reconstruction filters, to tune performance to taste. A real-time clock which records time and date of recording automatically on every disc (yes, it is compatible with the Sharp!). 'Time Machine' recording that records music from six seconds before you hit the 'Go' button.

Apart from the usual editing functions,

Sony has made things simpler by providing for erasure of part of a track and true random combining of tracks rather than restricting this to consecutive tracks as on most machines, thus saving at least one editing step. And not only do you get a rehearsal, but you can adjust the edit point in increments of minutes, seconds or frames, a frame being the basic unit in which sound is stored on a MiniDisc, about 11ms.

That's about the accuracy of a skilled tape editor on analogue tape, and one can do very sophisticated edits in the middle of a passage. It takes a little time and there are restrictions on how often within a disc and/or track one can edit, but it's pretty nifty.

If you suddenly realise that you've got it all wrong, there's an Undo function for the last edit. Finally on the 'I want one' front, the remote is one of the best-designed I've seen, with outsize buttons for Play, Pause and Stop to make things really easy.

Sound quality

All that would be wasted if the deck didn't sound reasonable; fortunately it's better than that. Let's not get carried away, the data reduction is not inaudible, but it conceals itself well. The area where the MDS-JA30ES seems most lacking is the analogue inputs, which by comparison with the rest of the performance are rather muffled and veiled. The variable coefficient digital filter seems a bit of

a mixed blessing, since subjectively it offers nothing substantial over the 'standard' setting and objectively it seems merely to add aliasing distortion. Otherwise, it's for the most part a very transparent machine.

One of the acid tests was string orchestra, and the Sony made a relatively good showing although there was still some glare. There was, at the same time, a good degree of 'hear-through' detail to the sound and a pretty good sense of space. Solo piano was very solid and well defined, and voices, both single and massed, were very natural apart from just a hint of coarseness on sibilants. In the opera excerpt, the imaging seemed a little vague and lacking in depth, and in general this seems to be an area where MiniDisc has some catching up to do.

Conclusion

Bass is strong and clear, and the midband is natural and uncoloured. This is a very capable deck which shows potential for the medium. With a tiny bit more refinement, particularly to the analogue inputs, it could be stunning. The price may seem high, but the specification and excellent build quality certainly justify it, and all things considered it clearly warrants Recommendation.



SONY VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£699.99
📄	Amazingly comprehensive set of features and sound as good as any — the merest hint of coarseness at times.
✉	Sony UK Ltd, Customer Information Centre, Pipers Way, Thatcham, Berks RG19 4LZ
☎	(0990) 111999

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CONCLUSION

There are two 'bottom lines' to this review. One is an appraisal of how the tested machines compared with each other; but the other, no less important perhaps, is how they compare with the alternatives.

Alternative number one is obviously cassette. In the last 30-40 years cassette has come a long way. A top deck, with a premium tape, can make very fine recordings indeed of most kinds of speech and music, aided perhaps by Dolby B, C or S noise reduction systems to give a noise floor not quite on a par with CD but still acceptable for most domestic purposes. Frequency response on the best decks is substantially flat across the entire range of hearing and a little beyond. On the other hand, recording to cassette is always a struggle to balance the conflicting requirements of freedom from noise and freedom from distortion, and the format is by digital-age standards greatly lacking in convenience features.

So is cassette still valid, or has MiniDisc rendered it obsolete? Clearly, cassette will continue to rule for a long time as the ultimate budget king — no one is suggesting that MD machines can be made for a tenner. But with MD recorders now starting at £250 there are clearly grounds for considering this as a serious alternative above that mark. Granted, blank MDs cost more than even quite up-market cassettes and don't even play for as long, but in Japan they're down to about £2 rather than the £5 asking price in the UK, and the trend is downwards everywhere. Then again, anyone who has an existing collection of cassettes has an extra incentive not to change.

My feeling after conducting this review is that MD is a more-than-viable replacement for cassette. The sound is at least as good, the features are handy. OK, I know most people don't use any features beyond Start and Stop on their videos and MD may prove the same, but for the odd time one wants them, they're nice to have! Importantly the consistency of MD is far better: how many times have you swapped tapes with a friend to discover that theirs sound awful on your cassette deck and vice versa? The other alternative at the moment is CD-R, not to mention CD-RW, and the ante was recently upped considerably in this area by the Philips CDR870 (HFC 174). This has many advantages over MiniDisc, not least that CD-Rs (though not CD-RWs) will play on the billions of CD players already in use, and the running costs are currently lower than MD. From a sound quality point of view CD-R is preferable too, since data is copied wholesale and unreduced. MD only scores on size and flexibility. The jury's out; I suspect that ultimately there may be room for both systems.

Looking at the five machines here, the differences in sound quality between them, and between them and CD, are not greater than one might expect to find between a group of similarly priced amplifiers. Two



machines failed to win formal Recommendation, but not due to any horrible faults in performance; they simply don't seem to offer such good value as the others. Of the other three, two win Recommendation on the simple basis that they sound good, judged principally as digital-in, digital-out devices, since it seems likely they will be used this way most often.

Both the **Kenwood DM-9090** and the **Sony MDS-JA30ES** demonstrate that the principle of data reduction can actually work well, and both also offer a good selection of features and friendly ergonomics.

The Sony is clearly the more flexible machine but on sound the pair are neck-and-neck overall. The Sony perhaps wins on digital performance but the Kenwood offers the better analogue inputs, so the Sony's price premium would seem to stand or fall on the extra functions available.

As for the **Sharp MD-R2**, its performance is close to the Sony and Kenwood machines, at well under half the cost of either — and half the cost of the cheapest CD-R to date, as it happens. It's also on the whole a nice machine to use, and could hardly fail to be given a Best Buy.

DAVID VS GOLIATH

Paul Messenger (listening test) and Paul Miller (lab test) compare equal-priced standmount and floorstanding speakers. Is small beautiful?

With the cheapest model pitched at £230 and the most expensive costing £650, this 14-strong group comprehensively represents the broad popular marketplace, at prices just above the budget entry-level sector. This group splits up naturally into chunks, giving us three reasonably sized sub-groups, with five models under £300, five priced £300-£449, and a further four between £450 and £650.

Price is one obvious yardstick when sorting through a stack of speakers, but size and type are equally relevant discriminators. Unlike other recent forays into this price sector, where floorstanders have dominated the scene, this group displays a 50/50 split between standmounts and floorstanders.

Is this an indicator of a standmount resurgence? I doubt it. There's no denying the fact that the floorstander is still the fashionable choice, and fashion has always been a major player in determining speaker sales. But it's good to see the standmounts hanging on in there — and proving that they're far from outclassed by their larger cousins.

Whatever the shape of the enclosure, the basic ingredients of all these speakers have a great deal in common. 13 of our 14 follow the classic two-way configuration, combining a bass/mid main driver with a tweeter.

Only Monitor Audio adds an extra drive unit to help out the bass, partly because it's one of only three models that eschew port loading of some kind to achieve augmented nether frequencies. The other two sealed-box systems are the NHT 1.5 and Castle Kendal, and whereas the NHT has a reasonably generous 120mm diameter cone, the Castle's 95mm cone is bound to deliver limited bass grunt without port assistance.

If the overall configurations of these speakers are rather similar, in detail they dif-

THE CAST LIST

MODEL	PRICE	PAGE
Acoustic Energy AE200	£249.95	... p63
B&W CDM1 SE.....	£599.95	... p78
Castle Kendal.....	£449.90	... p69
Celestion 23i	£299.00	... p65
Dynaudio Audience 5.....	£398.00	... p71
Eltax Linear Response 4.5.....	£249.00	... p66
JPW ML710...£229.99 (+£30 plinth)		... p67
Mission 750LE.....	£248.00	... p68
Monitor Audio Monitor 4	£499.99	... p79
Neat Mystique 2.....	from £575.00	... p80
NHT 1.5.....	£449.00	... p73
PMC TB1S	£430.05	... p75
Tannoy Precision P20	£399.90	... p77
TDL CF200 Cotswold	£649.95	... p81

fer quite considerably. Main driver cones are made from a variety of materials, including traditional paper and plastics, but also carbon fibre composites (Castle, TDL), aerogel (Mission), polyamide composite (B&W), and

metal (Acoustic Energy); while Tannoy's plastic cone incorporates glass fibre reinforcement. The materials used for tweeter diaphragms are also varied. To what extent these variations translate into sound quality is much harder to establish. As far as speakers are concerned, the whole is invariably greater than the sum of the parts.

Other significant factors influencing asking prices include size and quality of surface finish. A couple of the larger speakers in this group (Celestion, JPW) are also among the cheapest, mainly because they use low-cost woodprint vinyl rather than real wood. At the same time, there's a wide variation in quality between different real-wood finishes. However, since cosmetic value judgements are in the eye of the beholder, and there may well be significant variations between different samples of the same speaker, this is a difficult area for the review to comment upon. Trust your eyes *and* your ears.

HOW THE TESTS WERE DONE

With 14 speakers waiting in line, the 'blind' listening tests were spread over two separate days, allowing a number of repeats.

The speaker stands used with the bookshelf models were **Slate Audio** and **Kudos S100**. The main reference system used for the blind and hands-on work consisted of the usual collection of Mana-supported Naim and Linn components, viz: **Linn LP12** turntable, **Naim ARO** tonearm, **Linn Arkiv** cartridge, **Naim CDS** CD player, **NAT01** tuner, **NAC52** pre-amp and **NAP135** power amps, plus the **Audio Precision Eikos** CD player and **Musical Fidelity A1001** integrated amplifier. Speaker cables were **NACA5** and **Nordost SPM**.

WHAT MUSIC DID WE USE?

Music used during the testing included excerpts from the following albums. BBC Radios 3 & 4 were also used extensively during the hands-on work.

Leftfield: *Leftism* on Hard Hands HANDLP2D
Christy Moore: *Live at the Point* on Grapevine GRACD 203
Joni Mitchell: *Mingus* on Asylum AS53 091
Villa-Lobos: Uirapuru; Stokowski/Stadium Symph Orch New York/Everest/DCC Compact Classics LPZ-1003
Rage Against The Machine: (epon) on Epic 472224 2
LSO/Georgiadis: *Dancing in Old Vienna* on Enigma K53577
Fun Lovin' Criminals: *Come Find Yourself* on Chrysalis 37566 2 9
A Hundred Years of EMI: *chEMistry* on Vox EMI 100
Puccini: Turandot; Mehta/LPO on Decca SET 561-3

THE LISTENING PANEL

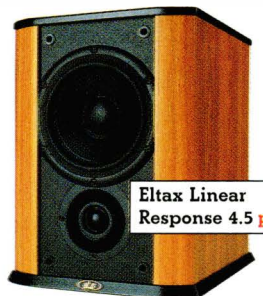
Thanks are due to panellists **David Inman** (Castle), **Robin Marshall** (Mission), **Russell Kauffman** (Morel, Densen), **Jason Kennedy** and **Stan Vincent** (*Hi-Fi Choice*), **Keith Haddock**, and **Mark Hibben** (Audible Elegance).



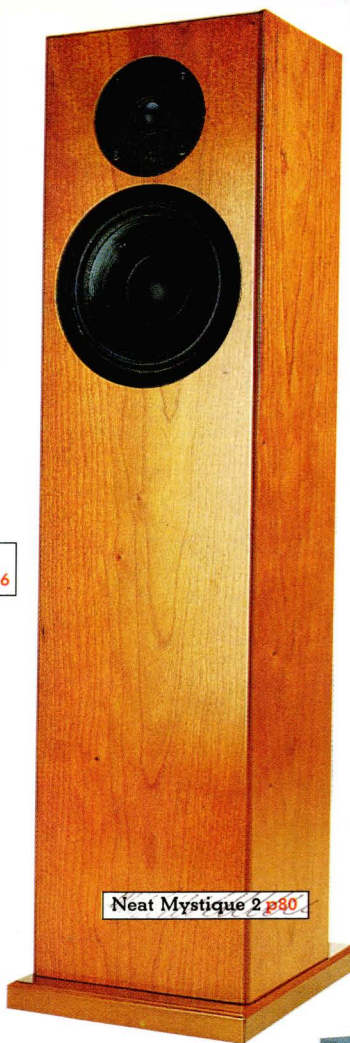
TDL CF200 p81



B&W CDM1SE p78



Eltax Linear Response 4.5 p66



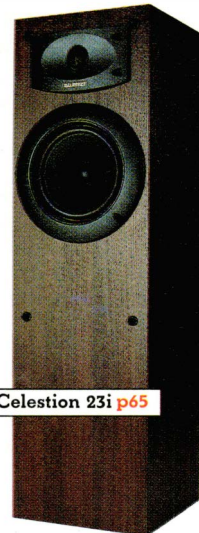
Neat Mystique 2 p80



JPW ML710 p67



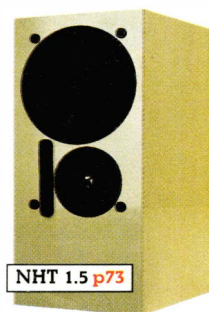
Mission 750LE p68



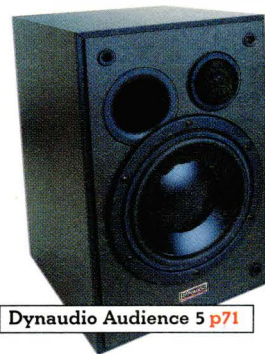
Celestion 23i p65



Monitor Audio Monitor 4 p79



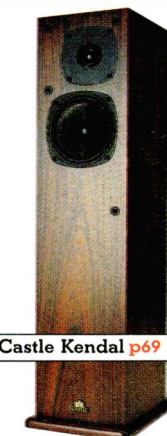
NHT 1.5 p73



Dynaudio Audience 5 p71



Acoustic Energy AE200 p63



Castle Kendal p69



Tannoy Precision P20 p77

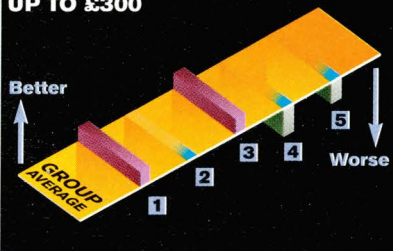


PMC TB1S p75

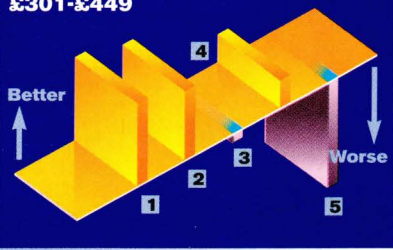
UNDERSTANDING OUR BAR-GRAPHS AND GROUP AVERAGES

There will be significant differences between the cheapest product in our test and the most expensive. For this reason we always segregate our test candidates into two or more categories based on price. Our aim is to assess every product's performance in the context of its closest rivals. Each lab-report panel is colour-coded according to the key given below:

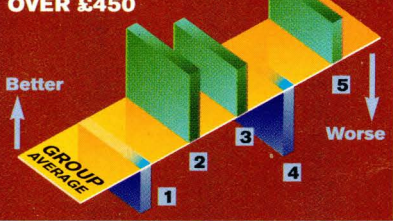
GROUP A EXAMPLE UP TO £300



GROUP B EXAMPLE £301-£449



GROUP C EXAMPLE OVER £450



UNDERSTANDING OUR BAR-GRAPH MEASUREMENTS

The measurements behind *Hi-Fi Choice's* unique bar-graphs are provided by our Technical Editor, Paul Miller, using both GPIB-controlled measurement hardware and his own, award-winning, PC-based Virtual Instrument software. Each bar-graph value is derived from a weighted statistic of several key measurements and is displayed relative to a notional zero per cent which represents the group average for that particular category.

1 Ease of drive

This statistic is derived from the reactive and resistive components of the speaker load, indicating how tricky it is for the amplifier to drive.

2 Relative loudness

The sensitivity of the speaker is measured at 1m with a 2.83V input across third-octave bands 17-29, then weighted according to the human loudness contour to indicate how 'loud' one speaker will sound relative to another.

3 Maximum loudness

This takes into account the speaker's sensitivity, distortion, the maximum useable amplifier power and the effects of placement in an 'average room' to gauge the maximum practical Sound Pressure Level obtainable from a given pair of loudspeakers.

4 Audible distortion

This valuable test momentarily raises the output to 96dB with dynamic signals through bass, midrange and treble. This allows us to assess distortion under realistic, transient conditions.

5 Bass Extension

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Photos: Paul Hanley Studios



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HI-FI CHOICE RECOMMENDED
 Mana Sound Frame
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 Q Magazine, Robert Mills, May 1997



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- ▼ **CONS:** A right royal pain to clean and dust

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Acoustic Energy AE200

Acoustic Energy has built a formidable reputation over the past decade, largely on the basis of its legendary little 'luxury miniature', the AE1. Without question, the arrival of this design in the late '80s spearheaded the introduction of metal-diaphragm speaker drive-unit technology — now employed by a number of brands to very good effect.

In recent years the company has addressed the mass-market loudspeaker sector, with the 100 Series models which employ more conventional drive-units. The floorstanding AE109 (Recommended, HFC 164), for example, is assembled offshore and supplied complete with mass loading. Its notable success has provided a platform for two further ranges, the 200 and 500 Series, which are also recent additions.

The 200 Series is based closely on the popular 100 Series, but is fitted with metal diaphragm drive units and made in the UK; whereas the 500s are more upmarket real-wood-finished floorstanders, more directly akin to the AE1.

The AE200 is a small standmount speaker, just slightly larger than the true miniatures, and carrying a £249 price tag which represents a comfortable premium over the budget sector. Part of the justification comes from using a metal-cone main

driver, the cone itself being 100mm in diameter, terminated by a foam-type surround. And although the box is only finished in a neat but prosaic black vinyl woodprint, it feels very substantial and solid, and is built from braced 18mm MDF. The front panel looks elegant and classy, with AE's logo and trademark 'twin port'.

Far-field averaged room measurements confirmed the expected desirability of close-to-wall siting, in order to give the bass a helping hand. It also showed a rather obvious and broad midband peak, +3dB 800Hz-1.4kHz, which will enliven and otherwise modify a well judged balance.

Sound quality

This is by no means the first time I've encountered a miniature speaker with a pronounced upper-mid peak. Nor is it the first time that such a speaker has sat behind the black curtain on a test and gone on to convince the panel that it's really something rather special.

The AE200 is indeed a good little speaker, but in the end is not quite as good as the panel made out. That midband emphasis makes an excellent first impression, by hyping up the detail a little, but after extended hands-on listening across a much wider range of music, a rather 'shouty' quality is revealed which can become tiresome — rather more so with speech than music, I found.

If it doesn't have the subtlest midband around, the AE200 scores pretty well in most other respects, and undoubtedly creates an involving and entertaining experience. The bass is firmer and cleaner than one expects from something so compact, even though the last few kilos of weight are

missing from the bottom octave. Both the small size and tough build probably contribute to a sound which is always quick and agile, with a good dynamic range and fine stereo imaging too.

Conclusion

Flawed but fun, the AE200 might be a little too characterful for some ears, and certainly doesn't have the most neutral midband around. But it did get the listening panel firmly on its side, and even yours truly is forced to admit that this cheeky chappie has charm by the bucketload. The price may well be a new low for anything with a metal-cone main driver, and build seems suitably tough too, all of which helps make the case for Recommendation. *PMc*



VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £249.95 (5 YEAR GUARANTEE)

- ☐ Metal cone miniature has a tendency to shout but is still lots of fun — and well built too.
- ✉ Acoustic Energy Ltd, 16 Bridge Road, Cirencester, Gloucester GL7 1NJ
- ☎ (01285) 654432

THE LAB REPORT

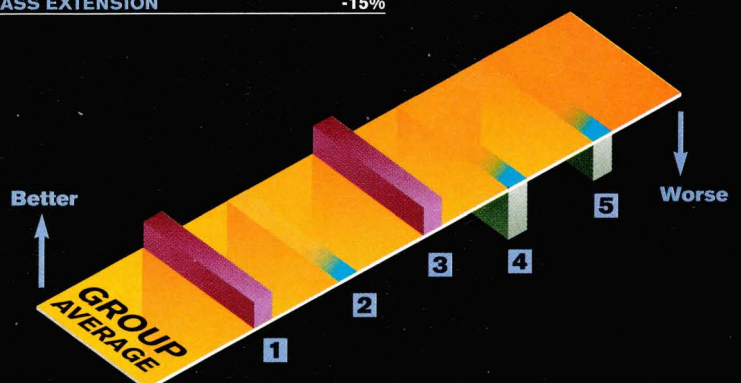
An averaged, third octave trace shows the upper bass and midband looking strong; but, axially at least, there's some loss of 'presence' energy before a 'stinging' treble takes over at 8kHz or so. Toeing the speakers in a good 20 degrees, however, goes a long way to encouraging a less aggressive treble with a smoother transition from upper bass through midrange.

Nevertheless, a narrowband analysis does reveal a substantial kink in the speakers' forward response at the 3kHz crossover frequency, with further peaks at 1.3kHz and 1.9kHz that are linked to spurious resonances emanating from the two front-facing reflex ports. Distortion also increases from a very low minimum of 0.15 per cent through the bass (up to 96dB), to anywhere from two to three per cent through this region, possibly explaining the 'shoutiness' described by Paul's listening panel. Otherwise, the ports are sensibly tuned to a moderate 58Hz, promising an in-room bass extension of 52Hz.

Sensitivity clocks in at 88.3dB but is more than sufficient to generate in-room peaks of 104dB (re. 2m). Ease of drive is moderate, for though the 11 Ohm average is safe enough, there are substantial swings from a maximum of 44 Ohms to a minimum of 5.7 Ohms. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	10%
2	RELATIVE LOUDNESS	0%
3	MAXIMUM LOUDNESS	10%
4	AUDIBLE DISTORTION	-20%
5	BASS EXTENSION	-15%





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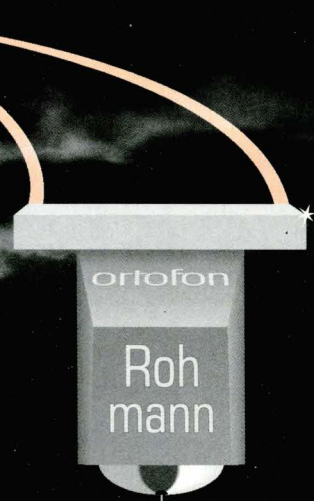
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Celestion 23i

As part of the Chinese-owned group which also backs KEF, Celestion is one of the grand old names of British audio, as well known for professional products as for hi-fi, and highly respected by electric guitar players the world over. While the hi-fi marketing services are now concentrated in Maidstone, Kent, Celestion has kept its own engineering and design integrity (and identity) in its traditional base of Ipswich, Suffolk.

There's more than mere irony in the observation that the largest speaker in this group test is also one of the least expensive. Celestion's £300 floorstander, dubbed the 23i, bears a striking resemblance to a model called the Impact 23 which *Choice* reviewed two years ago (*HFC* 152). Indeed, the only obvious difference is that the port has moved round to the back, and the cosmetics are a little more demure, though happily there's some indication that the sound quality has moved up a few notches.

A relatively large enclosure at a relatively low price inevitably leaves little room for superficial niceties. This box is unambiguously vinyl-wrapped, and the lack of class compared with real-wood alternatives (at admittedly higher prices) is very obvious. So are the surface-mount drivers, despite the plastic trim that cleans up their mounting

hardware. And because there's no separate plinth, the net effect is to look a bit top heavy, especially with the moulded-frame half-grille in place.

This is a two-way design, with just a single main driver handling the bass and midrange, augmented at the bottom end by a very large port, down at floor level.

The main driver has a quite large, flared, paper cone, while the tweeter uses a 25mm soft-plastic dome. Build quality seems solid enough, judging by the total weight of around 12kg. Spikes are provided for firm floor-coupling, though like the Impact 23 these are held by thumb-wheel-type locknuts, which at least don't threaten the integrity of the sockets in the base of the cabinet (not with these thumbs anyway!). They do show a regrettable tendency to loosen during use.

The in-room far-field averaged response is also very similar to that recorded for the Impact 23. Free space siting is essential, to avoid exaggerating the effects of that energetic port, and the treble is significantly duller than average, though the overall bass-to-mid balance looks promisingly good, with usefully high sensitivity too.

Sound quality

The Celestion provoked a mixed reaction from the panellists, yet an overall score close to average must count as a good result for this large but relatively inexpensive speaker. It has to be admitted, though, that this was more to do with disagreement among the panel than unanimity over the speaker's strengths and weaknesses.

The 23i is certainly a bit of a mixed bag. The rather shut-in presence and top will certainly not be to every taste, and that large box area also makes its contribution to the final result. But the bottom end is livelier and more entertaining than most you'll find at anywhere near the price, and proved especially adept at supplying the complex, driving rhythms of modern drum'n'bass, for example. There's a degree of purpose and get-up-and-go here, which is uncommon among contemporary designs.

Conclusion

It's a bit crude, both physically and sonically, but while the 23i might be far from perfect, it's surprisingly enjoyable nonetheless. The dull balance encourages generous use of volume, while the good timing and lively disposition communicate well, especially with

modern dance-type music. *PMc*



VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £299 (5 YEAR GUARANTEE)

☐ Cosmetically flawed, physically and sonically, but the bottom end has fine get-up-and-go, and works well with dance tracks.

✉ Celestion Consumer Division, Eccleston Road, Tovil, Maidstone, Kent ME15 6QP
 ☎ (01622) 687442

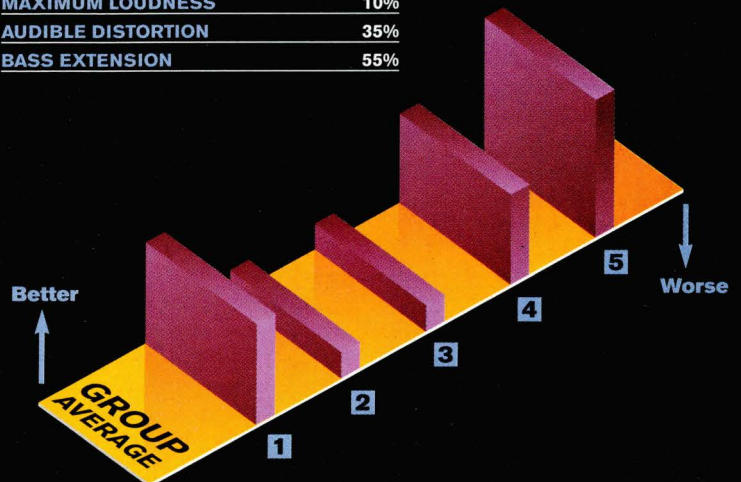
THE LAB REPORT

Evidently, the 23i has been designed to sit on the floor with the listening axis above the top of the cabinet or, at least, roughly on a par with the treble unit. Under these conditions the response is pretty uniform, if a little 'trough-like' and lacking some energy in the upper midrange. Below this axis, however, there's a significant loss in output and increase in distortion either side of the crossover from 1.8kHz-4.6kHz. Even as the speaker is toed inward, these huge -7dB to -10dB cancellation losses would be heard as a marked loss in 'presence'. Not surprisingly, the overall system sensitivity also varies from 89.1dB (above axis) to 88.6dB (on axis).

Meanwhile, a nearfield analysis indicates that although the speaker's bass output is generous, it is at least accurately aligned with the port output bass-driver nulls and impedance minimum coinciding at 45Hz. An in-room bass extension of 40Hz looks likely with very low levels of distortion (typically <0.3 per cent up to 96dBA). A spurious port resonance at 207Hz matches a mild notch in the nearfield response and is reflected in the moderately easy-going impedance trend (5.6 Ohm minima at 185Hz and 9kHz). A cone/surround mistermination is also visible at 1.2kHz. Either way, never, ever put the 23i on stands! *PMc*

HOW IT COMPARES

1	EASE OF DRIVE	40%
2	RELATIVE LOUDNESS	10%
3	MAXIMUM LOUDNESS	10%
4	AUDIBLE DISTORTION	35%
5	BASS EXTENSION	55%



Eltax Linear Response 4.5

The name Eltax Linear Response rang a bell, albeit a distant one. My computer's hard disk has a much better memory than I, and revealed that just such a speaker had come in for review back in 1991, when this Danish brand last made a short-lived appearance on the UK scene.

Now Eltax has returned, setting up its own subsidiary in Milton Keynes, with a range that also carries the Linear Response legend. The overall configurations look similar, but new numbers indicate a completely redeveloped range with different styling. Last time around (*HFC 98*) we looked at the floorstanding LR8; on this occasion we're examining the baby of the range, and its only standmount: the £249 LR4.5.

It's an unusual-looking speaker, which is a way of pointing out that this chunky little box bears no resemblance to the market stereotype. Eltax has a range of four Linear Response models — three floorstanders plus this stand-mount — and all share the same width-and-depth dimensions. The floorstanders look pretty well proportioned, but this LR4.5 has a decidedly squat and dumpy appearance, made all the more obvious by the way the separate base and top surfaces are fitted. The latter certainly pro-

vides some individuality, as does the technique of wrapping the sides around the front baffle edge and inseting the grille, though it also tends to emphasise the rather unconvincing vinyl woodprint finish.

THE LR4.5 is a bit bigger than today's typical standmount, with an internal volume of 11 litres, and has enough mass to register nearly nine kilos on the bathroom scales. A 40mm port plus a main driver with 120mm cone promise plenty of bass output, and point towards free-space siting. The treble is handled by a 30mm soft-fabric dome tweeter.

In-room far-field measurement confirms that this speaker ought to be kept clear of walls, and shows good ultimate extension for a standmount. Even so the bass region is full, and although the overall trace is smooth and well ordered, the upper mid and lower treble are slightly depressed *vis à vis* the bass and treble proper.

Sound quality

An impressive listening test on Day One was followed by a second, less auspicious performance on Day Two, leaving this reviewer attempting to try and square the circle.

I deliberately left the LR4.5 playing for a more extended hands-on appraisal than usual, and although the first impression always seemed strong, largely because of the unusually even and smooth presentation, and consequent timbral accuracy and naturalness, the longer I spent listening, the more frustrated I became. The midband seemed somehow 'squashed' and underdeveloped. Leading edges seem to be suppressed, reducing voice intelligibility specially when listening at low levels, and the net result was an overall blandness that seems to gloss over the finer musical sub-

tleties and limit tonal contrasts. There's an incentive with this speaker to want to turn up the volume, the better to hear the presence detail, but this in turn can draw attention to a bottom end with some tendency to wallow, especially with more demanding (ie dance music) programmes.

Conclusion

Unusual in a number of respects, not least its dumpy shape that comes from sharing the same plan section as three larger floorstanders, the LR4.5's smooth and even-handed balance is its own reward, especially in tonal accuracy terms. However, the laid-back midband and presence does tend to limit communication skills and hamper vocal intelligibility. It is, on balance, a fair exchange, and this speaker is certainly very inoffensive and easy on the ears, and decent material value for money too. *PMc*



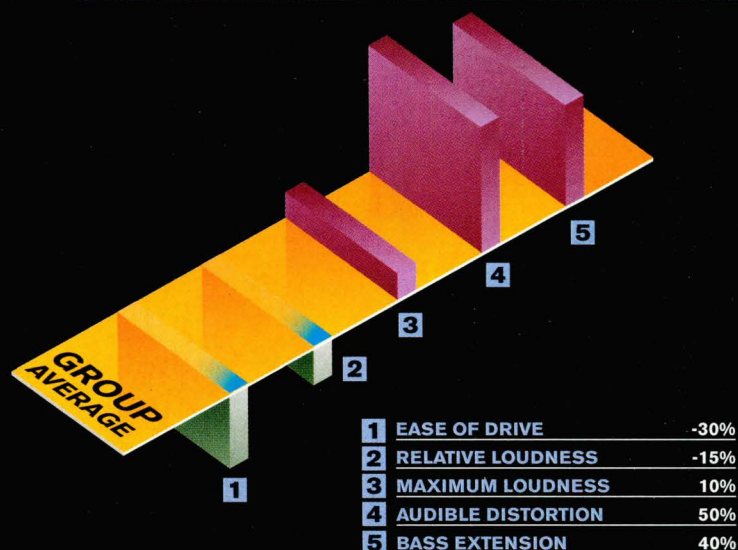
VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £249 (ONE YEAR GUARANTEE FOR DRIVE UNITS ONLY)

A curiously dumpy shape, but interestingly styled, this smooth and laid back performer is very easy on the ears, with fine tonal accuracy.

Eltax, 4 Warren Yard, Wolverton Mill, Milton Keynes MK12 5NW
 (01908) 226464

HOW IT COMPARES



THE LAB REPORT

Frankly, 'Linear Response 4.5' is not an entirely appropriate badge for a speaker with such a penchant for treble. Sure enough, there's some 'lumpiness' around 200Hz or so, but the 'mild' looking mid and lower treble are generally smooth. Above 6kHz, however, the dome tweeter really takes off, developing an axial (8-16kHz) band energy some +4dB above the mean level of the midband. For example, the 500Hz-8kHz sensitivity computes as 88.0dB/1W/1m but increases to 89.4dB from 200Hz-20kHz. You might try toeing in the speakers a little, then again the treble is only tamed at the expense of a less even midband. As ever, this generous sensitivity does come at the expense of a moderately tricky amplifier load that averages out at 10.9 Ohms with a minimum of 3.7 Ohms at 155Hz.

Indeed, the speaker is at its most taxing at low frequencies where, rightly or wrongly, its rear-firing reflex port is set at a conservative 72Hz, very close to where the bass/mid unit starts rolling off at 90Hz. It's also slightly misaligned with the driver/impedance null at 50Hz. Whether this might encourage a 'one-note' bass is arguable, though very low levels of distortion (typically 0.2-0.3 per cent) certainly augur in favour of a bass that's low in coloration. *PMi*

JPW ML710

Long known for speakers offering exceptional value for money, West Country-brand JPW is one of the largest and longest-established British hi-fi speaker manufacturers around. These days it is distributed by Richer Sounds in the UK, and effectively acts as the 'house brand' for that powerful retail chain. At the same time, there's little likelihood you'll find its products outside the Richer shops.

Choice is steadily working its way through JPW's new nine-model-strong Millennium Series. First to come under scrutiny was the £129.99 ML510 stand-mount, which scored a Best Buy in *HFC* 169; while the enormous (in size, not £399.99 price) ML1010 also picked up a Recommended flag (*HFC* 170). This ML710 almost splits the difference, using drivers similar to the 510 but in a compact floorstanding enclosure instead.

The proposition looks pretty good, as the price is a very sharp £230. To this you must add the extra £30 charged for an optional, chunky, charcoal-finish-textured MDF plinth, which considerably extends the footprint and ensures rock-solid stability. Effective it is, though it's a bit too big to look pretty under the otherwise attractive 'cherry' vinyl woodprint — the black option looks better on the plinth to my eyes.

JPW prefers to use particle board (rather than plastics) for the front baffle, and the 710 has an ultra-thick front panel using separate layers of chipboard and MDF. Styling embellishments are machined into the MDF layer, which is then covered in a laminate to give a 'genuine plastic texture effect'.

The box may be wood-based, but JPW has opted for a plastic-frame main driver. The main diaphragm has a 100mm doped-paper cone, while the tweeter uses a small 19mm doped-fabric dome. Twin terminals permit bi-amping/wiring.

Sticking the ML510 drivers in a larger, floorstanding box might avoid the need to use separate stands, but the in-room far-field power response here is much less impressive through the bass region. The ML710 is dominated by an isolated hump centred on 50Hz, close to the port (or column) tuning frequency, giving a balance which is midbass-heavy and upper-bass-lean.

Sound quality

The ML710 came out below average in the listening tests, but then the price is well below average too, and by no means did it disgrace itself. There was, however, general criticism of a rather forward, unforgetting

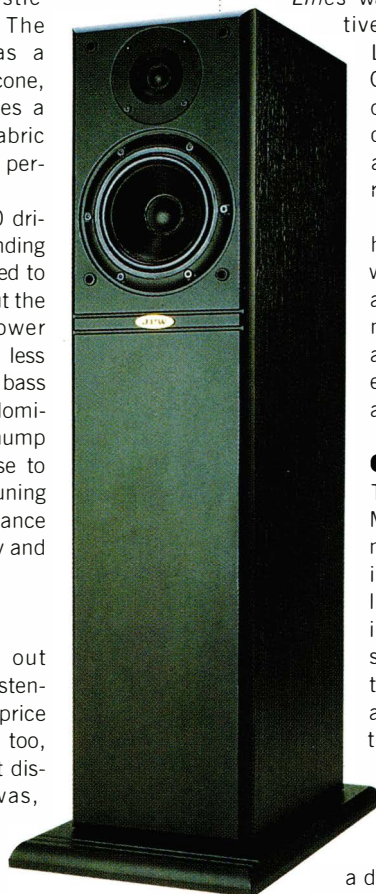
sound with a tendency to harshness, and not without some pinched and 'cuppy' colorations at the same time.

This forwardness is, I believe, a result of the loss of warmth and richness through the upper bass region, but this feature has consequences of a musical nature too. The deep synthesiser bass on Massive Attack's *Blue Lines* was reproduced pretty effectively, for example, but Phil Lesh's electric bass on the Grateful Dead's *Reckoning*, operating in a higher frequency band, was rendered almost inaudible — or at any rate, difficult to follow.

The character of the sound has something in common with three-box sub/sat packages, and while I suspect the meaty midbass output will appeal strongly to some listeners, regrettably there's no avoiding the lack of accuracy.

Conclusion

There's no denying that the ML710 represents good material value for money, nor indeed that the package looks altogether more impressive than the ML510 stand-mount. The trouble is that it doesn't sound as good, and indeed serves to illustrate the point we've been making for some years — that the floorstander is usually not as good as a comparable standmount on a dedicated stand. *PM*



VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £229.99 (£30 OPTIONAL PLINTH)
5 YEAR GUARANTEE

❏ Disappointingly uneven bass — check out the 510s and a pair of proper stands instead.
 ✉ JPW Ocean Quay, Plymouth, Devon, PL1 4LL
 ☎ (01752) 607000

THE LAB REPORT

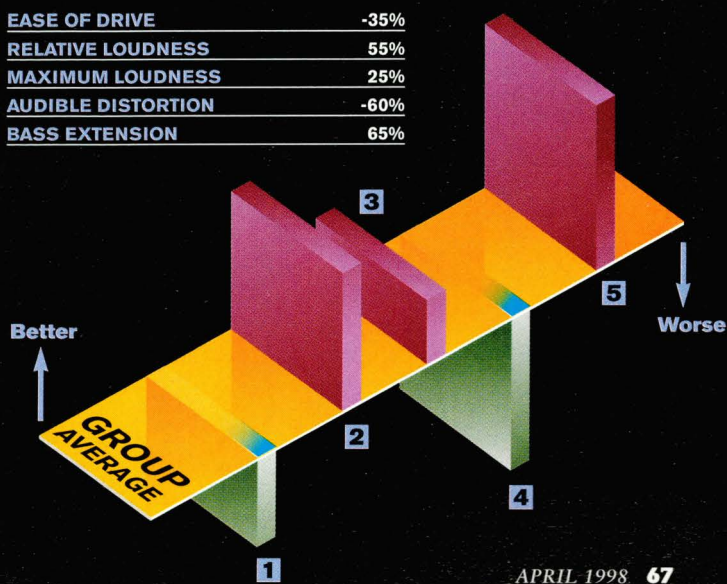
Broadly speaking, the ML710 is an enlarged version of the ML510 (*HFC* 169) using the same 135mm doped-paper bass/mid unit and 19mm fabric dome with, essentially, the same crossover network. Nevertheless, the 3kHz notch detected with the ML510 is missing in the ML710 which enjoys a smoother mid/treble balance together with a reasonably uniform pattern of distortion (typically <0.9 per cent at 96dBA, dynamic conditions).

The overall system sensitivity is also up from 88.4dB to 90.1dB/1W/1m (in-room max. is now 105dBA) together with a fundamentally revised bass alignment which delivers a noticeable 'lift' to the 200-600Hz region. Take care over room-siting, or the ML710 might run away with itself. A nearfield analysis reveals some sloppiness, however, as a huge structural resonance breaks clear of the 45Hz-tuned port at 210Hz (+3.5dB).

This coincides with a notch at the peak output of the bass driver itself and is strongly represented on an otherwise innocuous-looking impedance curve. Minima of 4.6 Ohms at 250Hz and 9.6kHz will still give some amplifiers pause for thought, however. So, the speaker's bass extension may have been dragged from 55Hz (ML510) to 38Hz (ML710) but at what cost to upper bass transparency? *PM*

HOW IT COMPARES

1	EASE OF DRIVE	-35%
2	RELATIVE LOUDNESS	55%
3	MAXIMUM LOUDNESS	25%
4	AUDIBLE DISTORTION	-60%
5	BASS EXTENSION	65%



Mission 750LE

I'm rather glad I received this speaker several days before the hype arrived, because it gave me a chance to become well impressed before getting the feeling that the sell was coming on too strong. Mind you, if I'd designed a loudspeaker this beautiful, and worked out how to build it and make a profit from a £248 price tag, I'd be inclined to shout pretty loudly from the rooftops too.

It's not just the advanced aesthetics. This speaker has tactile appeal too. The combination of a lustrous rosewood veneer with clever post-formed edges and a cunningly-shaped grille (covered in something resembling Lycra) make this 750LE irresistibly strokeable. It is a tribute to the subtle art of CAD/CAM, and will sell in droves whatever the reviews say. Note that only the first 7,000 carry Farad Azima's signature and the LE subscript — once they're sold the model will continue as the 750.

Innovation isn't confined to the bijou styling. Instead of resorting to traditional (frequency selective) damping materials to absorb internal standing waves, Mission has adopted a radical approach by routing a pattern of deep swirling grooves into the internal cabinet walls. More familiar is Mission's established technique of mounting the tweeter from the back panel to reduce its

mechanical interaction with the main driver.

The main driver is an interesting affair, using a small 95mm aerogel cone with a gilt phase plug protruding through the centre. However, the bottom line is that this is a small loudspeaker, with a small main driver augmented by a small port. The consequence is a relatively small amount of bass, which in turn suggests the 750LE might be suited to smaller rooms than the 5x7m area used for our tests.

Even with wall reinforcement, the 750LE is struggling below 100Hz, though there's some in-room output down to 50Hz. Things look pretty well balanced above 100Hz, though not particularly smooth, with a clearly identifiable peak around 900Hz.

Sound quality

On Day One the 750LE did pretty well, notwithstanding the limitations imposed by its size, partly I suspect because it was following a model with even less bass output. The Day Two results were much less positive — nay disappointing — but here it followed a more muscular predecessor, and its bass limitations were more obvious.

In isolation and over a longer period of time I found it quite possible to adjust to the 750's limited weight, on the majority of day-to-day programming, but full-bandwidth music does tend to expose its limitations: Phil Lesh's bass guitar work on the Grateful



Dead's *Reckoning* certainly lacked the poise, finesse and sense of purpose which larger models bring to the proceedings.

However, there's no lack of warmth, and the lack of midbass boom and lushness brings its own reward. The midrange is beautifully judged. The first impression might be that it's a little

too restrained, but longer exposure brings home the realisation that voices are exceptionally subtle and delicate, without forcing the issue by being too insistent. Colorations are modest, imaging is convincing, and boxiness is impressively well controlled. Yes, in absolute terms this is a small speaker, with limited weight and modest dynamic capabilities, but its superior midband will be more than enough to carry the day for many potential purchasers.

Conclusion

The package looks absolutely gorgeous — it sets a new standard for affordable miniatures. The high-class midband is a major strength that will win many friends, and I daresay the lack of bass weight will be less obvious in smaller rooms, but I'd be tempted to lay bets that Mission might introduce a matching active subwoofer at some stage in the future — the 750LE deserves one! *PMc*

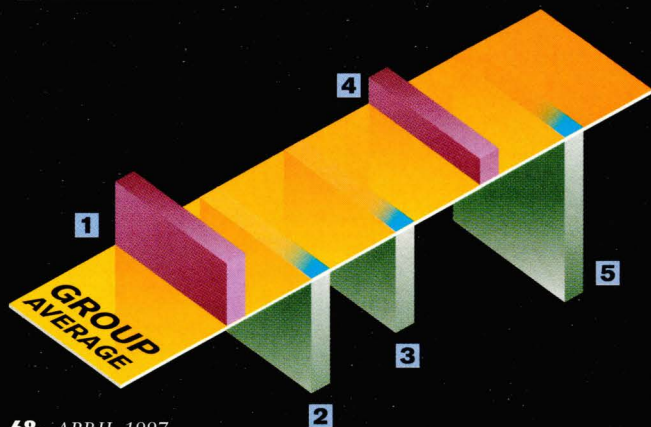
VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £248 (1 YEAR GUARANTEE)

- ☐ Fabulous cosmetics and a great midband will carry the day for many, though size will out and bass capabilities are inevitably limited.
- ✉ Mission Electronics, Stonehill, Huntingdon, Cambs PE18 6ED
(01480) 451777

HOW IT COMPARES

1	EASE OF DRIVE	25%
2	RELATIVE LOUDNESS	-45%
3	MAXIMUM LOUDNESS	-40%
4	AUDIBLE DISTORTION	10%
5	BASS EXTENSION	-65%



THE LAB REPORT

At 86.5dB/1W/1m and with a projected in-room bass extension of 70Hz, the 750LE will never send ornaments tumbling from the shelf, but it's reassuring to learn that it enjoys a well-integrated midband and that the average 11 Ohm load won't cook your amplifier. Distortion is also gratifyingly low at typically 0.4-0.6 per cent through the bass under dynamic conditions, even up to high 96dBA levels (a maximum 102dBA should be possible under ideal conditions).

In point of fact, the 750LE's bass alignment is very good indeed with its low-Q port resonance coinciding precisely with the impedance and bass/mid driver null at 60Hz — a not unrealistic frequency for a box of this size. A sharp 'ping' from the port at 775Hz, however, also appears on both the main response curve and impedance trend.

Measured on-axis, there's an obvious increase in treble energy above 8kHz or so, which could contribute to some 'fizziness', but this is easily countered by toeing in the speakers by 10-20 degrees. The sharp notch at 16kHz (a cancellation caused by a reflection off the back of the treble dome) will pass unnoticed, though the small notch at 6kHz caused by a mistermiation between the (bass/mid) aerogel/rubber surround may well be audible. *PMI*

Castle Kendal

Though it revives the name of a favourite *Hi-Fi Choice* Best Buy budget bookshelf speaker from way back in the '70s, the new Kendal is a very different animal from its illustrious predecessor. It eschews the latter's unfashionably dumpy dimensions in favour of an altogether sleeker (and more modern compact) floorstanding configuration.

It is one of the smallest floorstanders around, as well as one of the neatest, prettiest and most discreet, not least because of the elegant plinth that is part of the package. The lustrous rosewood of our test samples commands something of a premium over the £449.90 quoted price, but Castle is a real wood specialist, and its cabinets always represent fine value as well as class.

The company has long tended to use smallish-diameter main drivers, and the Kendal is no exception, with a tiny 95mm cone made from CFC (carbon fibre composites). What is perhaps surprising is that this driver is loaded by a sealed-box, meaning that this model actually has the least air moving capabilities of any of our test group — less indeed than either of the much smaller port-loaded stand-mounts from Mission and Acoustic Energy.

Even when positioned close against a

wall, the Kendal's in-room far-field power response indicates maximum output occurring through the midband and presence regions (400Hz-3kHz), leaving the sub-400Hz bass and lower mid somewhat suppressed (though with the useful ultimate extension which sealed-box loading supplies). It's an unusual characteristic, though not without precedent — I'm reminded of Naim's IBL and Intro models, as well as my own Rehdeko RK175.

Sound quality

I had expected that the Kendal's bass-light balance would ruin its chances under the harsh scrutiny of trial by black (acoustically transparent) curtain. It's fair to say this outing didn't do the speaker any favours, especially on the first day, but the second listening day gave a much more positive result, which the hands-on listening served to confirm.

The bass might be a little disappointing in quantitative terms, but qualitatively it's rather good — certainly smoother than average, with fine timing, good ultimate extension, and a real capability to drive the music along with direction and impetus.

The sound as a whole

might be a bit lightweight and 'in-er-face' forward, and can react badly to some mixes, but by and large the Kendal gets away with it, and for the most part it proved a thoroughly entertaining experience.

However, the forwardness does rather over-expose a midband that's not the last word in smoothness, and a variety of colorations — happily relatively mild in degree — are audible, especially on the spoken word. One other consequence is that clarity is well maintained even at very low listening levels — but by the same token the sound can become a bit fatiguing when the speaker is thrashed.

Conclusion

Clearly better suited to smaller rooms than our 25-square metre arena, the Kendal has a decidedly forward, bass-light balance, which might be too edge-of-seat for some listeners, but which others will undoubtedly enjoy. The fact that it is one of the prettiest and most compact floorstanders around, suitable for siting close to a wall, and realistically priced at £449, serves to push it comfortably into the Recommended zone — but check you can tolerate the tonal balance before signing the cheque. *PMc*



VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£449.90/£519.90 DELUXE 5 YEAR GUARANTEE
<p>☑ A beautifully finished, compact floorstander with a decidedly forward but fundamentally communicative sound. Try before you buy.</p> <p>✉ Castle Acoustics Ltd, Park Mill, Shortbank Road, Skipton, N Yorks BD23 2TT (01756) 795333</p>	

THE LAB REPORT

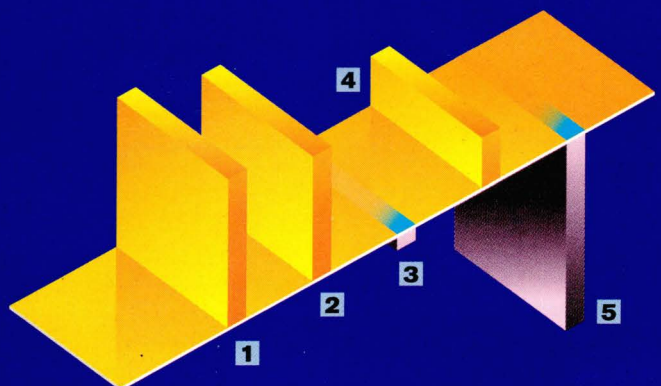
Designed as a 'small-room' loudspeaker for rear-wall mounting, the Kendal is Castle's first sealed-box loudspeaker. The 110mm carbon-fibre bass/mid unit crosses over at around 3kHz to Castle's standard 25mm polyamide dome, a point marked by a slight notch in the speaker's forward response and where distortion rises above 1 per cent (@ 96dB).

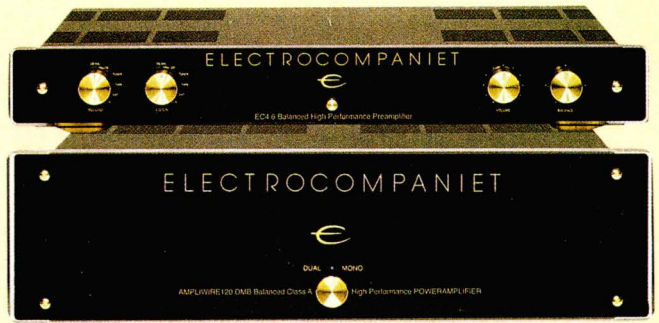
Third octave averaging suggests the Kendal has a very flat and uniform response that only begins to tail off at high frequencies as you listen off-axis. Deep bass, however, is not a feature of the Kendal, which has been engineered with a maximum bass peak at a high 220Hz followed by a very gentle, over-damped roll-off that's sufficient to support frequencies as low as 80Hz in-room. Nevertheless, this bass response is still a lot 'cleaner' than that achieved by bigger, reflex-loaded Castles like the Avon and Severn II (HFC 164 and 174, respectively).

The Kendal is not insensitive. In fact Castle underestimates just how 'loud' its Kendal will perform, offering a full 89.6dB at 1W/1m (though rated at just 87dB) and a healthy maximum in-room of 104dBA. All this is achieved without driving your amplifier to despair: a momentary minimum load of 6.5 Ohms with a generous average of 13 Ohms. *PMc*

HOW IT COMPARES

1	EASE OF DRIVE	60%
2	RELATIVE LOUDNESS	50%
3	MAXIMUM LOUDNESS	-5%
4	AUDIBLE DISTORTION	20%
5	BASS EXTENSION	-75%





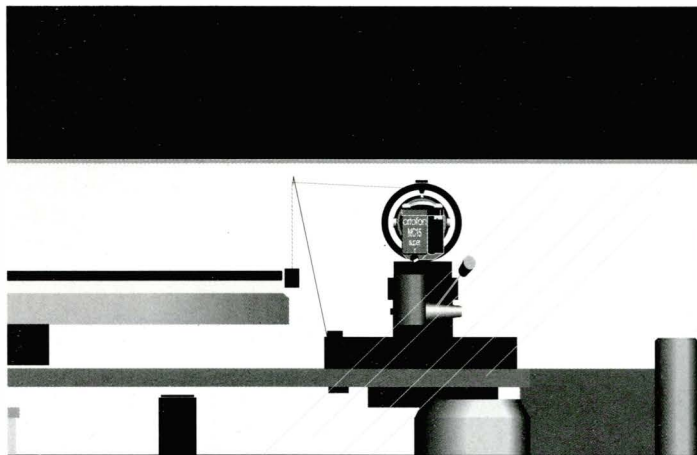
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Dynaudio Audience 5

Danish speaker specialist Dynaudio has unique opinions on the best way to make speakers, especially when it comes to building main drivers. In this field Dynaudio's are unusual and expensive devices with a fine reputation in both professional and domestic hi-fi arenas. The drive units provide the foundation, but the company also builds complete speaker systems, two of which have done well in recent *Choice* group tests.

Indeed, the £577 Audience 50 scored a Best Buy rating in *HFC* 174, and there looks to be much in common between that model and this smaller £400 Audience 5. Like its slightly bigger brother, the 5 is a vinyl-finished standmount of generally unprepossessing appearance. In fact the smallest and least expensive model in Dynaudio's line up, although the price tag is well above what is generally regarded as the budget sector — largely because of the expensive drivers, I suspect.

Styling is basically anonymous, though neat enough in its way, with a shape that looks purposefully chunky, and a front panel dominated by the main driver with its 115mm plastic cone/dome diaphragm, a tweeter whose metal dome is very well protected by a heavy mesh, and a 45mm diameter port. The tweeter is offset from the cen-

tre line in order to de-focus baffle edge reflections, while the two speakers of a pair are 'mirror-imaged' in order to maintain perfect left/right symmetry. Dynaudio doesn't believe in bi-wiring, so just a single terminal pair is fitted on the rear.

The in-room far-field responses look pretty well ordered, especially through the broad midband, though the bass starts rolling off below about 100Hz, while the treble is somewhat brighter than average, with some peakiness around 4kHz and 11kHz.

Sound quality

The panellists responded quite positively to the Audience 5, one putting it right at the top of his list for the day. All appreciated its fine midband analysis and dynamic range, impressive overall evenness and openness, and its believable reproduction of wide-ranging tonal colour.

However, there was also a general complaint that the overall sound was a little too thin and 'cold', and while the bass shows fine control, it's also a bit too dry and undernourished, and lacking in drive and impetus. "Good bottom end control and precision, but no great weight; essentially neutral if bright balance... top could be sweeter."

The ears tend to focus on the slightly tinkly and obtrusive treble, which can get a bit wearing with some types of recording.

Questions were raised over its dynamic capabilities too; two listeners singled this out as a reason why they didn't find it easy to get involved: "Delicate inner detail, got some bite but could have more drama; sounds just a bit small and lightweight, but open and unboxy."



Conclusion

It could well be that the Audience 5 would produce a better balanced result if used in a smaller room (with correspondingly greater midbass reinforcement) than the one used for our tests. Under our conditions the Audience 5 still enjoys the superior midband which seems to go hand-in-hand with the Dynaudio drivers, but the combination of a relatively light bass with a strongish treble leads to an overall tonality which is rather thin and cold. Our advice is to go for the slightly larger Audience 50. *PM*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £398 (5 YEAR GUARANTEE)

Follows the Dynaudio tradition for fine midband transparency, but the overall timbre of this baby is a bit thin and cold.

Dynaudio UK, 29 Robyns Way, Sevenoaks, Kent TN13 3EB
 (01732) 451938

THE LAB REPORT

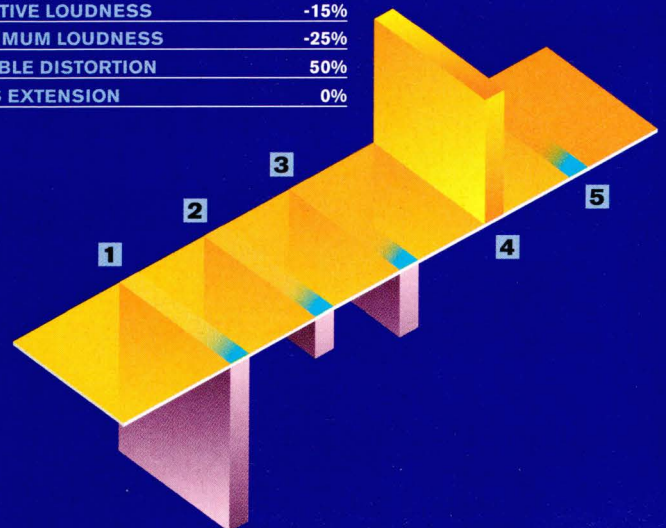
Comparisons of Dynaudio's Audience 5 and Audience 50 are inevitable and, indeed, there are similarities in their performance. The overall system sensitivities are alike at 87.4dB (5) and 87.8dB (50), while both speakers saddle the accompanying amplifier with an average load of just 5.2 Ohms and 6.6 Ohms, respectively. With 3.8 Ohms minima at 185Hz and 8.4kHz and a trend that lies below 7 Ohms from 100Hz-20kHz, the Dynaudio Audience 5 will prove a taxing assault course for the toughest amplifiers.

Once again, the Audience 5 betrays a characteristically bright balance, but in contrast with the 50, the response of the 5 when toed-in (thanks to its offset driver arrangement) is more likely to encourage an upper-midrange dip than calm its enthusiastic treble. Moreover, the '5 also suffers from, I presume, a significant resonance from its combined plastic dome/cone bass/mid driver at 3.8kHz (approx. +5dB). Without this, the speaker's response would look remarkably smooth from 500Hz-7kHz, before the treble dome finds its stride.

Like the Audience 50, the '5 has its reflex port tuned to 55Hz, though the broad, medium-Q resonance is just slightly misaligned with the 37Hz/44Hz driver/impedance null and looks likely to produce a slightly weaker in-room bass extension of 53Hz. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	-65%
2	RELATIVE LOUDNESS	-15%
3	MAXIMUM LOUDNESS	-25%
4	AUDIBLE DISTORTION	50%
5	BASS EXTENSION	0%



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NHT Model 1.5

A newcomer on the UK scene: NHT hails from California, where presumably it's normal to christen your speaker company Now Hear This! Such arrogance notwithstanding, the first product to come in for *Hi-Fi Choice* scrutiny scored a Best Buy rating (the £338 Super One, HFC 170), for its fine all-round capabilities from a tiny box.

On the next rung up the ladder is the £450 Model 1.5 — not a whole lot bigger, but bigger nonetheless, and interestingly shaped too. The adjective 'interesting' was chosen for its aesthetic neutrality. You can make up your own mind from the picture, but I can't say I was particularly knocked out by the oddball shape, or the weird finish. White might look attractive in a brochure, and the box itself is a discreetly patterned Formica-style laminate, but keeping the grille clean (especially when it's regularly pumping air) is not something I'd relish.

The shape looks strange, and seems to imply that this speaker ought to be placed quite close to a wall, preferably on proper speaker stands rather than simply plonked onto a handy bookshelf.

The main driver looks very similar to that used by Super One, so the higher price of this 1.5 is due to the much more costly enclosures, which might look a little odd, but certainly make sense from a performance per-

spective. The angled front panel serves to direct the axes of the two speakers so that they cross in front of the listener (keeping the boxes themselves mounted square on); while the irregular plan shape will help spread internal standing waves and deflect the first reflection.

Such a shape requires 'mirror-image' construction, which also allows the tweeters to be offset from the centre line, the better to spread baffle-edge discontinuities. The drivers are both flush-mounted and dense foam is fitted alongside the tweeter, for further control of its acoustic environment. The main driver loading is a sealed box, and the layout is inverted, which on 600mm stands places the main cone unusually high off the ground — to rather good effect. Like many overseas speakers, it has only a single pair of speaker terminals.

Room measurements confirm close-to-wall suitability, and in character closely resemble those of the Super One, though this 1.5 is less smooth: a little more restrained in the presence region, and richer through the lower midband.



snap judgments, that this speaker was able to demonstrate its rather superior pedigree. Given the chance to make direct comparisons between specific models, I found the 1.5 distinguished itself again and again, not only for its fine top-to-bottom coherence and timing,

but its ability to sound much larger and grander in scale than would seem possible given the modest size of the box. True, it isn't quite the smallest speaker in the group, but the fact that it managed to generate a soundstage as big as any (and bigger than most) is a real achievement.

There are one or two quibbles over the presentation. There's a touch of midrange 'shout' and treble 'fizz', and the net result might be sweeter and more relaxing. But the longer I played this speaker, the more I got to like it, and came to appreciate its fine time coherence, wide dynamic range and good communication skills.

Conclusion

Beware of first impressions. This speaker does a remarkable job of belying its modest dimensions by delivering a genuinely full-scale sound with fine dynamic range. Make your own mind up about the styling and finish, but on sound-quality grounds a Best Buy rating is the obvious conclusion. *PM*

VERDICT

SOUND ★★★★★
VALUE ★★★★★☆
PRICE £449 (5 YEAR GUARANTEE)

- 📄 Oddball styling, but this compact, discreet speaker sounds much bigger than it has any right to. Good timing and communication skills.
- ✉ Sound Dept, 19 Blacklands Way, Abingdon Business Pk, Abingdon, Oxford OX14 1DY
- ☎ (01235) 555622

Sound quality

My first impression of the 1.5 was mild disappointment, and while the panel listening test results were fairly positive, they might have been better given the relatively high price of this modest standmount.

It was in the hands-on sessions, which take place over a much more extended period of time and without the pressure of

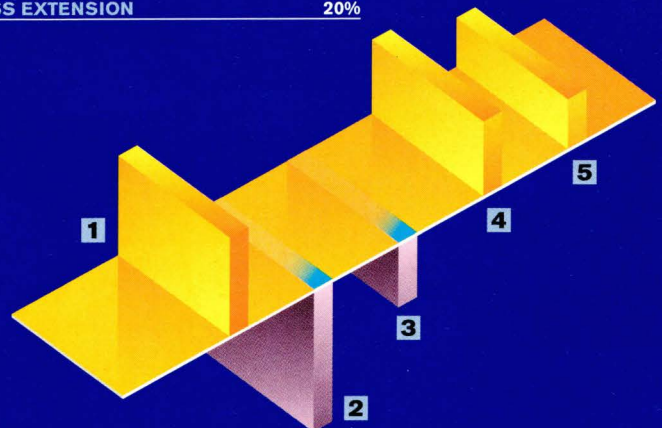
THE LAB REPORT

Although NHT's baffle is inclined inward at 21 degrees, most of my measurements were conducted perpendicular to this axis as, in all likelihood, this most closely represents the listening axis with the Model 1.5 placed close to the back wall, if not right up against it. A narrow-band analysis suggests it looks rather 'notchy' from 4-8kHz, right after the 3.3kHz crossover. One or two of these effects might be linked to the alloy dome's restrictive phase plate; when the response is viewed in an averaged third-octave mode — to give us a better idea of its overall balance — the Model 1.5 looks surprisingly uniform. Move off-axis, however, and the response begins to drop away through mid and treble.

The polypropylene bass/mid unit looks to be getting stretched before the crossover point is reached, as evidenced by an increase in odd-order mid-band distortions from 0.4 to 2 or even 3 per cent under dynamic conditions at 96dBA. However, this is about +10dB above its system sensitivity of 86.2dB, conservatively judged by NHT at 85dB/1W/1m. A low-ish sensitivity usually implies the speaker will be easy enough to drive, and it is here with an average impedance of 12 Ohms and an amplifier-friendly minimum of 6.1 Ohms. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	40%
2	RELATIVE LOUDNESS	-55%
3	MAXIMUM LOUDNESS	-25%
4	AUDIBLE DISTORTION	30%
5	BASS EXTENSION	20%



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PMC TB1S

Around 18 months ago we picked PMC's TB1 loudspeaker as a Best Buy (issue 160). This £430 TB1S is effectively the same design, though it comes dressed in a set of rude-boy clothes which emphasise the company's professional credentials, save fifty-odd quid on the price, and let you deposit coffee mugs on the top surface without guilt.

PMC used to be called The Professional Monitor Company: pretentious, as well as one heck of a mouthful, but no less than the truth, since the company is up to its ears building full-size active-drive studio monitors for the LA film studios which mix the latest blockbuster soundtracks.

Founded a few years ago by a couple of ex-BBC people, PMC's trademark is its own particular flavour of transmission line loading, and the TB1 is very much the domestically-oriented model, in price and ingredients. Pro 'no-bullshit' styling features in this TB1S variant include plastic rather than gilt terminal binders, and a rugged charcoal rough-textured finish, with radiused edges, which looks and feels suitably semi-industrial. I like the appearance, which is more contemporary than the somewhat staid and anonymous real wood of the TB1.

Flying in the face of fashion (though not

good sense), this is a chunky standmount, so make allowances for a pair of stands — and don't just settle for the cheapest, if you want to exploit this speaker's considerable potential.

A large transmission-line-type port is set into the back, along with two pairs of terminals for (optional) bi-wire connection. The main driver has a cast frame and 125mm doped paper cone, while the tweeter uses a 25mm metal dome.

In-the-room far-field power response measurements don't provide easy answers about placement. Free space siting (probably the better choice) leaves the midband (250Hz-1kHz) prominent, while close-to-wall positioning helps match up bass and midrange better, but correspondingly leaves the treble looking rather obviously depleted.

Sound quality

The balance here is a bit wayward, and the TB1S can sound rather dull and shut in, depending somewhat on the character of the drive system (and how close you choose to sit). It is certainly significantly more laid back than average, and this is an encouragement to listen at higher levels than brighter-sounding designs.

It is also probably the reason for some

disagreement among the panelists, though the TB1S actually did rather well overall, especially on the first day, and in the light of its close-to-average price.

Listening 'through' the balance reveals uncommon transparency throughout the midband, with fine dynamic range and discrimination. The treble is quite sweet, and although the bass

can be a bit uneven, it's probably the best in the whole test group, for its ability to

deliver bass guitar lines with some semblance of proper dynamic and tonal shading. All too often others employ resonances which tend to blur textures and mask information, while this compact transmission line simply tells it how it is, and without hype or melodrama.

Conclusion

Given that the TB1 already carries a Best Buy logo, and this pro-look TB1S costs £50 less, it would be churlish as well as inconsistent not to confer the same status. It is a good all-rounder with a generous sound and dynamic capabilities superior to most of the competition, the balance is sufficiently idiosyncratic to make prior audition mandatory, but if you like what you hear — go for it! *PM*



VERDICT

SOUND ★★★★★☆
VALUE ★★★★★★
PRICE £430.05 (5 YEAR GUARANTEE)

☑ A classy laid-back performer that relishes its pro-audio associations, likes going loud and loves the bass guitar.

✉ PMC, Unit 72, Haslemere Ind Est, Tewin Rd, Welwyn Garden City, Herts. AL7 1BD
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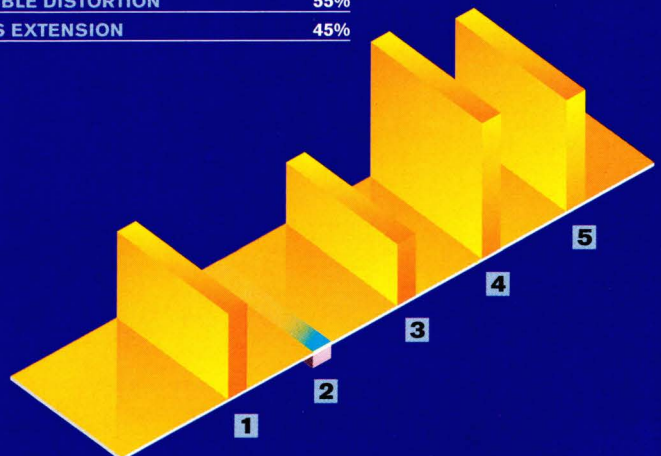
THE LAB REPORT

S, in this instance, stands for Studio, referring to black textured finish and rounded corners of PMC's TB1 loudspeaker. Otherwise it's the same box we reviewed back in *HFC* 160. PMC's crossover was changed from a first to second order network about three years ago, but both this and the previous sample are identical, as evidenced by the familiar 'bump' at 185Hz and 5.9 Ohm minimum on the impedance trend. Even the maximum -45 degree phase angle at 5kHz remains pretty much untouched. However, the system sensitivity did compute around 1dB higher at 87.8dB — but this is well within the tolerances of loudspeaker mass-production.

Narrowband analysis reveals a sharp notch at 2.8kHz (near enough to the 3kHz crossover frequency) but this is less obvious on an averaged, third-octave plot. Similarly, the 1.5-6.5kHz band is uniformly depressed compared to the upper treble and mid/bass regions that flank it. Off-axis, the treble drops away slightly and this, together with the 'in-fill' expected from a far-field listening position, is likely to ensure the TB1 sounds less 'U-shaped' than its axial response might suggest. As before, PMC's large, foam-plugged port at the rear of the enclosure is sufficiently resistive to modify its fourth-order bass alignment, encouraging an appropriate, low-Q output centred on 51Hz. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	35%
2	RELATIVE LOUDNESS	-5%
3	MAXIMUM LOUDNESS	20%
4	AUDIBLE DISTORTION	55%
5	BASS EXTENSION	45%



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B&W CDM1 Speakers (black)(WOW!) (599.00) £369.00	Marantz CD67se CD Player (New) (299.00) £229.00
B&W P5 Speakers (New - black) (875.00) £599.00	Morduant Short MS30i Speakers (WOW!) ... (299.00) £159.00
B&W DM 305 Speakers (WOW!) (349.00) £179.00	Mission 733i Speakers Black (New) (329.00) £239.00
B & O Century System (WOW!) (1075.00) £799.00	Mission 75C Centre Spkr - New (WOW!) (249.00) £149.00
B & O Beocenter 9300 system (1650.00) £1250.00	Mission 754 Speakers (Black)(WOW!) (1299.00) £609.00
B & O Beolab 6000 Active speakers (1550.00) £1100.00	REL Storm Sub Woofer (WOW!) (659.00) £450.00
Linn Kudos (sneaky) Module Tuner (500.00) £349.00	Rega Planet CD Player (398.00) £299.00
Linn Kudos Tuner (775.00) £599.00	Rega Elex Amplifier (New) (398.00) £265.00
Linn Wakonda Pre Amplifier (900.00) £599.00	Rotel RCD 970BX CD Player (WOW!) (349.00) £169.00
Linn LK100 Power Amplifier (WOW!) (650.00) £425.00	Rotel RCD 975 CD Player (WOW!) (449.00) £259.00
Linn Keilidh Speakers inc stands (Rosenut) .. (985.00) £599.00	Yamaha DSP E390 Processor (WOW!) (249.00) £129.00

Tannoy Precision P20

The very considerable market success enjoyed by Tannoy's budget-cost Mercury models should not distract from the fact that this ancient and respected brand makes a vast range of other models extending up to the highest prices. While the Mercury has gone down a storm in Europe, over in Japan the £15,000/pair Kingdom has also been a roaring success.

One step up from the Mercury comes the recently introduced Precision series. This is replacing the Profile, and comprises a range of four models including this £400 compact floorstanding P20. The overall formula is familiar enough, inasmuch as this is a two-way, ported design which stands a modest 80cm off the deck, and uses a main driver with a 120mm cone — a clear plastic one in this case, but reinforced by glass fibre strands for extra stiffness.

One of the main factors distinguishing the Profile (and its Sixes antecedents) from the rest of the competition was the clever way Tannoy created an irregular cabinet shape, the better to distribute unwanted internal standing waves. Something of the same is found in the Precision, but whereas the Profile varied the width, the Precision varies the depth, by tilting back the section of the front panel on which the drivers are mounted.

It's an arrangement which makes sense for several reasons. Time-aligning the main and treble drivers is the prime purpose, but it will also help spread the standing waves internally, improving the overall stability and helping to direct the sound upwards and away from the floor. The tweeter diaphragm actually points horizontally, as it's mounted in a short-moulded horn which is deeper below than above — something called an ATV (asymmetrical truncated variegate).

Styling is quite individual: front, top, back and base are finished in grey textured vinyl, while chamfered real-wood veneered sides, albeit of a rather nondescript nature, add a touch of class. There's no separate plinth here, but the fore-and-aft stability footprint is already good, and the shape somehow renders a plinth unnecessary. I thought the speaker looked odd with the half-grille removed, but left in place it adds a welcome finishing touch, thanks in part to the subtle curve along the top edge.

The far-field room-averaged responses point towards free-space siting, but even here the port output seemed rather too enthusiastic at 40-50Hz. The trace wasn't too promising elsewhere

either, peaking up somewhat around 400Hz, and then dropping into a rather obvious notch centred on 3.5kHz.

Sound quality

The P20 didn't disgrace itself, but neither did it find any particular favour with the listening panel on either day, with a net score round about average — unexceptional, but fair enough for the price.

The overall balance is satisfactory enough, but voices seemed a little under-projected, and the bass a bit thick. Despite the time alignment, more than one panellist referred to a lack of space and air, and a rather flat soundstage in which instruments tended to clump together. The treble is impressively clean and clear, bringing good texture to strings and bite to brass, though it was a little too strong for some tastes.

Conclusion

An interesting design in a number of ways; but in the final summation the P20 didn't generate enough excitement in our ears to stand out from the crowd. We heard after the event that the main driver benefits from a considerable run-in period of 80-90 hours, which is obviously totally impractical in a group review context, but might go some way towards explaining its under-achievement. *PMc*



VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £399.90 (5 YEAR GUARANTEE)

☐ A creative and attractive design with time-aligned drivers, but the sound lacked sufficient excitement to win over our listeners.

✉ Tannoy Ltd, Rosehall Ind Est, Coatbridge, Strathclyde ML5 4TF
 ☎ (01236) 420199

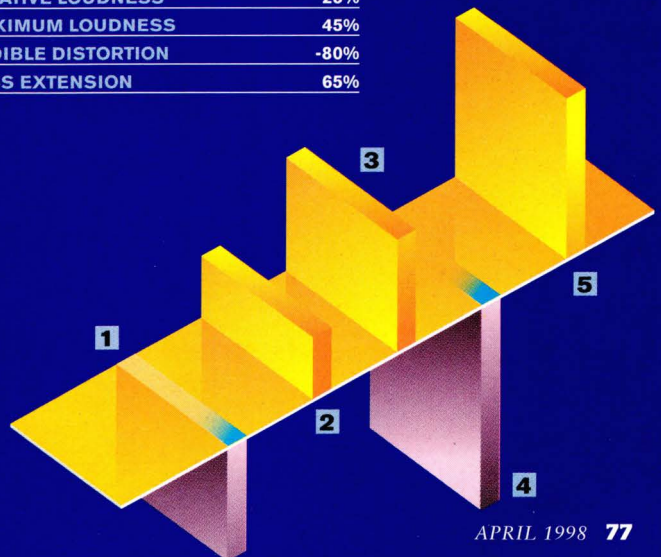
THE LAB REPORT

This speaker has evidently been designed as a squat floorstander, its angled baffle orientating the bass/mid and alloy treble units towards a higher listening position. Adopting this as the measuring axis reveals a generally depressed midband with peaks at 750Hz (linked to a spurious port resonance and also reflected in the impedance trend), a strong mode at 3.9kHz (caused by the tweeter's asymmetric faceplate) and a strongly emphasised treble above 8kHz. This distinctly bright balance is ameliorated if you choose to listen either above or to one side of the main axis, but will prove of little comfort for any amplifier facing its untidy impedance trend. Would you believe a three Ohm impedance >12kHz?!

Tannoy is using an advanced, glass-fibre-stiffened polypropylene bass/mid unit, though for whatever reason, its distortion increases quite markedly through the midband until the treble dome takes over. Distortion up to 7 per cent was recorded between 90-96dB through this region — a surprisingly poor result, particularly as the speaker is not insensitive at 88.8dB/1W/1m. On a more positive note, the rear-facing port offers a broad bass reinforcement at 45Hz, with -3dB points at 30-72Hz, and is accurately integrated with the bass driver to deliver a projected, in-room extension of 39Hz or so. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	-45%
2	RELATIVE LOUDNESS	25%
3	MAXIMUM LOUDNESS	45%
4	AUDIBLE DISTORTION	-80%
5	BASS EXTENSION	65%



B&W CDM1 SE

B&W's CDM1 enjoyed considerable success, due in no small part to carrying off the EISA Award for European Loudspeaker of the Year in 1995/6, itself a direct consequence of some innovative thinking at the design stage. 1998 sees the updated £600 CDM1 SE, which to most intents and purposes looks identical to the original. But the new model features a number of technical improvements.

The most visible change is a 'phase plug' (which B&W calls a dispersion modifier) fixed to the magnet pole-piece, extending out through the centre of the cone to widen dispersion in upper midband. The crossover network has been modified too, so that bass and treble sections are now on physically well separated boards. The former has extra elements for more precise control, while in the latter, electrolytic capacitors have replaced the polypropylene variety.

Otherwise it's the same mixture as before, and a rather cunning re-invention of the classic standmount two-way, thanks to an interesting shape, an externally mounted tweeter, and a clever bit of cabinetwork which combines high-class, real-wood-veneered flat surfaces with painted, radiused MDF fillets to very elegant effect.

There's logic behind the shape. Angling

the top section of the baffle helps spread internal standing waves and should diffuse some of the tweeter reflections (the tweeter itself points forward); while the post-formed cabinet edges avoid abrupt baffle-edge discontinuities. The cast-frame main driver has a 120mm Kevlar cone, and is loaded by a large port, but foam bungs are supplied to implement sealed-box mode instead.

Room measurements suggest that some wall reinforcement may be helpful even with the ports active, and while the overall balance is well ordered, it's not particularly smooth, though happily it avoids the leanness in the lower midband that often afflicts small speakers. The extreme treble response is significantly stronger than that of the non-SE predecessor.



fine all-round performer, notably clean and particularly strong through the midband. The latter is beautifully coherent and delicate, with considerable dynamic range, and a realistic warmth, generosity and richness usually lacking in small speakers.

The presence region is a bit laid back and shut in, with a slight touch of nasality, but cunningly avoids aggression, which makes this one speaker that relishes being driven hard.

Although the bass seems reasonably well extended, it didn't sound very firm and seemed to lack serious drive and authority. However, this observation might not be entirely reliable, since Kevlar-cone main drivers are known to get better with extended use, and group reviews don't allow enough time for extended running in.

Sound quality

The CDM1 SE was presented twice on Day One, with rather obvious contradictions in the panel's scoring. This probably has as much to do with the model that preceded it as the speaker itself, and is an unavoidable difficulty when dealing with loudspeakers which show considerable variation in presentation between different models.

The net result still looks pretty positive, the general consensus being that this is a

Conclusion

Still one of the most attractive speakers on style and presentation grounds, this latest CDM1 SE also turned in an impressive sonic performance, with a midband that's certainly a class leader, and a dynamic performance that puts smaller speakers to shame. Just how much better it is than its predecessor is difficult to judge without side-by-side comparisons, but the SE has done enough to justify continued Recommendation. *PMc*

VERDICT

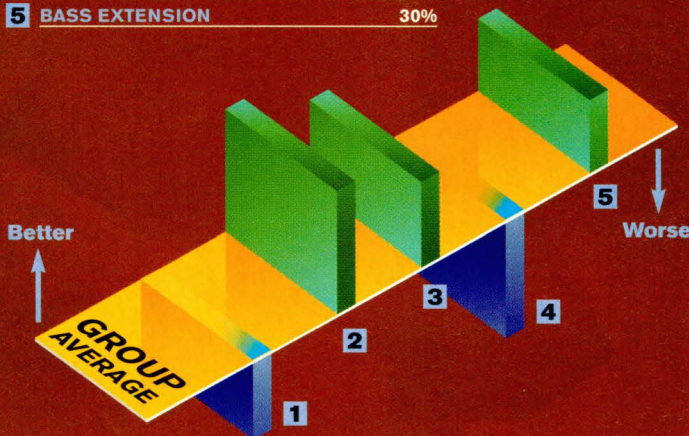
SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £599.95 (1 YEAR GUARANTEE)

A gorgeous-looking standmount with one of the best midbands around, and a subtle combination of other qualities besides.

B&W Loudspeakers Ltd, Marlborough Road, Churchill Ind Est, Lancing, W. Sussex BN15 8TR
 (01903) 750750

HOW IT COMPARES

1	EASE OF DRIVE	-25%
2	RELATIVE LOUDNESS	50%
3	MAXIMUM LOUDNESS	35%
4	AUDIBLE DISTORTION	-45%
5	BASS EXTENSION	30%



THE LAB REPORT

The unique Virtual Instrument technology utilised by *Hi-Fi Choice* allows every aspect of B&W's 'Special Edition' CDM1 monitor to be compared with its forebear (*HFC 160*) without the 'original' CDM1 actually being present. We find that the overall sensitivity is increased from 88.0dB to 89.3dB/1W/1m while the response, though still very smooth throughout the midrange, now shows a little added 'sparkle' through its high treble. The increase in sensitivity is within normal production tolerances but the brighter treble was confirmed by B&W as a deliberate move to improve the "liveliness of the speaker over a wider listening area".

The Kevlar-coned bass/mid unit now features a 'bullet' atop the pole piece, improving its high frequency dispersion and integration with the alloy dome tweeter. The crossover has also been modified with a higher-order low-pass for the bass/mid unit at 3kHz. All of which has impacted slightly on the speaker's load which, while retaining the 6.7 Ohm dip around 200Hz, now includes a further 4.0 Ohm minimum at 13.5kHz with a reasonably tough -70 degree phase angle at 2-3kHz. Distortion is also a little higher than before through the midband while the bass alignment is fractionally altered, its reflex tuning now brought down to 45Hz which is slightly mis-aligned with the main driver null. A small response notch at 555Hz also coincides with a spurious port resonance. *PMc*

Monitor Audio Monitor 4

Monitor Audio makes several different ranges of speakers, covering different sectors of the market, and distinguished by different levels of drive unit technology and standards of finish.

The Monitor series is the least expensive and elaborate, but this £500 Monitor 4 is the top model therein. It's a floorstander using a twin-main-driver arrangement in sealed-box mode — not the most common configuration around, but one which makes a great deal of sense to my mind, for its capability to supply deep and even bass without resorting to port resonator techniques, while staying within the fashion boundaries of a compact, slimline cabinet.

Size- and shape-wise the Monitor 4 is not dissimilar to the £900 703PMC (HFC 160). Both use MA's attractive 'rosemah' real-wood veneer, but the detail differences in the joinery go at least halfway towards explaining the price differential.

This Monitor 4 has a pretty enough surface finish to be sure, but it's not quite as nicely figured as the more expensive model; neither has it received the same quality of polished lacquer finish, or the same degree of attractive box edge radiusing, which does much to distinguish the latest examples of the speaker builder's art from their prede-

cessors. Another economy measure is that the drivers are surface-mounted, rather than rebated into the baffle.

Looking at them sitting on an unusually well-founded set of spikes, I thought they would look much better if plinths were fitted. When I mentioned this to MA, the company confirmed that matching plinths were indeed available as a £30 option, and apologised for not supplying them. One thing that was supplied: a certain amount of mass loading, within the lower blanked-off section of the enclosure, taking the total weight to a comfortable 13kg. However, this is not done in production, but left to the dealer or end user.

The far-field in-room responses gave rather surprising results. The bass is certainly smoother and more even than most, and quite deep too, due to the closed-box alignment, and despite an 80Hz in-box resonance. Interestingly, best results were achieved with the speakers placed close to a wall. Things get rather strange above 200Hz, however, with a definite lower-mid suckout (250-400Hz), and a midband sensitivity nearly 3dB below that recorded through the bass region. Ultimate treble extension is a little limited too — presumably a function of the small 19mm metal dome tweeter.

Sound quality

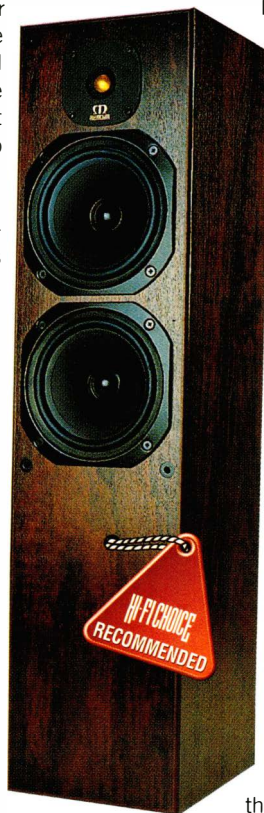
Two separate presentations only served to highlight the danger of relying too heavily on the unsighted panel tests, at least when it comes to loudspeakers. With one praiseworthy exception, the panellists all managed to contradict themselves, highlighting the difficulty of achieving consistency when presented with a succession of contrasting tonal balances, and forcing yours truly again into the role of referee.

Indeed, the Monitor 4's main problem lies in its balance anomalies, which give a character that is somewhat reminiscent of satellite/subwoofer combinations. The bass is a bit too strong, but gets away with it because of its fundamentally good quality — clean, even, and with plenty of headroom and good timing. And the midband is a bit thin and lacking in warmth, although it's nicely coherent and at the same time reasonably smooth.

At the end of the day, the whole is more than the sum of the parts here. The Monitor 4 might be flawed, but it's also fun, communicates well, and enjoys being driven hard.

Conclusion

The low midband sensitivity and oddball balance are a couple of disincentives, but otherwise the news is all good, especially the attractive cabinetwork and the confident headroom. These earn the Monitor 4 a Recommendation. *PMe* ▶▶



VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £499.99 (3 YEAR GUARANTEE)

☑ An oddball balance, but nonetheless an entertaining sound, plus a good looking real-wood box at a realistic price.

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

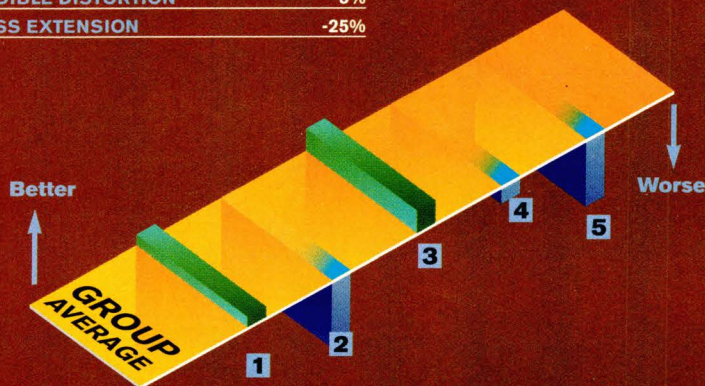
THE LAB REPORT

Although this Monitor 4 employs a different driver complement and layout to the Monitor 3 (HFC 170), there are still parallels between their characteristics. Sure enough, at 86.9dB/1W/1m, the system sensitivity is lower than the Monitor 3's 88.3dB (and way off the 89dB spec.), but the 'over-cooked' bass is just as evident from 100-300Hz and just as likely to be problematic in some rooms. Similarly, the two 165mm Cobex-coned bass/mid units are loaded into a sealed box with a very peaky bass alignment that has its apex at 90Hz and a second-order roll-off thereafter. A modest, in-room bass extension of 62Hz looks to be feasible.

A notch was discovered at 485Hz in the bass driver's nearfield response, which is also reflected in the impedance trend, the latter averaging a fairly low 9.7 Ohms but with an acceptable minimum of 6.3 Ohms at 150 Ohms. The midband also dips away into the presence region where distortion increases above 1 per cent under dynamic conditions at 96dBA. On the other hand, the Monitor 4 benefits from a more positive treble output together with far better control over the high, 30kHz metal-dome resonance. As Paul has suggested, the MA4 is evidently something of a mixed bag — sorry, enclosure. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	5%
2	RELATIVE LOUDNESS	-25%
3	MAXIMUM LOUDNESS	10%
4	AUDIBLE DISTORTION	-5%
5	BASS EXTENSION	-25%



Neat Mystique 2

Neat Acoustics is a small County Durham operation, which keeps a pretty low profile but has nevertheless created something of a cult reputation. Its floorstanding Mystique came in for review a little over a year ago (*HFC* 160), and departed with a Recommended flag but also the feeling that it didn't quite match the standards of the little Petite standmount, even though its price-tag "from £575" looked persuasive.

Now the Mystique is re-launched in Mark 2 guise, featuring a number of modifications over its predecessor, even though the two look very similar indeed from the outside. A very sensible fact, since this is certainly one of the most elegant-looking compact floorstanders around, thanks to ultra-clean lines in which no attempt is made to hide the drive units. These are tidily recessed into the baffle, and no unsightly grille-mounting lugs are left on view. Veneer covers all five visible faces, and each edge has been precisely rounded to soften the look and feel. The whole thing is mounted on a chunky little plinth, painted to match the woodwork, which provides secure mounting and a decent footprint for the floor-spikes. Neat recommends the additional use of Mana

speaker plinths to achieve maximum potential, though it wasn't possible to try this £175 upgrade in the time frame available.

There have been a number of important detail changes. The tweeter is a new soft-fabric-dome type, a first/second-order crossover replaces the second/second arrangement used before, and the bi-wire sockets are now gold-plated. The enclosure, too, has been subtly modified, and now incorporates an acoustic resistance panel for extra cone damping, plus a degree of mass-loading to aid stability.

Being wider than it is deep means the Mystique can accommodate a decent diameter main driver (120mm doped paper cone), while not exceeding a modest box volume. A small port is fitted high up on the back panel.

Like its predecessor, the Mystique 2 delivers a fine in-room balance with good bass extension, though in this Mk2 iteration some wall reinforcement was found beneficial. Integration looks better through the crossover region on the new model, though the new tweeter shows a couple of small peaks at 4kHz and 5kHz on a far-field-averaged, in-room measurement.

Sound quality

First impressions prior to the listening tests were

very positive indeed, so much so that I elected to use the Mystique 2 during the programme/system familiarisation run-throughs. I'd warned the panels that the balance was brighter than average, but my decision received widespread approval.

On the first day (which didn't include the Mystique in the unsighted sessions), there were complaints that nothing had matched its run-through performance. On the second day it came high up most listener's lists, with just one dissenter.

It has a lovely combination of wide dynamic range, fine crossover coherence, good freedom from time-smear and decent bass extension, with a bottom end that's impressively firm and authoritative.

It works particularly well at low levels, but there's no denying that the brighter-than-average balance might not always suit the system, room and listener. There's a slight insistence at the top end that might become a little wearing in the long term, under some conditions — not a problem over the duration of our tests.

Conclusion

The original Mystique was good, but the new Mk2 is a sufficient improvement to warrant a Best Buy rating — though the top end might be a little too 'hot' for some tastes. Sensitivity is modest, so a powerful amplifier is preferable. *PM*



VERDICT

SOUND ★★★★★

VALUE ★★★★★

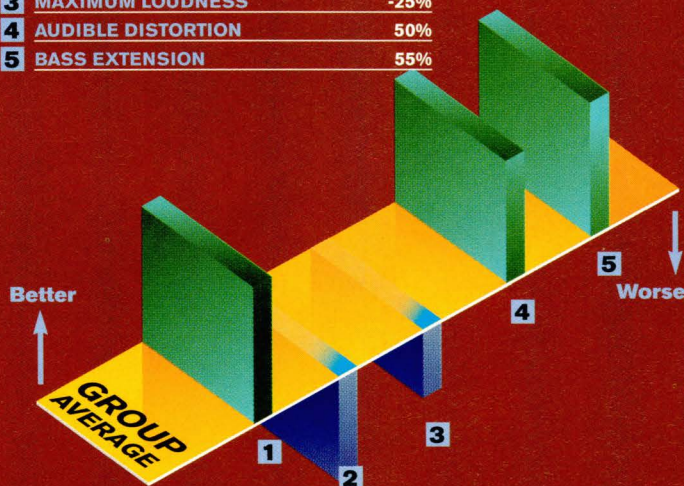
PRICE FROM £575/CHERRY £650
5 YEAR GUARANTEE

A smooth and elegant-looking package which delivers a fine overall sound quality; some might find the top end too insistent.

Neat Acoustics, Unit 1a, Stainton Grove Ind Est, Barnard Castle, Co. Durham DL12 8UJ
(01833) 631021

HOW IT COMPARES

1	EASE OF DRIVE	55%
2	RELATIVE LOUDNESS	-40%
3	MAXIMUM LOUDNESS	-25%
4	AUDIBLE DISTORTION	50%
5	BASS EXTENSION	55%



THE LAB REPORT

We last examined Neat's Mystique back in issue 160, since which time it has been enhanced with a new fabric-dome tweeter and re-worked crossover. The effects are varied. Most obviously, the overall system sensitivity has been increased from 84.1dB to 86.5dB/1W/1m, enabling musical dynamics to be reproduced above 100dBA in the average room. Meanwhile, the speaker load is just as amplifier-friendly (average = 15.1 Ohm). Bass loading looks unchanged with a low 33Hz port-tuning spread from 23-85Hz. A pipe resonance at 205Hz is reflected in both the forward response and impedance trend.

Distortion is now very low indeed at 0.3-0.4 per cent right through the bass and midband at a high 96dBA — an incredible result bearing in mind the speaker's modest sensitivity, even though treble distortion has actually increased to typically 0.8 per cent! Sadly, a narrowband analysis shows a rather peaky response right through the crossover region between 3.5-5.5kHz followed by a lull before a tweeter 'storm' at 14kHz. Assuming you are listening somewhat above the top of the speaker, which is not unlikely, then the Mystique's midrange recovers right through to where the new dome tweeter takes over at 5kHz. Otherwise, I cannot help but wonder if some extra 'loudness' has not been achieved at the expense of the speaker's earlier uniformity. *PM*

TDL CF200 Cotswold

TDL's roots go back some 30 years, and the company's main claim to fame throughout that period has been the use of transmission-line bass loading for the main drivers. True transmission lines are still used for the upmarket Studio series, but in recent years TDL has adopted a 'hybrid' reflex/transmission line approach for more compact and cost effective designs, first with the budget price, vinyl-finished RTL series; and subsequently with the mid-market, real-wood T-Lines.

However, the polypropylene-coned T-Line is being phased out in favour of a new Carbon Fibre range, which fills a similar slot in the marketplace, albeit at slightly higher prices. There are three such models, the standmount CF100, plus the CF200 and CF300 floorstanders — or the Chiltern, Cotswold and Cheviot, to give them their folksy names.

This review focuses on the CF200 Cotswold in the middle of the group: a compact floorstander selling for £650. The key feature is of course the appearance of carbon fibre composite (CFC) in the 125mm main driver cone. As the leaflet points out, carbon fibres have a strength-to-weight ratio greater than steel, while the matrix which holds the fibres in place adds a useful self-

damping component. Other factors might be rather less positive — CFCs are stronger under tension than compression, for example — but nevertheless this is an interesting new diaphragm material, which is already being used in designs from Castle and Rogers, for example.

Regrettably, when it is compared with equally priced rivals, I found the CF200's presentation a little disappointing. There are some nice touches, in the post-formed front edges, for example, and the way the drivers are flush-mounted into the front panel. But the real-wood veneer looks rather anonymous, and wasn't particularly well matched, while the box is a bit square and dumpy, and looks a bit unstable perched on its spikes. In my view a matching plinth would greatly improve the appearance.

The far-field room responses showed a relatively gentle rolloff below 100Hz, indicating that some wall reinforcement is likely to be beneficial. The upper bass is on the strong side, the midband proper is encouragingly flat, but there's a notch 1.5-2kHz, above which the treble recovers, then rolls off rather early.

Sound quality

Panel test results were unimpressive, especially since this is the most expensive model in the test group. It would be naive to rely wholly on the unsighted listeners' findings, but hands-on work only reinforced them.

The score reflected a sound which was considered generally competent, but also rather uninspiring: "Not bad — not good — not much really," according to one panellist, while another praised the tonal balance and good vocal characterisation, criticising the lack of serious bottom-end weight and top-end 'air'.

My first impression in the hands-on work was positive too, as the neutral and well-judged midband is indisputably impressive, and the speaker works well at low late-night levels. The following morning I fed it a more demanding diet of heavy rhythmic material, and found the bass rather less satisfactory, in weight, drive and pace.

Conclusion

By no means a bad loudspeaker; in many respects its sound is good, especially the midband. But it doesn't stand out from the rest of the pack, physically or sonically, and at the same time carries the highest price-tag

in the test group. *PMe*



VERDICT

SOUND ★★★★★

VALUE ★★★★★

PRICE £649.95 (LIFETIME GUARANTEE)

☑ Fine midband tonality and dynamic range, but less happy towards the bandwidth extremes; could have more style and better finish for the price.

✉ TDL Electronics, PO Box 98, High Wycombe, Bucks HP10 9SH.

☎ (01628) 850111

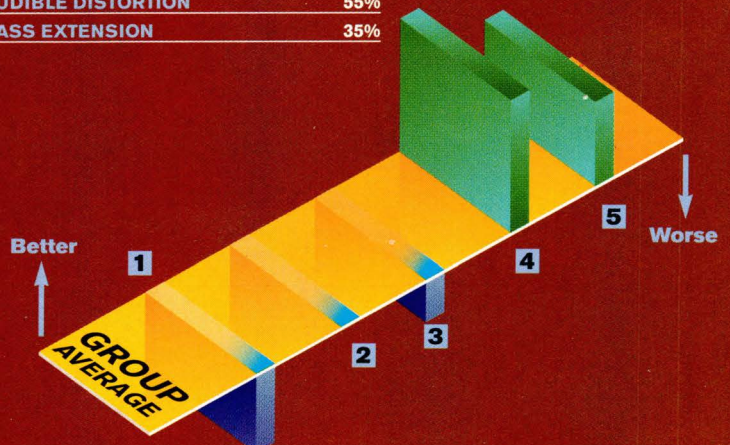
THE LAB REPORT

As part of TDL's 'Carbon-Fibre' range, the CF200 Cotswold brings new technology to an established format. Sensitivity meets TDL's 87dB specification at 87.6dB/2.83V/1m but the forward response — in common with earlier TDL speakers — is still slightly lumpy with some emphasis of the presence region and loss of midrange, which becomes more obvious as you move off-axis. Interestingly, there's a peak at 4kHz that coincides with a very similar resonance observed from Castle's carbon-fibre Severn 2 (see *HFC 174*). There's an additional swing in phase angle between 1.8-5.2kHz on the impedance plot (where THD also increases slightly) following a protracted sub-6 Ohm minimum from 150-750Hz. So the CF200 might prove a little trickier to drive than its '8 Ohm specification' might suggest.

Naturally, the CF200 still adopts TDL's truncated transmission line bass-loading, which succeeds in extending the projected in-room response to 40Hz while keeping bass distortion typically <0.3 per cent at 96dBA. The bass response also looks pretty smooth from 400Hz all the way down to 85Hz, despite the 70Hz-tuned 'port' suffering a severe quarter-wave resonance at 280Hz (+4.5dB). The aluminium dome tweeter, meanwhile, cracks just above the audio range at 23.6kHz but is otherwise reasonably 'laid-back' in balance. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	-30%
2	RELATIVE LOUDNESS	0%
3	MAXIMUM LOUDNESS	-15%
4	AUDIBLE DISTORTION	55%
5	BASS EXTENSION	35%



Conclusions

Fourteen new loudspeakers priced between £230 and £650 per pair implies a great variety of sizes, shapes and cosmetic trimmings, though it must be said that the group as a whole was a real mixed bunch.

During the decade I've been doing the *Choice* speaker reviews, there's been a gradual tendency for different designs to get closer and closer to each other, in terms of balance and tonal presentation at least. Not so this particular group, which shows



Eltax Linear Response

quite wide variations between models, and which in turn explains why the listening panel found it difficult to make consistent judgements on this occasion.

It also explains why the hit rate of Best Buy and Recommended models is rather lower than usual. Even the three Best Buy flags were only awarded with significant qualifications. If one BBed model suits you, the other two probably won't — but then no serious speaker purchase should be made without careful prior audition!

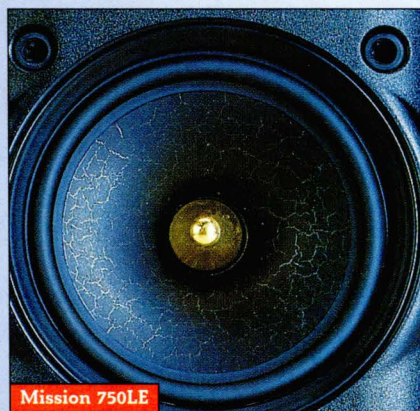
GROUP A (BELOW £300)

Acoustic Energy AE200	£249.95
Celestion 23i	£299.00
Eltax Linear Response 4.5	£249.00
JPW ML710	£229.99 (+30 plinth)
Mission 750LE	£248.00

The **Acoustic Energy AE200** (£250) might be a little too characterful, and doesn't have a neutral midband, but it has charm, and the price could be a new low for a metal-coned main driver.

The **Celestion 23i** (£299) looks a bit crude, but gave an enjoyable performance. The balance encourages volume, while the lively disposition communicates well with dance music.

The **Eltax Linear Response 4.5** (£249) has



Mission 750LE

an unusually dumpy shape but a notably smooth and even-handed balance. It's certainly decent value for money, though the laid-back midband does limit its communication skills.

The **JPW ML710** (£230+£30 plinth) is good material value for money, and looks altogether more impressive than the ML510 standmount. The trouble is that it doesn't sound as good, because the bass doesn't work so well.

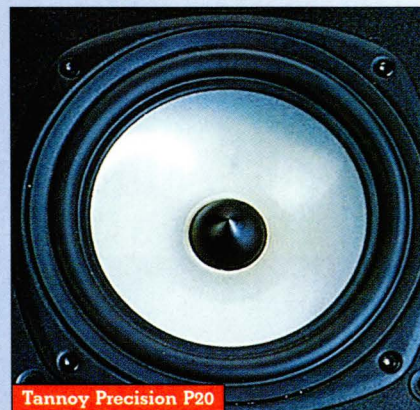
Mission's 750LE (£248) looks absolutely gorgeous, setting new standards for affordable miniatures. Its high-class midband is a major strength, but the lack of bass weight is a significant limitation, which might be less obvious in smaller rooms.

GROUP B (£301-£ 9)

Castle Kendal	£449.90
Dynaudio Audience 5	£398.00
NHT 1.5	£449.00
PMC TB1S	£430.05
Tannoy Precision P20	£399.90

The **Castle Kendal** (£450) has a decidedly forward, bass-light balance, which might be too edge-of-seat for some, but others will undoubtedly enjoy it. Also, it is one of the prettiest and most compact floorstanders around.

A size down from the Audience 50, **Dynaudio's Audience 5** (£398) enjoys a superior midband, but the light bass with a strong treble leads to a rather thin and cold balance.



Tannoy Precision P20

Perhaps it's better suited to smallish rooms.

The **NHT 1.5** (£449) does a quite remarkable job of belying its modest dimensions by delivering a genuinely full-scale sound with fine dynamic range. However, it's not the smoothest sound around, and styling is decidedly oddball.

The **PMC TB1S** (£430) is a lower-price variation on the TB1. Though it's a good all-rounder with a generous sound and superior dynamic capabilities, the balance is sufficiently idiosyncratic to make prior audition mandatory.

The **Tannoy Precision P20** (£400) is interesting in a number of ways, notably the unusual shape, but didn't generate enough sonic excitement to stand out from the crowd.

GROUP B (OVER £450)

B&W CDM1 SE	£599.95
Monitor Audio Monitor 4	£499.99
Neat Mystique 2	£575.00
TDL CF200 Cotswold	£649.95

The **B&W CDM1 SE** (£600) is one of the most attractive and stylish speakers around, with a midband that's certainly a class leader, and a dynamic performance that puts smaller speakers to shame.

The **Monitor Audio Monitor 4** (£500) has low midband sensitivity and a rather oddball tonal balance, but otherwise the news is all good, especially the attractive cabinetwork, and the



B&W CDM1 SE

confident headroom it displays on most music.

The original **Neat Mystique** was good, but this new 'from £575' **Mk2** is significantly better, with the minor caveat that the top end might be a little too 'hot' for some tastes. Fine openness and full bandwidth, but sensitivity is modest, so a powerful amplifier is preferable.

The **TDL CF200 Cotswold** (£650) features a woven carbon-fibre main driver with reflex transmission-line loading. The midband has fine tonality and dynamic range, but regrettably this speaker is less happy towards the bandwidth extremes, and it could have more style and better finish for the price.

BEST BUYS

One of two stand-mounts to pick up a Best Buy accolade, the £449 **NHT 1.5** has a strange but entirely logical shape and (on our samples) an even more peculiar finish. However, the laminate-surface box is exceedingly tough, and the speaker's ability to deliver a genuinely full-scale sound with plenty of loudness capability from such a small and discreet enclosure is very impressive indeed, even if the net result

could be a little smoother and more transparent overall.

A standmount variation on the transmission line theme, the £430 **PMC TB1S** is essentially a TB1 dressed in pro-audio fatigues at a saving of £50 over its real-wood sibling. The balance is decidedly laid back, even a little shut in towards the presence band, but the dynamic capabilities and musical discrimination through

the bass and lower midband set it apart from the crowd.

The £575 **Neat Mystique Mk2** is a gorgeous-looking compact floor-stander, and there's no question in my mind that it represents a significant sonic improvement over its predecessor. Sensitivity is modest and the treble might be a little 'hot' for some tastes, but the fine bandwidth and dynamic range through bass and midrange is very impressive.



HI-FI CHOICE
BEST BUY

Neat Mystique Mk 2 p80



HI-FI CHOICE
BEST BUY

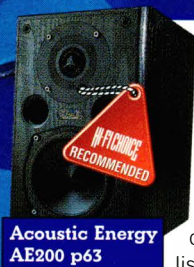
NHT 1.5 p73



HI-FI CHOICE
BEST BUY

PMC TB1S p75

RECOMMENDED



HI-FI CHOICE
RECOMMENDED

Acoustic Energy AE200 p63

Making metal cone technology available at a new low price, the £250 **Acoustic Energy AE200** was quite a hit with our listening panel. More extended exposure brought reservations over some midband over-projection, but this is an entertaining and communicative miniature standmount.

As an astonishingly accomplished example of sleek industrial design, the beautifully strokeable **Mission 750LE** looks as though it could cost a lot more than the £250 asking price. The midband is exceptionally subtle and well judged, though small size limits its ability to deliver real bass grunt.



HI-FI CHOICE
RECOMMENDED

Castle Kendal p69

A small main driver and sealed box loading also leave the compact floor-standing **Castle Kendal** (£450) decidedly short of weight and welly, but what bass there is has poise and timing, while the rather forward midband is clean and informative, and the cabinetwork beautifully finished.

A classy real-wood finish also distinguishes the floor-standing £500

Monitor Audio Monitor 4, though the presentation is very

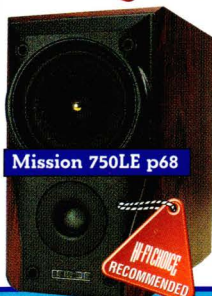


B&W CDM1SE p78

HI-FI CHOICE
RECOMMENDED

different. The bass region is rather full compared to the mid-band, but the extra bass driver gives plenty of power handling and a good impression of head-room too.

Building on the considerable success of the award-winning original, the £600 **B&W CDM1SE** not only looks great, with a touch of individuality in the external tweeter, but also shows the dynamic advantages of the larger standmount configuration. Fine midband voicing is a major plus.



Mission 750LE p68

HI-FI CHOICE
RECOMMENDED



Monitor Audio Monitor 4 p79

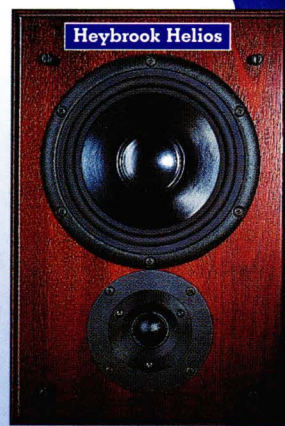
HI-FI CHOICE
RECOMMENDED

BEST OF THE REST



Audio Gem Emerald

Acoustic Energy AE109	£350	Musical Technology Harrier	£400
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Heybrook Helios

Five Stars

Paul Messenger explains why you should visit an independent

Why use a specialist hi-fi dealer? The short answer is because he knows one hell of a lot more about hi-fi than you do. And if you've gone to the trouble of picking up a specialist magazine on the subject, you're obviously interested in something rather more than a mini system from the nearest electrical superstore.

You've probably bought this magazine for one of two reasons. You're looking for advice (presumably unbiased and good) on choosing and using your hi-fi system, and/or you're checking out the ads to decide where to go and buy it.

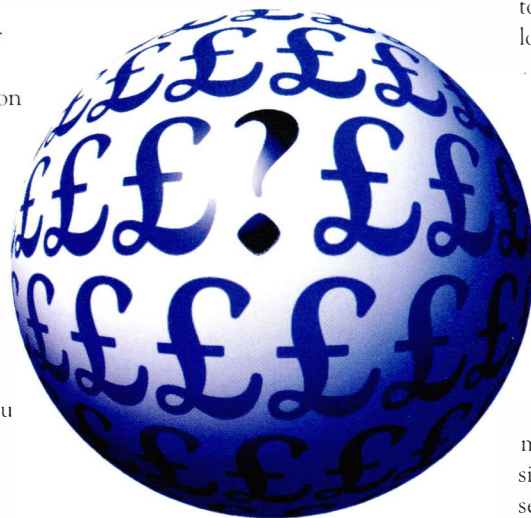
The independent specialist dealer doesn't know everything, and he doesn't know much about you, but if music's an important part of your life, he's the only guy around who's able (and hopefully willing) to help you choose the equipment which will give you the best long term satisfaction.

Power of the Press

Dealers sometimes moan to me about the power of the press, and the disproportionate influence of its 'Best Buy' and multi-star ratings. Well, I've been in the press for twentysomething years, and still feel more ignorant than powerful.

The more I mess around with hi-fi gear, the more I become aware of our lack of real understanding of the subtleties involved, and the more I appreciate the importance of the dealer's skills and experience, in bringing together components so that the whole is greater than the sum of its parts.

We hacks get paid to write words, often about components in isolation, because



individual product reviews are still the staple diet of the press. They can sometimes provide a useful guide to the way a product performs, but only under the particular circumstances in which the review was conducted.

The hi-fi reviewer attempts, with varying degrees of success, to evaluate a particular component, and find something interesting (and hopefully positive) to say about it. That's about the end of it, and it's on to the next product.

The magazine prints the review, and that very process magically confers a measure of authority. Experienced hi-fi

enthusiasts, who read reviews over a period of years and try out various products themselves, soon start to realise the limitations of that approach. Some reviews are better than others, but none can get to grips with the real heart of the problem - whether a given product will improve your musical satisfaction, in your system and your room.

The Role of the Dealer

The dealer's role is very different, and potentially much more valuable. He has the chance to talk one-on-one. If he's good at his job, he'll use that opportunity to find out what you as an individual are looking (or listening) for.

His motivation is very different too. Sure he wants to make a sale. That's the lifeblood of any shop. But he also knows that if something he sells really does deliver long term satisfaction, there's a very good chance you'll come back again to see if he can repeat the trick some time in the future.

If you go into a shop and demand a particular CD player, on the basis that it got seven stars (out of five) in last month's magazine, the shop will probably simply take the line of least resistance and sell it to you. (Or switch-sell you to a similar price alternative, if he's fresh out of stock of that particular flavour-of-the-month.)

If you go in and say you're looking for a CD player, and want his advice on what to choose, things are liable to become more interesting. The onus is now on the dealer to show what he can do. His first task is to ask the right questions to try and get some idea of what you might be after.

Asking the questions is the easy bit. The real skill comes in using the information to come up with a shortlist of likely contenders, and then conducting a demonstration so that you have a real chance to play a central role in the

For Value

specialist dealer if you are searching for real hi-fi satisfaction

decision making process.

Putting together a successful hi-fi system might not be as difficult as it was twenty or thirty years ago, but it's just as easy to make a mess of things. Put the 'wrong' combination of components together and it'll still sound a lot better



than any cute little mini system package. It might even rate a five star review. But it won't match the potential of a carefully balanced and properly installed system, and it certainly won't cater for your own particular preferences and personality.

We British are notoriously indiscriminating consumers, at a mass market level at least. The majority of the population don't even bother to drive a car they're thinking of buying, never mind take the trouble to listen to hi-fi equipment.

The majority will therefore end up with hyperstore mediocrity, and hi-fi that's about as tasty as supermarket bread. But if music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority.

You know full well that your music collection is as individual as your wardrobe, and just as precious too, so it's worth taking the time and trouble to search out the dealer and equipment that will make that collection come alive, and give you a new buzz every time you play your favourite discs.

The independent specialist may not beat the chain store on price, but he continues to thrive in a hostile environment because real hi-fi is so much more than a matter of price. The people who work in these shops are themselves enthusiasts, often with many years of experience in meeting customer's needs, and the very necessary expertise to ensure that the whole thing is properly set up to deliver the best results.

The better the hi-fi, the more important it is to get the fine details right at the installation end of things, but even the least expensive equipment can be made to sound a whole lot better if good care is taken over the fine details - the support furniture, the cabling, the positioning of speakers and so on.

Without expert assistance even high class hi-fi can give mediocre results. With it you'll stand a very good chance of ending up with something rather more than a consumer durable - something which will be a source of considerable pleasure and genuine emotional satisfaction for decades to come.

I agreed to write this signed piece, irrespective of the specific sponsors, because I believe the independent specialist dealer plays a vital role in giving customers long term hi-fi satisfaction.
"The views and opinions expressed here are my own and not necessarily those of hi-fi choice."

Paul Messenger

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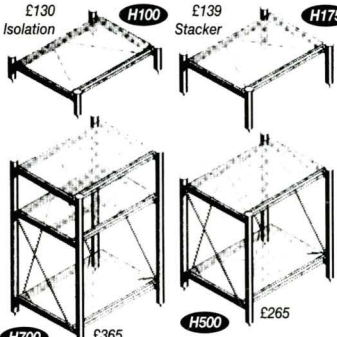
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Our Three Step Guide to Buying Hi-Fi

The legendary *Hi-Fi Choice* Directory is now simpler to use than ever before, but contains all the information you need to select and buy the perfect hi-fi system.

STEP 1 Discover which products fall within your budget by using our Price Guide (starts on the next page). This listing is updated bi-monthly and includes all hi-fi products currently available in the UK. It is organised by product type, then by price band, and is sorted alphabetically. Products whose names are printed in **red** are those we have reviewed. That leads us to...

STEP 2 Read about the hi-fi equipment we have reviewed in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy and Recommended awards that denote products of exceptional quality and value. The Directory is sorted by product type and listed alphabetically, and the beginning of each section provides essential information about each kind of hi-fi component.

STEP 3 Find your nearest hi-fi store in our Dealer Directory (at the end of the 'reviewed product' directory) to book a demonstration of the products you are interested in.

Best Buys and Recommendations

If you see a Best Buy (**red**) or Recommended (**blue**) flag at the beginning of an entry in our Directory of reviewed products, the item concerned is particularly deserving of your attention.

B **Red** signifies the Best Buy swing-tag, which indicates products of the best quality and superb value for money in their price category.

R **Blue** Recommended products offer excellent quality and value, but not the same cost-effectiveness as a Best Buy.

Please note that an expensive Recommended product will nearly always perform better than an inexpensive Best Buy.

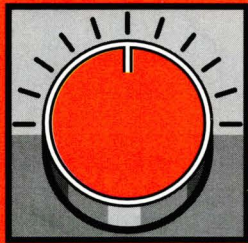
Using Best Buys and Recommendations to buy hi-fi

Do not commit the cardinal sin of dashing into your local dealer, magazine in hand, demanding to purchase Best Buy CD player A, Best Buy amplifier B and Best Buy speakers C. This is unlikely to result in your long-term satisfaction. Our belief at *Hi-Fi Choice* is that you must consider the hi-fi system as a complete entity, not as a collection of components. While a superb system might well contain Best Buy and Recommended components, one cannot lump together Best Buys and Recommendations in the hope that they will automatically perform superbly. These ratings make a useful guideline for short-listing components worth trying, but only by hearing them for yourself can you draw meaningful conclusions about what suits your taste. Furthermore, don't panic if the dealer offers you equipment that we have not tested. At the end of the day, what matters most is that your hi-fi system fits your tastes like a glove, and it is the dealer's challenge to ensure your satisfaction by any means – and components – necessary!



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AMPLIFIERS INTEGRATED

KEY

Ⓢ - number of line-level inputs.
 '20W' - output power per channel into nominal load of 8 Ohms.

Up to £250

Aiwa XA-003		40W	140
AMC 3020	Ⓢ 4	20W	100
AMC 3025A	Ⓢ 4	30W	130
AMC 3050A	Ⓢ 4	45W	170
Cambridge A1 Mk III	Ⓢ 4	40W	120
Cambridge A3i	Ⓢ 4	60W	200
Denon PMA-250SE	Ⓢ 4	30W	160
Denon PMA-350SE	Ⓢ 5	50W	200
Denon PMA-425R	Ⓢ 5	45W	230
Denon PMA-100M	Ⓢ 5	80W	240
Goodmans Delta 801			140
H/K HK610	Ⓢ 6	30W	180
H/K HK620	Ⓢ 6	40W	250
JVC AX-V4BK	Ⓢ 6	30W	200
JVC AX-R5BK	Ⓢ 5	45W	200
Kenwood KA-1080	Ⓢ 4	60W	140
Kenwood KA-3080R	Ⓢ 4	70W	170
Kenwood KA-3020SE	Ⓢ 5	50W	200
Marantz PM-47	Ⓢ 5	40W	150
Marantz PM-57	Ⓢ 5	50W	200
Marantz PM-66SE	Ⓢ 5	50W	230
Marantz SR-47	Ⓢ 4	40W	250
Musical Fidelity E1	Ⓢ 6	30W	199
NAD 310	Ⓢ 6	20W	100
NAD 312	Ⓢ 6	25W	200
Pioneer A-105	Ⓢ 5	30W	130
Pioneer A-204R	Ⓢ 5	25W	160
Pioneer A-300R	Ⓢ 5	50W	200
Pioneer A-305R	Ⓢ 5	50W	200
Pioneer A-405R	Ⓢ 5	60W	250
Rega Brio	Ⓢ 3	30W	229
Rotel RA-831	Ⓢ 4	35W	150
Rotel RA970BX	Ⓢ 6	60W	250
Sherwood AX-7030R	Ⓢ 6	95W	250
Sony TA-FE210	Ⓢ 5	45W	130
Sony TA-FE310R	Ⓢ 6	45W	150
Sony TA-F248E	Ⓢ 6	40W	200
Sony TA-F448EB	Ⓢ 6	55W	250
TEAC A-R300	Ⓢ 6	45W	200
TEAC A-R500	Ⓢ 6	90W	250
Technics SU-V300	Ⓢ 6	25W	150
Technics SU-V500	Ⓢ 6	30W	180
Technics SU-A600 Mk3	Ⓢ 6	30W	200
Technics SU-V620	Ⓢ 6	70W	230
Technics SU-A700 Mk3	Ⓢ 6	45W	250
Yamaha AX-390	Ⓢ 5	60W	170
Yamaha AX-492	Ⓢ 5	85W	220

£251 to £500

Alchemist Maxim	Ⓢ 5	30W	319
AMC CVT 3030A	Ⓢ 6	30W	400
Arcam Alpha 7	Ⓢ 5	40W	260
Arcam Alpha 8	Ⓢ 5	50W	360
Arcam Alpha 9	Ⓢ 7	70W	500
Audio Analogue Puccini	Ⓢ 4	40W	450
AudiInnov Alto	Ⓢ 6	35W	300
Audiogram MB1	Ⓢ 5	35W	493
Audiolab 8000LX	Ⓢ 6	60W	470
Audiolab 8000A	Ⓢ 6	60W	500
Aura VA-100 II	Ⓢ 5	70W	350
CR Dev CR324	Ⓢ 5	100W	499
Creek 4330	Ⓢ 5	35W	279
Creek 4340	Ⓢ 5	35W	279
Creek 4330R	Ⓢ 5	35W	355
Creek 5250	Ⓢ 5	50W	450
Denon PMA-725R	Ⓢ 5	65W	350
EMF Audio Sequel	Ⓢ 5	50W	450
H/K HK640	Ⓢ 5	55W	400
Kenwood KA-5090R	Ⓢ 6	65W	300
Kenwood KA-7090R	Ⓢ 6	85W	400
Magnum IA120	Ⓢ 6	65W	265
Magnum IA170	Ⓢ 6	96W	330
Magnum IA170SE	Ⓢ 6	90W	430
Marantz PM-68	Ⓢ 5	90W	300
Marantz PM-66 KI Sig.	Ⓢ 5	50W	400
Micromega Minium	Ⓢ 6	40W	350
Mission Cyrus SL	Ⓢ 5	50W	398
Monrio Asty	Ⓢ 6	60W	440
Musical Fidelity E11	Ⓢ 6	60W	300

Musical Fidelity A2	Ⓢ 5	25W	500
NAD 314	Ⓢ 6	35W	260
NAD 317	Ⓢ 6	80W	470
Onkyo A9210	Ⓢ 6	40W	260
Onkyo A921	Ⓢ 7	50W	350
Onkyo A922	Ⓢ 7	70W	400
Orelle SA-100	Ⓢ 7	50W	499
Pioneer A-400X	Ⓢ 5	50W	300
Pioneer A-605R	Ⓢ 5	80W	400
Pioneer A-300R Precision	Ⓢ 5	35W	400
Pro-Ject Model 7	Ⓢ 6	40W	300
Rega Elex	Ⓢ 4	50W	398
Shearpe 2.5	Ⓢ 5	35W	489
Sony TA-FA3ES	Ⓢ 6	70W	400
Sony TA-F3000ES	Ⓢ 6	60W	500
Talk Electronics Storm 1	Ⓢ 6	50W	500
TEAC A-H500	Ⓢ 6	50W	280
Technics SU-A800 Mk2	Ⓢ 6	55W	300
Technics SU-A900 Mk2	Ⓢ 6	90W	450
Technics SU-A900 Mk2	Ⓢ 6	70W	500
Yamaha AX-592	Ⓢ 6	100W	280

£501 to £700

Alchemist Kraken Integrated	Ⓢ 5	55W	579
Alchemist Nemesis	Ⓢ 6	80W	700
Audio Analogue Puccini SE	Ⓢ 5	50W	595
Audio Note Kanji Line SE	Ⓢ 9	9W	699
Audio Note First integrated	Ⓢ 4	40W	699
Audiogram MB2	Ⓢ 6	60W	599
Audiolab 8000S	Ⓢ 6	60W	700
CR Dev Kalyso	Ⓢ 5	15W	599
CR Dev CR325	Ⓢ 5	175W	699
Creek S250R	Ⓢ 5	50W	575
Creek S250SER	Ⓢ 6	60W	665
Densen Beat B-100	Ⓢ 5	60W	600
DPA Renaissance int.	Ⓢ 5	40W	595
Exposure XX Super	Ⓢ 6	55W	700
Fase Evoluzione Performance 2.0	Ⓢ 6	40W	570
Gamma Gemini	Ⓢ 12W	699	
H/K HK660	Ⓢ 6	65W	700
Hi Q Sound MCI	Ⓢ 4	30W	565
JoLida 202	Ⓢ 5	40W	695
LFD Integrated 0	Ⓢ 5	50W	549
Linn Majik (Line)	Ⓢ 33W	650	
Lynwood Opal	Ⓢ 6	80W	685
Magnum IA200	Ⓢ 7	100W	599
Magnum Class A	Ⓢ 85W	690	
Mission Cyrus IIII	Ⓢ 5	50W	598
Musical Fidelity A220	Ⓢ 5	50W	700
Myryad MI 120	Ⓢ 6	60W	530
Naim Nait 3	Ⓢ 30W	575	
Orelle SA-100RX	Ⓢ 7	75W	649
Prime Design A-100	Ⓢ 100W	650	
Quad T7 Integrated	Ⓢ 85W	700	
Roksan Caspian	Ⓢ 70W	695	
Rose Scion	Ⓢ 65W	615	
Shearpe Phase 2	Ⓢ 50W	649	
Stemfoort SF60	Ⓢ 60W	549	
Talk Electronics Storm 2	Ⓢ 65W	650	
TEAC A-BX7R	Ⓢ 50W	700	

£701 to £1000

Alchemist Forseti Integrated	Ⓢ 100W	949	
Audio Note Oto Line PP	Ⓢ 12W	950	
AVI S2000MI	Ⓢ 100W	999	
Copland CSA8	Ⓢ 60W	945	
Credo IMP702	Ⓢ 70W	938	
Credo IMP703	Ⓢ 70W	1,000	
Electrocompaniet ECI-2	Ⓢ 50W	995	
Exposure XV Super	Ⓢ 55W	800	
Fase Evoluzione Performance 1.1	Ⓢ 70W	790	
Fase Evoluzione Performance 1.0	Ⓢ 60W	790	
Golden Tube Audio SI-50	Ⓢ 50W	1,000	
H/K HK680	Ⓢ 85W	1,000	
LFD 0 LE Integrated	Ⓢ 60W	799	
Linn Majik (Phono)	Ⓢ 33W	800	
Magnum Class A SE	Ⓢ 85W	815	
Marantz PM-17	Ⓢ 60W	900	
Meridian 551	Ⓢ 55W	795	
Micromega Tempo 1	Ⓢ 50W	750	
Micromega Tempo 2	Ⓢ 75W	950	
Minstrel Ultra Linear	Ⓢ 26W	900	
Naim Nait 3 R	Ⓢ 30W	760	
Pioneer A-07	Ⓢ 80W	1,000	
Primare A20	Ⓢ 80W	800	
Rega Elicit	Ⓢ 70W	730	
Shearpe Phase 2 Reference	Ⓢ 50W	799	
Sonneteer Alabaster	Ⓢ 50W	900	
Stemfoort SF100	Ⓢ 100W	849	
TEAC AB-X10	Ⓢ 100W	1,000	
Unison Simply Two	Ⓢ 12W	995	

£1001 to £2000

Art Audio Integra	Ⓢ 30W	1,499	
AudiInnov Classic 25	Ⓢ 25W	1,099	
AudiInnov S500	Ⓢ 25W	1,199	
Audio Note Soro Line PP	Ⓢ 20W	1,200	
Audio Note Oto Line SE	Ⓢ 12W	1,200	
Audio Not Oto Phono SE	Ⓢ 12W	1,500	
Audio Note Soro Line SE	Ⓢ 18W	1,699	
Beam-Echo SA-50	Ⓢ 50W	1,950	
Bryston B-60	Ⓢ 75W	1,280	
Copland CSA14	Ⓢ 70W	1,199	
Copland CSA28	Ⓢ 5	1,299	
Copland CTA401	Ⓢ 25W	1,699	

Experience unrivalled realism!



"This pre/power combo gets behind the recording and hi-fi... it simply makes music!"
 Alan Sircom, Hi-Fi Choice, November 1994

For more information or your nearest stockist, ☎ (0181) 947 5047, or e-mail 73064.1710@compuserve.com

audio research
HIGH DEFINITION

CR Dev Romulus V3	Ⓢ 35W	1,198	
CR Dev Remus V3	Ⓢ 60W	1,989	
Credo LIM 702	Ⓢ 60W	1,191	
Credo LIM 703	Ⓢ 60W	1,249	
EAR 834	Ⓢ 40W	1,999	
Graet Venticinque	Ⓢ 20W	1,995	
LFD Integrated 1	Ⓢ 65W	1,099	
Marantz PM-16	Ⓢ 90W	1,700	
Meracur Intrare	Ⓢ 60W	1,095	
Minstrel Partridge	Ⓢ 26W	1,499	
Monrio MC-205	Ⓢ 80W	1,545	
Musical Fidelity A1000	Ⓢ 50W	1,500	
Primare 301	Ⓢ 80W	1,800	
Rogers E-20a	Ⓢ 20W	1,229	
Rogers E-40a	Ⓢ 40W	1,900	
Sonic Frontiers Anthem Integrated	Ⓢ 25W	1,295	
T+A PA1200	Ⓢ 90W	1,350	
T+A R1200R	Ⓢ 90W	1,495	
T+A PA1500	Ⓢ 135W	1,650	
T+A R1500R	Ⓢ 135W	1,895	
Unison Simply Four P	Ⓢ 24W	1,555	
Unison Simply Four T	Ⓢ 11W	1,595	
Woodside ISA230 Line	Ⓢ 30W	1,099	
Woodside ISA230 Disc	Ⓢ 30W	1,249	

Over £2000

Aldyton Opera	Ⓢ 50W	2,595	
Audio Note Meishu Line	Ⓢ 9W	2,750	
Audio Note Ongaku	Ⓢ 26W	56,000	
Audio Research CA50	Ⓢ 3,990		
Cary CAD-300SEI	Ⓢ 11W	3,495	
Conrad-Johnson CAV-50	Ⓢ 50W	2,495	
EAR 859	Ⓢ 13W	2,499	
El ctrocompaniet ECI-1	Ⓢ 100W	2,195	
Gamma Rhythm	Ⓢ 18W	2,499	
Gamma Rhythm Ref	Ⓢ 20W	3,499	
Gamma Moment 845	Ⓢ 40W	19,999	
Jadis DA30	Ⓢ 30W	3,490	
Jadis DA60	Ⓢ 60W	5,750	
Krell KAV300i	Ⓢ 150W	2,550	
Meracur Onesta	Ⓢ 75W	2,595	
Pioneer A-09	Ⓢ 45W	4,000	
Tube Tech Unisig Sig. Int.	Ⓢ 30W	2,300	
Tube Tech Synergy PPS	Ⓢ 150W	6,900	
Unison Performance One	Ⓢ 25W	4,500	
Unison Absolute 845	Ⓢ 40W	11,995	

PREAMPS

KEY
 Ⓢ - (etc) number of line-level inputs.
 Ph - phono input fitted as standard
 (may be an option on some other models).

Up to £500

AMC CVT 1030A	Ⓢ Ph	400	
Art Audio Minuet	Ⓢ Ph	499	
Audio Analogue Bellini	Ⓢ Ph	475	
AudiInnov P1	Ⓢ Ph	369	
AudiInnov L1	Ⓢ	369	
Audio Note The M	Ⓢ	350	
Beam-Echo PP-21	Ⓢ Ph	499	
Bryston BP1	Ⓢ Ph	438	
Carver CT-24	Ⓢ Ph	499	
CR Dev Themis	Ⓢ Ph	349	
Creek P43	Ⓢ	399	
Creek P52	Ⓢ	499	
Crimson CS610C	Ⓢ Ph	450	
EAR 834P	Ⓢ Ph	349	
EAR 834L	Ⓢ Ph	449	
Electrocompaniet ECP-1	Ⓢ Ph	495	
Fase Evoluzione Phondrive 1.0	Ⓢ Ph	445	
Henley HMC50	Ⓢ	200	
Henley HMC100	Ⓢ	450	
Hi Q Sound LCP2	Ⓢ	149	
LFD Mistral Linestage	Ⓢ	449	
LFD LSO Linestage	Ⓢ	499	
Lumley PP70	Ⓢ	345	
Lumley PP1	Ⓢ	345	
Magnum MP120	Ⓢ	330	
Magnum MP660	Ⓢ	500	
Magnum MP330	Ⓢ	500	
Moth 30 Passive	Ⓢ	149	
Moth 30 RIAA	Ⓢ Ph	249	
Moth 30 Active	Ⓢ	349	
Musical Fidelity X10-D	Ⓢ	120	
Musical Fidelity X-LP	Ⓢ Ph	130	
Musical Fidelity X-PRE	Ⓢ	200	
Musical Fidelity E20	Ⓢ Ph	400	
Musical Fidelity F2	Ⓢ Ph	500	
NAD 114	Ⓢ Ph	270	
NAD 116	Ⓢ Ph	430	
Naim Prefix	Ⓢ	350	
Naim NAC92	Ⓢ	470	
Rega EOS	Ⓢ Ph	398	
Roksan Artaxerxes 10	Ⓢ Ph	395	
Rosa RV-23	Ⓢ Ph	450	
Rotel RC970BX MkII	Ⓢ	175	
Talk Electronics Hurricane 1	Ⓢ	500	
Technics SU-C1000 Mk2	Ⓢ Ph	300	
Trilogy 905	Ⓢ	375	
Trilogy 904	Ⓢ Ph	375	
Trilogy 900	Ⓢ Ph	499	
Unison Simply Phono	Ⓢ Ph	500	
ytion Chorus	Ⓢ	1,9	

Conrad-Johnson PF-2	Ⓞ	Ph	1,990	Unison Mystery One	Ⓞ	1,750	NAD 912	30W	200	Naim NAP140	45W	750
Copland CSA303	Ⓞ	Ph	1,199	Unison Phono One	Ⓞ	1,995	NAD 214	80W	370	Naim NAP180	60W	1,060
Copland CTA301 MkII	Ⓞ	Ph	1,399	Van Den Hul Pre-amp	Ⓞ	1,700	NAD 216THX	125W	470	Naim NAP135	75W	1,655
CR Dev Carmenta	Ⓞ	Ph	659	Wilson Benesch Stage One	Ⓞ	995	Naim NAP90/3	30W	450	Naim NAP250	70W	1,655
CR Dev Argento	Ⓞ	Ph	699	Woodside SC27 Line	Ⓞ	949	Rotel RB9708X MkII	60W	225	Papworth TVA50	50W	1,425
Crede CMP004	Ⓞ	Ph	1,246	Woodside SC26 Line	Ⓞ	1,557	Rotel RB9808X	120W	450	Prime Design P-150	150W	650
Crede CMP005	Ⓞ	Ph	1,876	XTC PRE-1	Ⓞ	1,250	Shearpe 3.5	35W	469	Quad 77 Power	85W	800
Densen DM-20	Ⓞ	Ph	1,200	Yamaha CX-2	Ⓞ	650	Talk Electronics Tornado 1	50W	450	Quad 707	140W	600
DNM 3 Start	Ⓞ	Ph	1,000	Over £2000			Technics SE-A1000 Mk2	70W	350	Rega EXS	70W	598
DNM 3A Start	Ⓞ	Ph	1,650	Adyton Temper	Ⓞ	2,495	£501 to £2000			Rega Exon	125W	1,196
DPA Enlightenment pre	Ⓞ	Ph	795	Adyton Modus	Ⓞ	2,695	Alchemist Kraken pwr	60W	529	Roksan ROK-S1.5	70W	1,495
DPA DSP500S	Ⓞ	Ph	2,000	Alchemist The Alchemist pre	Ⓞ	4,995	Alchemist Forseti Pwr	150W	1,309	Rose RP-190 (Dual Mode)	75W	650
Dynavector L200	Ⓞ	Ph	1,195	ATC SCA2	Ⓞ	2,499	AMC CVT 2100A	80W	600	Rotel RB9908X	200W	525
Dynavector P100	Ⓞ	Ph	1,495	Audio Note M3Line	Ⓞ	2,650	Art Audio Quintet	15W	1,393	Shearpe Phase 3	50W	619
Dynavector L100	Ⓞ	Ph	1,995	Audio Research LS15	Ⓞ	3,399	Art Audio Quintet SE MB	-W	1,500	Shearpe Phase 3 Reference	50W	729
Earmax Earmax Pre	Ⓞ	Ph	1,895	Audio Research LS22	Ⓞ	4,391	Art Audio Concerto	50W	1,669	Shearpe Phase 5 Mono	100W	1,500
ECA Vista S	Ⓞ	Ph	760	Audio Research LS5 MkIII	Ⓞ	6,435	Audio Analogue Donizetti	60W	575	Sonic Frontiers Anthem Amp 1	40W	1,195
ECA Vista HD	Ⓞ	Ph	880	Audio Research REF 1	Ⓞ	9,900	Audiolnno First Audio	7.5W	1,749	Sonographe SA250	125W	1,195
ECA Prisma	Ⓞ	Ph	880	Boulder L3AE	Ⓞ	2,100	Audiolnno Series 1000	50W	1,799	Sonographe SA400	220W	1,695
Electrocompaniet EC-4.5	Ⓞ	Ph	1,195	Boulder L5AE	Ⓞ	3,400	Audio Note The P	40W	550	Sumo Polaris III	164W	950
Electrocompaniet EC-4R	Ⓞ	Ph	1,495	Boulder L5M	Ⓞ	3,800	Audio Note P0	9W	599	Sumo Model Five	60W	1,975
Electrocompaniet EC-4.6	Ⓞ	Ph	1,750	Boulder 2010	Ⓞ	19,995	Audio Note P1	12W	750	Sumo Andromeda III	240W	1,975
Exposure XIX	Ⓞ	Ph	800	Cary SLP-94L	Ⓞ	2,095	Audio Note P1SE	12W	999	T+A A1200	110W	845
Exposure XVII	Ⓞ	Ph	850	Cary SLP-98L	Ⓞ	2,295	Audio Note P2	20W	1,000	T+A A1500	140W	1,495
Fase Evoluzione Controlsorce 2.0	Ⓞ	Ph	625	Chord CPA 2200	Ⓞ	2,355	Audio Note P2SE	18W	1,499	Talk Electronics Tornado 2	65W	600
Fase Evoluzione Controlsorce 1.0	Ⓞ	Ph	1,395	Chord CPA 2800	Ⓞ	3,246	Audio Note Conqueror	8W	1,599	Talk Electronics Tornado 3	100W	750
Golden Tube Audio SEP-1	Ⓞ	Ph	990	Chord CPA 3200	Ⓞ	3,320	Audiolab 8000SX	60W	559	Talk Electronics Tornado 4	110W	1,100
Graaf WFB Two	Ⓞ	Ph	1,195	Chord CPA 4000	Ⓞ	6,210	Audiolab 8000PX	100W	850	Technics SE-A2000	100W	1,100
Graaf WFB One	Ⓞ	Ph	1,895	Conrad-Johnson PF-R	Ⓞ	2,490	Audiolab 8000MX	125W	1,800	Thorens TTA-2000	30W	599
Henley HMC200	Ⓞ	Ph	750	Conrad-Johnson PV-12A	Ⓞ	2,590	Aura PA-100	100W	700	Trilogy 948	50W	1,895
Heybrook Signature II Pre	Ⓞ	Ph	555	Conrad-Johnson Premier 15	Ⓞ	3,995	Aura PA-200	110W	1,200	Tube Tech Synrx	45W	1,150
Hi Q Sound MCB2	Ⓞ	Ph	545	Conrad-Johnson Premier 14	Ⓞ	4,495	Aura PA-200 C	100W	1,250	Tube Tech Unisis Sig. Pwr	30W	1,900
Hi Q Sound MCL2	Ⓞ	Ph	645	Conrad-Johnson Art	Ⓞ	14,995	AVI S2000MM	150W	1,399	Woodside SA240	40W	1,199
Jadis DPL2	Ⓞ	Ph	1,790	CAT SL1 Sig. Mk2	Ⓞ	6,500	Bryston 2B-LP	75W	750	Woodside MA100	100W	1,733
LFD MCL Phonostage	Ⓞ	Ph	949	CR Dev Kastor	Ⓞ	2,995	Bryston 3B-ST PRO	150W	1,160	Woodside STA50	50W	1,880
LFD LS1 Linstage	Ⓞ	Ph	999	Crede LPR 001	Ⓞ	2,815	Bryston 3B-ST	150W	1,160	XTC POW-2	150W	1,450
LFD MC2 Phonostage	Ⓞ	Ph	1,499	DNM 3C Primus	Ⓞ	2,550	Bryston THX3B	150W	1,262	Yamaha MX-2	150W	750
LFD LS2 Linstage	Ⓞ	Ph	1,599	DNM 3C Twin	Ⓞ	3,800	Bryston 7B-ST PRO	500W	1,545	Over £2000		
LFD LSB Linstage	Ⓞ	Ph	1,999	DNM 3C Six	Ⓞ	5,050	Bryston 4B-ST PRO	-W	1,756	Adyton Cordis 1.6	120W	3,495
Linn Wakonda	Ⓞ	Ph	750	EAR 802MC	Ⓞ	2,599	Bryston 4B-ST	300W	1,756	Adyton Cordis 3B	280W	12,995
Linn Linto	Ⓞ	Ph	850	EAR G88	Ⓞ	9,999	Bryston 7B-ST	500W	1,815	Alchemist The Alchemist pwr	220W	3,995
Linn Kairn	Ⓞ	Ph	1,400	EAR P52	Ⓞ	15,999	Bryston THX4B	300W	1,850	Alchemist The Alchemist mono	55W	8,995
Lumley LV1.5	Ⓞ	Ph	895	Gamma Era Ref	Ⓞ	7,999	Bryston THX7B	500W	1,886	Art Audio Tempo	30W	2,499
Lumley LV1	Ⓞ	Ph	1,150	Gamma Era Sig	Ⓞ	19,999	Carver TFM-15CB	100W	599	Art Audio Quintet SE	-W	2,500
Lumley PV1.5	Ⓞ	Ph	1,700	Graaf GM13.5B	Ⓞ	3,950	Carver A-500X	250W	949	Art Audio Maestro	100W	3,524
Lumley PV1	Ⓞ	Ph	1,700	Jadis DP60L	Ⓞ	2,800	Carver A-760X	380W	1,299	ATC SPA2-150	200W	2,500
Marantz AC-500	Ⓞ	Ph	700	Jadis DPL	Ⓞ	3,190	Cary SLA-70 II	30W	1,495	Audiolnno Ser 1000SE	50W	2,499
Marantz EC-500	Ⓞ	Ph	900	Jadis DPMC	Ⓞ	3,190	Chord SPM 400	100W	1,325	Audiolnno Second Audio	15W	3,299
Matisse Atom	Ⓞ	Ph	1,000	Jadis JPL	Ⓞ	4,720	Chord SPM 600	130W	1,720	Audio Note P3	9W	2,150
Meracur Ingredi	Ⓞ	Ph	925	Jadis JPP200	Ⓞ	4,998	Conrad-Johnson MV-55	50W	1,995	Audio Note Quest	9W	2,750
Meridian 501	Ⓞ	Ph	695	Jadis JP30MC	Ⓞ	5,978	Copland CTA501	30W	1,750	Audio Note Yubi	18W	3,850
Meridian 562	Ⓞ	Ph	765	Jadis JPS2	Ⓞ	7,900	CR Dev Amphion	12W	1,949	Audio Note Conquest	18W	4,450
Meridian 562V	Ⓞ	Ph	995	Jadis JP80MC	Ⓞ	11,989	Crede PMP 804	80W	1,876	Audio Note Tomei	30W	8,500
Meridian 502	Ⓞ	Ph	1,295	Krell KRC3	Ⓞ	3,250	Creek AS2SE	80W	599	Audio Note Neiro	7W	11,360
Michell Argo	Ⓞ	Ph	730	Krell KRC-HR	Ⓞ	6,949	Crimson CS630C	100W	800	Audio Note Ankoru	60W	14,500
Michi RHC-10	Ⓞ	Ph	795	LFD Disc Preamp	Ⓞ	4,499	Densen DM-30	100W	1,200	Audio Research D130	130W	2,299
Michi RHQ-10	Ⓞ	Ph	1,150	Marantz Model 7	Ⓞ	3,500	DNM PA Start	45W	1,000	Audio Research Y160	35W	2,395
Michi RHA-10	Ⓞ	Ph	1,150	Mark Levinson 25S	Ⓞ	2,950	DNM PA1 Start	45W	1,650	Audio Research D300	300W	4,678
Micromega Tempo P	Ⓞ	Ph	1,250	Mark Levinson 380	Ⓞ	3,995	DPA Enlightenment pwr	100W	995	Audio Research VT100	100W	4,995
Mission Cyrus Pre	Ⓞ	Ph	648	Mark Levinson 380S	Ⓞ	6,495	Earmax Earmax Power	25W	1,895	Audio Research D400 MkII	400W	6,850
Monrio ADN	Ⓞ	Ph	625	Matisse Fantasy	Ⓞ	2,500	ECA Lectern S	50W	880	Audio Research VT130 SE	130W	8,500
Monrio Pluri-L	Ⓞ	Ph	960	Matisse Reference	Ⓞ	3,500	ECA Lectern HD	50W	1,480	Audio Research VT150 SE	150W	17,000
Muse Model 3	Ⓞ	Ph	1,990	Meracur Pretare	Ⓞ	2,195	Electrocompaniet AW60B	60W	1,095	Audio Synthesis Desire Decade	200W	2,495
Musical Fidelity F25	Ⓞ	Ph	1,500	Naim NAC82	Ⓞ	2,160	Exposure XVII Super	70W	850	Beam-Echo DL7-35	30W	3,525
NAD 118	Ⓞ	Ph	1,000	Naim NAC52	Ⓞ	3,350	Fase Evoluzione Powersource 2.0	65W	860	Border Patrol 300B SE	10W	3,495
Naim NAC92R	Ⓞ	Ph	630	Roksan ROK-L1.5	Ⓞ	2,250	Fase Evoluzione Powersource 1.0	100W	1,670	Boulder 102AE	100W	2,800
Naim NAC72	Ⓞ	Ph	725	Sonic Frontiers Line 2	Ⓞ	2,995	Golden Tube Audio SE-40	40W	1,100	Boulder 102M	100W	3,100
Naim NAC102	Ⓞ	Ph	1,050	Sonic Frontiers Line 3	Ⓞ	4,995	Golden Tube Audio SE-300B MkII	8W	1,490	Boulder 500AE	150W	4,995
Quad 77 Pre	Ⓞ	Ph	850	T+A Pre DA3000	Ⓞ	2,800	Golden Tube Audio SE-100	100W	1,995	Boulder 500M	150W	5,500
Rega Hal	Ⓞ	Ph	990	Tesseract TAP-A	Ⓞ	5,300	Graaf Venticinque P	25W	1,250	Boulder 2060	600W	19,000
Roksan ROK-L2.5	Ⓞ	Ph	1,250	Trilogy 918	Ⓞ	2,775	Heybrook Signature II Pwr	120W	1,045	Boulder 2050	999W	35,000
Rose RV-23S	Ⓞ	Ph	525	Unison Dream	Ⓞ	11,995	Hi Q Sound MCM	70W	715	Bryston THX8B	100W	2,385
Shearpe Phase 6 Pre	Ⓞ	Ph	899	Woodside SC26 Line & Phono	Ⓞ	2,233	Jadis DA5	40W	1,997	Cary CAD-572SE	20W	2,495
Shearpe Phase 1 Pre Ref	Ⓞ	Ph	1,399	POWER AMPS			Lexicon 212	120W	1,850	Cary CAD-300SE	12W	3,795
Sonic Frontiers Anthem Pre 1P	Ⓞ	Ph	895	KEY			LFD PA1 Powerstage	60W	999	Cary CAD-805	50W	8,495
Sonic Frontiers Anthem Pre 1	Ⓞ	Ph	1,495	'20W' - output power per channel			LFD PA2 Powerstage	75W	1,599	Chord SPM 800	160W	2,265
Sonic Frontiers Phono 1	Ⓞ	Ph	1,995	into nominal load of 8 Ohms.			LFD PA2M Powerstage	90W	1,999	Chord SPM 1000B	200W	2,785
Sonic Frontiers Line 1	Ⓞ	Ph	1,995	Up to £500			Linn LK100	50W	650	Chord SPM 1200B	250W	3,525
Sonographe SC26	Ⓞ	Ph	995	AMC CVT 2030A	Ⓞ	30W	Linn LK240	100W	750	Chord SPM 1200C	315W	3,915
Sumo Athena II Line	Ⓞ	Ph	767	Arcam Alpha 8P	Ⓞ	50W	Linn AV5105	100W	1,200	Chord SPM 1600	200W	4,718
Sumo Athena IIB/II LS	Ⓞ	Ph	987	Arcam Alpha 9P	Ⓞ	70W	Lynwood Ruby	120W	985	Chord SPM 1400B mono	380W	7,830
Sumo Athena III	Ⓞ	Ph	987	Arcam Delta 290P	Ⓞ	75W	Magnum MF330	150W	685	Chord SPM 2000	415W	13,544
Sumo Artemis uP	Ⓞ	Ph	1,595	Carver TFM-6CB	Ⓞ	65W	Magnum MF660	125W	825	Conrad-Johnson MF-2300A	250W	2,990
T+A P1200R	Ⓞ	Ph	890	Creek A43	Ⓞ	50W	Magnum A500SE	200W	1,485	Conrad-Johnson Premier 11A	70W	3,500
Talk Electronics Hurricane 2	Ⓞ	Ph	650	Creek A52	Ⓞ	70W	Magnum A50SE	200W	1,595	Conrad-Johnson Premier 12	140W	6,900
Talk Electronics Hurricane 3	Ⓞ	Ph	900	Crimson CS620C	Ⓞ	50W	Meracur Ciere	60W	1,095	Conrad-Johnson Premier 8XS	150W	17,000
Talk Electronics Hurricane 4	Ⓞ	Ph	1,550	Earmax Earmax Headphone	Ⓞ	0.1W	Meridian 555	60W	750	Conrad-Johnson Premier 8A	275W	17,000
Talk Electronics Hurricane 5	Ⓞ	Ph	1,900	LFD Mistral Power	Ⓞ	60W	Meridian 556	100W	895	CAT JLL	200W	15,500
Technics SU-C2000	Ⓞ	Ph	700	LFD PA0 Powerstage								

EAR 549	200W	6,499
Electrocompaniet AW100DMB	100W	2,095
Electrocompaniet AW120DMB	120W	2,695
Electrocompaniet AW250DMB	250W	3,995
Electrocompaniet AW180MB	180W	4,595
Exposure IV	80W	2,199
Exposure VII	125W	4,000
Gamma Aeon	20W	4,999
Gamma Space Ref	18W	7,999
Gamma Aeon Ref	50W	39,999
Graaf 5050	50W	2,150
Graaf GM20	60W	2,750
Graaf GM100	100W	4,490
Graaf GM200	200W	8,000
Jadis DA8	80W	3,333
Jadis DA7	100W	5,290
Jadis JA30	30W	5,980
Jadis JA300B	10W	9,000
Jadis JA80	60W	9,912
Jadis JA200	160W	15,518
Jadis JA500	400W	21,500
Krell KAV500/2	100W	3,485
Krell FPB200	200W	6,490
Krell FPB300	300W	9,500
Krell FPB600	600W	12,900
Krell KAS2	200W	20,000
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Lumley M125	120W	3,750
Lumley M250	250W	7,500
Magnum Class A mono	180W	2,450
Magnum A200SE	275W	3,750
Marantz Model 8	35W	3,500
Marantz Model 9	70W	4,000
Mark Levinson 331	100W	4,495
Mark Levinson 332	200W	6,495
Mark Levinson 333	300W	8,495
Mark Levinson 33H	150W	19,395
Matisse Ref Monoblocks	180W	8,000
Meracur Tentare	75W	2,245
Meracur Cantare	-W	8,995
Muse Model 160 Ser. II	160W	2,290
Muse Model 150	125W	2,690
Muse Model 175 Ser. II	175W	3,490
Muse Model 300 Ser. II	300W	3,990
Musical Fidelity F16	200W	2,500
Musical Fidelity F19	300W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Roksan ROK-M1.5	160W	2,250
Shearpe Phase 1 Pwr Ref	100W	2,199
Sonic Frontiers Power 1	55W	2,495
Sonic Frontiers Power 2	110W	4,995
Sonic Frontiers Power 3	220W	9,995
Sumo Model Ten/M	240W	4,200
Sunfire Sunfire	300W	2,170
T+A A3000	190W	3,000
Talk Electronics Tornado 5	200W	2,100
Tesserac TAMP-60	60W	7,350
Trilogy 958	100W	3,395
Tube Tech Genesis Sig.	100W	4,700
Tube Tech Synergy DMA	150W	6,400
Unison Smart 845	24W	3,250
Unison Palladio	32W	11,995
Van Den Hul Power amp	65W	2,500
XTC POW-1	200W	2,250



CABLES
ANALOGUE INTERCONNECTS

KEY
 ☉ - stranded construction.
 ● - solid-core construction.

Prices of interconnects are for a one-metre terminated pair.

Apertura Model B	260.00
Apertura Model A	469.00
Art Yam Church 5000	515.00
Audio Note AN-A	18.00
Audio Note AN-C	35.00
Audio Note AN-S	99.00
Audio Note AN-V	179.00
Audio Note AN-Vx	450.00
Audioquest Jade	30.00

Audioquest Turquoise 2	40.00
Audioquest Topaz 2	60.00
Audioquest Ruby 2	80.00
Audioquest Quartz	125.00
Audioquest Opal	200.00
Audioquest Emerald	260.00
Audioquest Lapis	399.00
Audioquest Diamond	549.00
Cable Talk Improved 2/CD	26.00
Cable Talk Advanced 2	35.00
Cable Talk Monitor 2.1	50.00
Cable Talk Improved 2/Tape	50.00
Cable Talk Studio 2	65.00
Cable Talk Professional 2	85.00
Cable Talk Broadcast 2	100.00
Cable Talk Reference 2	150.00
Cable Talk Signature 2 Gold	300.00
Cambridge Atlantic	10.00
Cambridge Arctic	20.00
Cambridge Pacific	30.00
Cambridge Studio Reference	40.00
Cardas Audio 300B-Microtwin	115.00
Cardas Audio Quadlink-Five	200.00
Cardas Audio Cardas Cross	360.00
Cardas Audio Hexlink-Five C	530.00
Cardas Audio Hexlink Golden-5 C	600.00
Cardas Audio Golden Cross	700.00
Connections UK Ultra	28.00
Connections UK Midas	39.00
Connections UK HD	46.00
DNM-Reson TCCT75	34.00
DPA Slink	41.00
DPA White Slink	75.00
DPA Black Slink	245.00
Expressive Tech IC-1	700.00
Gamma Wow Balance	799.00
Goertz Interconnect	148.00
GT Audio Intercon	130.00
Henley HSP10	20.00
Henley HSP50	35.00
Henley HSP100	65.00
Henley HSP200	95.00
Heybrook Black Flash	49.95
Insert Audio Focus 1.2	21.50
Insert Audio IC100 Mk II	46.95
Insert Audio Status 3.4	160.00
Ixos 104	20.00
Ixos 1003	30.00
Ixos 1002	40.00
Ixos 103	45.00
Ixos 102	60.00
Ixos 101	100.00
Ixos 100.X03	150.00
Kimber PBJ	68.00
Kimber KC1	96.00
Kimber Hero	110.00
Kimber Silver Streak	180.00
Kimber KCAG	390.00
Kimber KCTG	720.00
Kronos Konnekt 3	49.00
Kronos Konnekt 2	99.00
Kronos Konnekt 1	199.00
LAT International IC-50	37.00
LAT International IC-80	60.00
LAT International IC-100-D	89.00
LAT International IC-200 Mk II	151.00
Lieder Chanson	340.00
Lieder Lek	420.00
Lieder Het Lied	420.00
Lieder Song	580.00
Lieder Maas	620.00
Lieder Rijn	1,000.00
Lieder Waal	1,400.00
Lumley Silver 12/2	115.00
Lumley Silver 14/4	175.00
Moth Leyline Black	100.00
Moth Leyline Grey	200.00
Nordost Magic	35.00
Nordost Black Knight	60.00
Nordost Blue Angel	98.00
Nordost Blue Heaven	145.00
Nordost Red Dawn	285.00
Nordost SPM	825.00
Ortofon 7N interconnect	250.00
Precious Metals Silver Signal 35	40.00
Precious Metals Silver Signal 50	50.00
Precious Metals Silver Signal 52	70.00
Precious Metals Silver Signal 53	90.00
Precious Metals Silver Signal 100	100.00
Precious Metals Silver Signal 102	130.00
Precious Metals Silver Signal 103	160.00
Precious Metals Silver Signal 104	190.00
Precious Metals Silver Signal 200	220.00
Precious Metals Silver Signal 202	290.00
Precious Metals Silver Signal 203	360.00
Precious Metals Silver Signal 204	430.00
QED P2 Gold	20.00
QED Incon P2 Screened	23.00
QED Incon P1 Screened	26.00
QED Qnekt 2	30.00
QED Qnekt 4	60.00
Roksan ROK-Intercon	75.00
Siltech MC2-12	308.00

Siltech MC4-24S	400.00
Siltech FTM-3S	730.00
Silver Sounds SS2	99.00
Silver Sounds SS1	199.00
Silver Tone Ex-Static	35.00
Silver Tone Sci-Fi	95.00
SME S2LB-4	46.18
SME S3LB-4	52.06
SME 4900A	76.83
SME 5900A	102.57
Sonic Link Bonus	15.00
Sonic Link Red	25.00
Sonic Link Silver pink	35.00
Sonic Link Black	49.00
Sonic Link White	65.00
Sonic Link Brown	70.00
Sonic Link Violet	85.00
Sonic Link Maroon	125.00
Sonic Link Blue Nickel	150.00
Sonic Link Vermillion	195.00
Sonic Link Red earth	300.00
Sonic Link Black earth	450.00
Sonic Link Blue earth	695.00
Sonic Link Black Rhodium	995.00
ChordCo Chrysalis	33.00
ChordCo Cobra	50.00
ChordCo Siren	65.00
ChordCo Chameleon	85.00
ChordCo Solid	99.00
Transparent Cable Musichord Int	48.00
Transparent Cable The Link	92.00
Transparent Cable Music Link	119.00
Trichord Pulsewire 75	169.00
Vampire Wire CC	24.00
Vampire Wire CCC/II	58.00
Vampire Wire SCC/II	98.00
Vampire Wire SC/IV	144.00
Vampire Wire Al/2	259.00
Vampire Wire SL	412.00
Van Den Hul Storm	25.00
Van Den Hul Source HB	50.00
Van Den Hul D102 IIHNB	70.00
Van Den Hul Thunderline HB	130.00
Van Den Hul First	210.00
Van Den Hul Second	240.00
Van Den Hul MC Gold	400.00
Van Den Hul MC Silver IT	1,240.00
Van Den Hul MC Silver II Bal	1,560.00
XLO Type 150	50.00
XLO Type 0.1	180.00



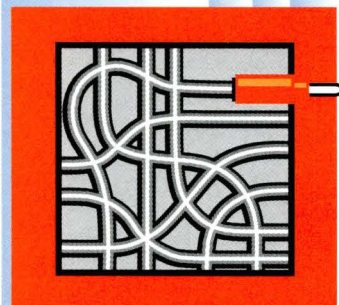
DIGITAL INTERCONNECTS

KEY
 ☉ - stranded construction.
 ● - solid-core construction.

Prices of interconnects are for a one-metre terminated pair.

Apertura Model B	139.00
Apertura Model A	255.00
Apogee Digital Wyde Eye	20.00
Apogee Digital Wyde Eye Bal.	30.00
Art Yam Church 5000	275.00
Audioquest Digital/video 1	30.00
Audioquest Digital/video 2	60.00
Audioquest Optilink X	90.00
Audioquest Digital PRO	100.00
Audioquest Optilink Pro	149.00
Audioquest Optilink Z	179.00
Cable Talk Digital 2	78.00
Cardas Audio Lighting	190.00
DNM-Reson DIG100	26.00
DPA Opti-link	20.00
DPA Digi-link	28.00
Insert Audio Dataline 500	24.95
Insert Audio Dataline 700	39.95
Insert Audio Image 5.1	44.95
Ixos 105	25.00
Ixos 106	30.00
Kimber Opti-link	40.00
Kimber Illuminati DV-30	55.00
Kimber Illuminati D-60	215.00
Kimber Illuminati DX-50	350.00
Kimber Illuminati Orchid	750.00
LAT International DI-20-D	79.00

Moth Leyline Datalink	140.00
Nordost Moonglo	155.00
Precious Metals Silver Dig 35	20.00
Precious Metals Silver Dig 100	50.00
Precious Metals Silver Dig 200	110.00
Precious Metals Silver Dig 202	145.00
QED Digilink	20.00
QED Optilink	25.00
Roksan ROK-Intercon	45.00
Siltech HF-6	145.00
Sonic Link Green	60.00
ChordCo Codac	36.00
ChordCo Prodac	50.00
Transparent Cable PDL	199.00
Trichord Pulsewire 75D	75.00
Trichord Pulsewire 110D	145.00
Vampire Wire DV1	150.00
Van Den Hul Source HB	30.00
Van Den Hul Videolink	60.00
Van Den Hul AES-EBU 110	65.00
Van Den Hul First	125.00
Van Den Hul Second	130.00



SPEAKER CABLES

KEY
 ☉ - stranded construction.
 ● - solid-core construction.
 Price per mono metre unterminated.

Acoustic Energy AESC-C3	11.95
Apertura Silver	82.50
Art Yam Church M2000	470.00
Art Yam Church 5000	795.00
Audio Note AN-D	4.50
Audio Note AN-B	16.50
Audio Note AN-L	29.50
Audio Note AN-SP	150.00
Audio Note AN-SPx	450.00
Audioquest Type 2	3.50
Audioquest F-18	3.60
Audioquest Type 6+	9.00
Audioquest Indigo +	15.00
Audioquest Crystal +	25.00
Audioquest Forest	75.00
Audioquest Argent +	125.00
Audioquest Clear 3	200.00
Bandridge LC7409	4.00
Bandridge LC4110	28.00
Bandridge LC3410	40.00
Bandridge LC3210	75.00
Bandridge LC3219	75.00
Bandridge LC3220	90.00
Bandridge LC3310	95.00
Bandridge LC3240	125.00
Cable Talk The Flat One	1.50
Cable Talk Theatre 2	2.00
Cable Talk Talk 3.1	2.25
Cable Talk Overture 2.1	3.25
Cable Talk Talk 4.1	4.25
Cable Talk Talk 3.1 Biwire	4.50
Cable Talk Concert 2.1	7.00
Cable Talk Talk 4.1 Biwire	8.50
Cable Talk Symphony 3	12.50
Cable Talk Concert 2.1 Biwire	14.00
Cardas Audio 300B-Microtwin SC	35.00
Cardas Audio Quadlink-Five SC	59.00
Cardas Audio Cross SC	99.00
Cardas Audio Hexlink-Five SC	109.00
Cardas Audio Hexlink Golden5 SC	175.00
Cardas Audio Golden Cross SC	789.00
DNM-Reson LSC	6.95
DNM-Reson LSCB	11.95
DPA Black Sixteen	100.00
Electrocompaniet EC-K2	30.00
Gale XL189	1.00
Gale XL315	2.00
Gale XL160-2	2.50
Gamma Wonder Line	99.00
Goertz M1	16.00
Goertz M2	32.00
Goertz Big Boy	64.00
GT Audio Speaker	50.00
Ixos 607	2.00
Ixos 6004	3.00
Ixos 6003	3.00

Ixos 605	3.00
Kimber 4PR	3.90
Kimber 4VS	9.00
Kimber 4TC	19.60
Kimber 8TC	32.70
Kimber 4AG	394.00
Kimber 8AG	656.00
LAT International SS 800	21.00
LAT International BIWIRE	27.00
LAT International SS 1000	42.50
Lieder Pad	460.00
Lieder Bel Canto	500.00
Lieder Spoor	660.00
Lieder Straat	1,080.00
Lieder Weg	1,400.00
Linn K20	4.00
Linn K400	10.00
Linn K600	15.00
Lumley Silver 12/2	35.00
Lumley Silver 14/4	40.00
Mission Duet	1.90
Mission Quartet bi-wire	3.90
Naim NACA 5	5.50
Nordost Octava	3.00
Nordost 4-Flat	12.00
Nordost Blue Heaven	55.00
Nordost Red Dawn	110.00
Nordost SPM	325.00
Ortofon SPK100	3.00
Ortofon SPK200	5.00
Ortofon SPK300	8.00
Precious Metals Silver L'r 32	7.50
Precious Metals Silver L'r 102	10.00
Precious Metals Silver L'r 34	15.00
Precious Metals Silver L'r 104	20.00
Precious Metals Silver L'r 106	30.00
Precious Metals Silver L'r 108	40.00
Puresonic OFC 7892	1.20
Puresonic OFC 7844	1.65
Puresonic OFC 7845	1.95
Puresonic OFC 7891	2.85
Puresonic OFC 7816	3.75
Puresonic OFC 7832	3.75
Puresonic OFC 7812	3.75
Puresonic OFC 7825	6.95
Puresonic PS0CC 7801	9.50
Puresonic PS0CC 7802	18.00
Puresonic PS0CC 7803	27.00
QED Qudos Micro	1.25
QED Qudos Silver	3.95
QED Qudos Bi-Wire	4.50
QED Profile 8	6.50
QED Profile 4x4	9.00
QED Profile Silver 12	15.00
Rega REGA	2.00
Roksan ROK-Speaker	6.00
Siltech LS2-45	109.00
Siltech FT-12 MkI	240.00
Siltech LS4-120	549.00
Silver Sounds 12 Gauge	15.00
Silver Sounds 10 Gauge	35.00
Silver Sounds 8 Gauge	75.00
Silver Tone Silver-Sonic	10.00
Silver Tone Silver-Sonic HC	15.00
Silver Tone Silver-Voice	55.00
Silver Tone Silver-Voice Ultra	85.00
Sonic Link AST50	1.95
Sonic Link AST75	3.00
Sonic Link AST200	5.95
Sonic Link AST200x2	10.00
Sonic Link S300	18.00
Sonic Link S130x2	20.00
Sonic Link S300x2	35.00
Sonic Link S900	50.00
Sonic Link S600x2	70.00
Sonic Link RE3.1	90.00
Sonic Link RE3.4	330.00
Tech + Link SPC 79	1.20
ChordCo Myth	6.00
ChordCo Legend	15.00
Transparent Cable Musichord Spkr	11.00
Transparent Cable The Wave	23.00
Transparent Cable Music Wave Spkr	25.00
Vampire Wire SC-384	11.00
Vampire Wire SC-554	15.00
Vampire Wire ST-I	30.00
Vampire Wire SC-1108	30.00
Vampire Wire ST-II	48.00
Vampire Wire ST-III	73.00
Van Den Hul Skyline HB	3.50
Van Den Hul Snowline	5.00
Van Den Hul Skytrack HB	5.50
Van Den Hul Clearwater	7.00
Van Den Hul Snowtrack	10.00
Van Den Hul CS122 HB	12.00
Van Den Hul Cleartrack	13.00
Van Den Hul D352 HB	20.00
Van Den Hul Teatrack HB	22.00
Van Den Hul SCS12	34.00
Van Den Hul Magnum HB	38.00
Van Den Hul The Wind HB	40.00
Van Den Hul Revolution HB	76.00

Van Den Hul Revelation HB	120.00
Van Den Hul The Third	900.00
XLO Pro 625	4.00
XLO Pro 600	16.60



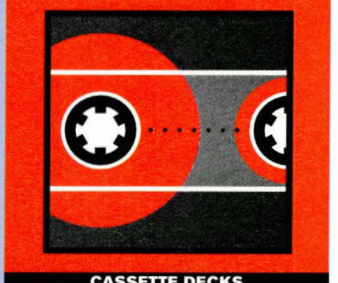
CARTRIDGES

KEY
MM - moving-magnet type.
MC - moving-coil type.
Up to £100

Audio Note I01	MM	99
Audio Technica AT-91	MM	15
Audio Technica AT-95E	MM	20
Audio Technica AT-110E	MM	28
Audio Technica AT450E	MM	70
Audio Technica AT440ML	MM	90
Benz-Micro MC20EII	MC	70
Denon DL110	MC	70
Denon DL160	MC	90
Denon DL103	MC	100
Goldring Elan	MM	19
Goldring Elektra	MM	29
Goldring 1006	MM	59
Goldring 1012GX	MM	79
Goldring 1022GX	MM	99
Grado ZTE +1	MM	27
Grado ZCE +1	MM	37
Grado ZFE +1	MM	48
Grado Signature Black	MM	49
Grado Signature Green	MM	59
Grado Signature Blue	MM	69
Grado ZF1 +	MM	83
Grado Signature Red	MM	98
N'ham Tracer I	MM	99
Ortofon VMS2	MM	14
Ortofon OM 5E	MM	20
Ortofon OM 10	MM	30
Ortofon 510	MM	38
Ortofon OM DJ	MM	50
Ortofon 520	MM	65
Ortofon OM 20	MM	70
Ortofon MC1 Turbo	MC	70
Ortofon Concorde DJ	MM	80
Ortofon OM 30	MM	90
Ortofon MC10 Super	MC	100
Ortofon 530	MM	100
Pickering TE-15	MM	20
Pickering VE-15	MM	25
Pickering T-E	MM	25
Pickering V15-DJ	MM	28
Pickering TL-E	MM	35
Pickering TL-2E	MM	45
Pickering XV15-625E	MM	50
Pickering XV15-150-DJ	MM	50
Pickering TL-2-S	MM	55
Pickering XV15-757S	MM	60
Pickering XV15-625DJ	MM	60
Pickering XV15-1800S	MM	70
Pickering TL3S	MM	80
Pickering XEV-3001E	MM	95
Pickering XLZ-3500	MM	100
Pickering TL-4-S	MM	100
Rega Bias	MM	39
Rega RB78	MM	39
Rega Super Bias	MM	59
Rega Elys	MM	85
Shure M708X	MM	21
Shure M92E	MM	22
Shure SC35C	MM	29
Shure M447X	MM	35
Shure M44GX	MM	35
Stanton 500AL II	MM	34
Stanton 500EL	MM	37
Stanton 680AL/X	MM	56
Stanton 680EL/X	MM	70
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MC	100
Over £100		
Audio Note I02	MM	139
Audio Note Soara	MC	795
Audio Note I01V	MC	1,095
Audio Note I0LTD	MC	4,500
Audio Technica AT-OC9	MC	330

Benz-Micro The Glider	MC	650
Benz-Micro M090	MC	700
Benz-Micro L040	MC	700
Benz-Micro H200	MC	700
Benz-Micro Reference	MC	1,100
Benz-Micro Reference Ruby	MC	1,500
Benz-Micro Ruby Open Air	MC	1,600
Clearaudio Aurum-Alpha	MM	135
Clearaudio Aurum-Beta	MM	195
Clearaudio Aurum-Beta/S	MM	265
Clearaudio Gamma-S	MC	745
Clearaudio Signature	MC	1,595
Clearaudio Accurate	MC	2,500
Clearaudio Insider	MC	4,900
Denon DL304	MC	200
Dynavector 10X4II	MC	189
Dynavector 23RS	MC	375
Dynavector 17D2	MC	450
Dynavector XX-1L	MC	998
Dynavector XX-1	MC	998
Dynavector Te-Kaitora	MC	1,698
Goldring Eroica LX	MM	110
Goldring Eroica	MM	110
Goldring 1042	MM	120
Goldring Elite	MM	220
Goldring Excel VX	MM	495
Grado Prestige Silver	MM	119
Grado Prestige Gold	MM	149
Grado Signature Junior	MM	150
Grado Signature 8MZ	MM	250
Grado Signature MCZ	MM	375
Grado Signature TLZ	MM	650
Grado Signature XTZ	MM	975
Koetsu Red T	MC	1,550
Koetsu Red K Sig	MC	1,998
Koetsu Urushi	MC	2,297
Koetsu Signature	MC	3,218
Koetsu Gold PR	MC	5,498
Linn K9	MM	125
Linn Klyde	MC	500
Linn Arkiv	MC	1,000
London Decca Maroon	MM	259
London Decca Gold	MM	299
London Decca Maroon Dp	MM	339
London Decca Gold Dp	MM	379
London Decca S Gold	MM	399
London Decca S Gold Dp	MM	479
London Decca Jubilee	MM	999
Lyra Lydian	MC	649
Lyra Clavis Da Capo	MC	995
N'ham Tracer II	MM	310
N'ham Tracer III	MM	410
N'ham Tracer IV	MM	660
Ortofon MC3 Turbo	MC	130
Ortofon MC15 Super II	MC	130
Ortofon 540	MM	130
Ortofon MC25E	MC	180
Ortofon MC25FL	MC	250
Ortofon MC10 Supreme	MC	300
Ortofon SPU mono	MC	350
Ortofon MC20 Supreme	MC	425
Ortofon SPU Classic	MC	450
Ortofon MC30 Supreme	MC	525
Ortofon MC2000II	MC	750
Ortofon MC Rohmann	MC	1,000
Ortofon MC Rohmann	MC	1,000
Ortofon MC3000 II	MC	1,100
Ortofon MC5000	MC	1,500
Ortofon MC7500	MC	2,000
Pickering TL-3003	MM	145
Pickering XLZ-4500	MM	150
Pickering TL-4004	MM	175
Pickering XSV-5000U	MM	200
Pickering XLZ-7500	MM	200
Pickering TLZ-7500-S	MM	200
Reson Mica	MM	185
Reson Reza	MM	250
Reson Aciore	MM	299
Reson Etille	MM	455
Reson Lexe	MM	1,300
Roksan Corus Black	MM	130
Roksan Shiraz	MC	970
Shure V15XMR	MM	295
Stanton 890AL/X	MM	118
Sumiko BPS	MC	250
Transfiguration Spirit	MC	1,000
Transfiguration Temper	MC	1,950
Van Den Hul MM-1	MM	250
Van Den Hul MM-2	MM	300
Van Den Hul DDT-II	MC	600
Van Den Hul MC-10	MC	750
Van Den Hul MC-One	MC	900
Van Den Hul MC-One Super	MC	1,050
Van Den Hul MC-Two	MC	1,200
Van Den Hul The Frog Low o/p	MC	1,500
Van Den Hul Grasshopper IIISLA	MC	2,000
Van Den Hul Grasshopper IIIGLN	MC	2,800
Van Den Hul Grasshopper IIIGLA	MC	2,800
Van Den Hul Grasshopper IIICMN	MC	2,800
Van Den Hul Grasshopper IIICHN	MC	2,900
Van Den Hul Grasshopper IIVGLA	MC	3,000
Wilson Benesch Matrix	MC	786

Wilson Benesch Hybrid	MC	1,068
Wilson Benesch Carbon	MC	1,586
Wilson Benesch Analog	MC	1,850



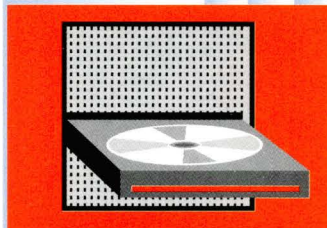
CASSETTE DECKS

KEY
 ← → Autoreverse - no need to remove and turn round the tape.
3-H - 3 heads, i.e. separate record and replay heads.
Up to £200

Aiwa AD-F450	→	120
Aiwa AD-WX727	→	170
Denon DRM-550	→	160
Denon DRW-580	→	200
Denon DRS-640	→	200
Goodmans Delta 801	→	130
JVC TD-X372BK	→	170
JVC TD-R472BK	→	160
Kenwood KX-W4080	→	200
Kenwood KX-3080	→	160
Kenwood KX-W6080	→	200
Kenwood KX-5080S	→	200
Marantz SD-555	→	200
Onkyo K 185	→	200
Pioneer CT-S250	→	150
Pioneer CT-W205R	→	160
Pioneer CT-W505R	→	180
Pioneer CT-S450S	→	200
Pioneer CT-W606DR	→	200
Sony TC-KE200	→	120
Sony TC-WE405	→	150
Sony TC-KE400S	→	180
Sony TC-WE505	→	180
TEAC W-416	→	100
TEAC V-610	→	100
TEAC W-780R	→	170
TEAC R-560	→	180
TEAC R-H500	→	200
Technics RS-BX501	→	170
Technics RS-TR373	→	180
Technics RS-TR474	→	200
Technics RS-AZ6	→	200
Yamaha KX-390	→	150
Yamaha KX-W392	→	180
Yamaha KX-490	→	200
Over £200		
Aiwa AD-F850	→	230
Aiwa AD-S950	→	300
Carver TDR-1550	→	629
Denon DRM-650S	→	230
Denon DRM-740	→	270
Denon DRS-810	→	310
H/K TD420	→	250
H/K TD450	→	350
JVC TD-V662BK	→	270
JVC TD-W718BK	→	300
Marantz SD-57	→	249
NAD 613	→	230
NAD 614	→	270
NAD 616	→	300
Onkyo TA 6210	→	230
Onkyo TARW 211	→	270
Onkyo TARW 311	→	320
Onkyo TA 6310	→	330
Onkyo KR 609	→	350
Onkyo KW 606	→	370
Onkyo TARW 411	→	370
Onkyo K 611	→	460
Pioneer CT-S550S	→	250
Pioneer CT-W806DR	→	300
Pioneer CT-S550S Precision	→	340
Pioneer CT-S830S	→	500
Pioneer CT-95	→	1,000
Sony TC-WE805S	→	250
Sony TC-KAGES	→	550
T+A CC1200R	→	990
TEAC W-850R	→	250
TEAC V-1030	→	250
TEAC W-6000R	→	450
TEAC V-6030S	→	550
TEAC V-8030S	→	650
Technics RS-AZ7	→	270
Technics RS-TR575	→	280

Yamaha KX-580SE 250
 Yamaha KX-W592 280
 Yamaha KX-690 400

3-H



CD PLAYERS

KEY
 ⇨ - multiplay: can be loaded with more than one disc.
 [10] - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.
 Up to £250

Aiwa XC-300	150
AMC CD9	120
AMC CD8A	150
AMC CD6	250
AMC CDM7	250
Cambridge CD4	150
Cambridge CD4SE	200
Cambridge CD6	250
Denon DCD-635	180
Denon DCD-625	200
Denon DCD-715	235
Denon DCD-825	240
Eclipse CD30	50
Eclipse CD50	60
Eclipse CD101a	80
H/K HD710	200
JVC XL-V120BK	110
JVC XL-V130BK	120
JVC XL-V230BK	140
JVC XL-F116BK	180
JVC XL-F216BK	200
JVC XL-Z574BK	250
Kenwood DP-1080	110
Kenwood DP-2080	130
Kenwood DP-R3090	140
Kenwood DP-R4090	160
Kenwood DP-3080	170
Kenwood DP-R6090	200
Kenwood DP-4090	250
Marantz CD-46	150
Marantz CC-38	200
Marantz CD-48	200
Marantz CD-57	230
Marantz CD-67II	250
Marantz CC-47	250
NAD 510	200
NAD 512	250
Philips CD711	120
Philips CD721	130
Philips CD751	150
Philips CDC751	180
Pioneer PD-106	130
Pioneer PD-206	150
Pioneer PD-F606	200
Pioneer PD-M603	200
Pioneer PD-S505	200
Pioneer PD-F706	250
Rotel RCD-930AX	180
Sherwood CD-4030R	180
Sony CDP-M205	110
Sony CDP-XE210	120
Sony CDP-M305	130
Sony CDP-XE310	140
Sony CDP-CE105	150
Sony CDP-XE510	180
Sony CDP-CE315	200
Sony CDP-C325M	200
TEAC CD-P1800	130
TEAC CD-P3450SE	200
TEAC PD-H500	240
TEAC PD-D2200	250
Technics SL-PG380A	100
Technics SL-PG480A	130
Technics SL-PG580A	150
Technics SL-PD687	160
Technics SL-PD887	180
Technics SL-PS670D	200
Technics SL-PS770D	250
Yamaha CDX-390	130
Yamaha CDC-565	170
Yamaha CDX-490	170
Yamaha CDC-665	220
Yamaha CDX-590	230
£251 to £500	
Aiwa DX-C100M	500
Arcam Alpha 7	330

Arcam Alpha MCD	450
AudiInnov Alto	399
Aura CD100	400
Carver SDA-400	299
Carver MV-5	469
Denon DCM-260	300
Denon DCD-1015	350
H/K HD730	300
H/K FL8300	300
JVC XL-Z674BK	300
Kenwood DP-R7080	300
Kenwood DP-9090	300
Kenwood DP-7090	400
Marantz CD-67	270
Marantz CD-67SE	350
Marantz CC-870	400
Marantz CD-631KI	500
Musical Fidelity E60	300
Musical Fidelity A2	500
NAD 513	290
NAD 514	350
NAD 514	370
NAD 517	400
Onkyo DX 7210	260
Onkyo C721	290
Onkyo DXC 320	380
Onkyo DX 7510	400
Onkyo CM 716	450
Pioneer PD-F805	300
Pioneer PD-S705	300
Pioneer PD-F906	350
Pioneer PD-S904	400
Pioneer PD-S505 Precision	460
Rotel RCD-965BX	300
Rotel RCD-970BX	375
Sony CDP-CX55	280
Sony CDP-XE900E	300
Sony CDP-CX200	380
Sony CD-XA20ES	450
Sony CDP-X3000ES	500
TEAC CD-5	350
Technics SL-MC410	300
Yamaha CDX-890	350

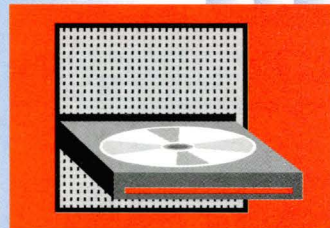
£501 to £1000

Acurus ACD11	899
Alchemist Nexus	597
Arcam Alpha 8	520
Audiolab 8000CD	1,000
AVI S2000MC2	895
Creek CD42	599
Denon DCD-3000	1,000
DPA Renaissance int CD	950
Fase Evoluzione Laserdrive 1.0	995
Helios Model 3	650
Helios Model 2	950
Heybrook Signature II	989
Linn Mimik	875
Marantz CD-17	800
Micromega Stage 4	600
Micromega Stage 5	750
Micromega Stage 6	950
Mission dAD3	598
Mission dAD3Q	898
Monrio Privilege	995
Myriad MC100	700
Naim CD3	1,000
Orelle CD100eA	649
Orelle CD-100eSA	999
Pink Triangle Numeral	999
Pioneer PD-506	550
Primare D20	800
Quad 77 Bus	700
Quad 77 Mains	900
Roksan Caspian	895
T+A CD1200R	895
TEAC VRDS-7	599
TEAC VRDS-9	700
TEAC VRDS-10SE	850
Technics SL-P2000	1,000
Trichord Genesis	549
Trichord Digital Jukebox 25	599
Trichord Digital Jukebox 50	649
Trichord Digital J'box 100	699
Trichord Revelation	799

Over £1000

Acoustic Precision Eikos	1,850
Alchemist Forseti	1,950
Audio Research CD1	3,290
Audio Research CD2	4,100
Audiomeca Talisman	2,150
Audiomeca Talisman SE	2,300
AWI S2000MC	1,399
Cary CD-301	2,495
Conrad-Johnson DF-2	1,695
Conrad-Johnson DV-2b	2,495
Copland CD277	1,800
Copland CDA288	2,199
Helios Model 1	1,250
Helios Stargate	2,250
Krell KPS30i	5,490
Krell KPS-20i	9,990
Marantz CD-17KI	1,300

Marantz CD-23	4,000
Mark Levinson 39	4,995
Meracus Tanto	1,395
Meracus Imago Player	4,495
Meridian 506	1,100
Meridian 508	1,995
Micromega Solo	2,750
Musical Fidelity FCD	1,500
Myriad MCD500	1,300
Naim CD2	2,000
Naim CDS	3,940
Pink Triangle Litaural	2,099
Primare 302	1,800
Roksan Attesa-DP3P	1,495
Sherwood CD1	1,100
Sonic Frontiers Anthem CD1	1,595
Sonic Frontiers SFCD-1	3,495
TEAC VRDS-25	1,300
XTC CDP-1	1,250



CD TRANSPORTS

KEY
 [10] - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

Arcam Delta 250	800
Audio Research CDTI	3,290
Audio Synthesis Transcend	1,395
Audiolab 8000CDM	1,400
Audiomeca Damnation	999
Audiomeca Damnation SE	1,100
Audiomeca Kreatura SE	1,400
Audiomeca Mephisto	2,350
Cambridge Discmagic One	300
Conrad-Johnson DR-1	1,795
DPA Enlightenment Drv	725
Jadis J03	4,850
Jadis J02	4,990
Jadis J01	12,500
Krell KPS-20t	8,490
Linn Karik	1,850
Mark Levinson 37	3,995
Mark Levinson 31.5	9,295
Meracus Imago	3,995
Meridian 500	1,245
Micromega Drive 3	750
Micromega Data	2,250
Monrio Bitmatch	950
Muse Model 5	1,800
Pink Triangle Cardinal II	875
PS Audio Lambda TR	2,250
PS Audio Lambda AT&T	2,778
Roksan Attesa-DP3	1,295
Sonic Frontiers SFT-1	2,295
Sonic Frontiers Transport 3	5,995
T+A CM1200R	990
TEAC VRDS-11	550
TEAC P-30	2,500
Theta Digital Data Basic II	2,397
Theta Digital Data III NTSC/PAL	5,455
Thorens TCD-2000	999
Trichord Digital Turntable	699
Tube Tech Fulcrum	1,000
Wadia 8	3,195
Wadia 20	4,370



DIGITAL TO ANALOGUE CONVERTERS (DACs)

KEY
 4 - number of digital inputs

AMC CDM7DAC	100
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AMC DAC8	130
AMC CDM7VAC	200
Apogee Digital DA-1000	3,395
Arcam Black Box 50	350
Arcam Black Box 500	500
Audio Note DAC1	675
Audio Note DAC2	1,099
Audio Note DAC3	1,750
Audio Research DAC5	2,148
Audio Research DAC5	2,335
Audio Research DAC3	4,195
Audio Research DAC3	4,555
Audio Synthesis DAX Decade	2,795
Audiolab 8000DAC	900
Audiomeca Elixir	799
Audiomeca Ambrosia	1,850
Boulder 2020	17,750
Cambridge Dacmagic 2 Mk II	150
Chord DSC1100	2,575
Chord DSC1500	3,850
Conrad-Johnson D/A-3	1,195
Conrad-Johnson D/A-2b	1,990
Denon DCD-425	150
DPA Little Bit 3	325
DPA Renaissance DAC	570
DPA Enlightenment DAC	825
DPA SX128	2,000
DPA SX256	4,000
DPA SX512	8,000
Jadis JS3	2,129
Jadis JS1	8,068
LFD DAC2	1,950
LFD DAC3	3,000
Linn Numerik	1,500
Manley Professional DAC-20	6,950
Mark Levinson 36	3,995
Mark Levinson 30.5	15,950
Meracus Auriga	1,295
Meracus Flagrare	2,495
Meridian 566	1,095
Micromega DAC 2	750
Micromega Dialog	2,000
Monrio 18B2	795
Muse Model 2	2,190
Muse Model 2 Plus	2,500
Musical Fidelity X-ACT	200
Musical Fidelity X-DAC	300
Onkyo DX 7310	330
PS Audio DL3	777
PS Audio SL3	1,449
PS Audio UltraLink 2 HCCD	2,590
PS Audio Ref Link	4,550
Roksan Attesa-DA2	595
Sonic Frontiers SFD-2 Mk 2	5,295
Sonic Frontiers Processor 3	6,995
Sumo Theorem II	945
Sumo Theorem IIB	1,155
TEAC D-11	500
TEAC D-700	600
Theta Digital Chroma Std	849
Theta Digital Pro Geny	1,145
Theta Digital Pro Prime II	1,800
Theta Digital Pro Basic III	2,990
Theta Digital Gen V SE	4,300
Theta Digital Casablanca LS	5,910
Thorens TDA-2000	700
Trichord Pulsar Ser One	1,395
Tube Tech Fulcrum	1,400
Wadia 12	1,530
Wadia 15	3,790
Wadia 64.4	4,750
Wadia 16	7,395
Wadia 7	9,995
Wadia 9	12,790
Woodside DVAC-18	1,499



DIGITAL RECORDERS

KEY
 MD - MiniDisc
 DAT - Digital Audio Tape
 [10] - portable

Denon DMD-1300	500
Kenwood DM-7090	500
Onkyo MD 122	700
Pioneer PDR-04	700



Pioneer D-05	DAT	900
Pioneer PDR-05	DAT	1,000
Pioneer D-C88	DAT	2,000
Sharp MD-R1E	MD	300
Sharp MD-MS200H	MD	350
Sharp MDXV300H	MD	1,000
Sony MZ-E20	MD	180
Sony MDS-JE510	MD	250
Sony MZ-E30	MD	280
Sony MDS-S38	MD	300
Sony MZ-R30	MD	300
Sony MDS-JA30ES	MD	699
TEAC MD-H500	MD	650
TEAC MD-10	MD	950



HEADPHONES

KEY

'D' - dynamic type, compatible with virtually all normal headphone sockets.

'E' - electrostatic type; generally includes a separate power supply.

☉ - open-back construction.

☿ - closed-back construction.

Up to £40

Aiwa HP-X301	D	☉	20
Aiwa HP-VX303	D	☉	25
Aiwa HP-X705	D	☉	40
AKG Rox	D	☉	30
Audio Technica ATH-P5	D	☉	20
Beyer DT11	D	☉	15
Beyer DT11	D	☉	31
Beyer DT211TV	D	☉	35
JVC HA-C088	D	☉	18
JVC HA-D525	D	☉	20
JVC HA-F65	D	☉	20
JVC HA-D626	D	☉	25
Kenwood KPM-310	D	☉	18
Kenwood KPM-410	D	☉	25
KLH KHP201TW	D	☉	21
KLH KHP-300V	D	☉	25
KLH KHP-420V	D	☉	33

Maxell HP-1000	D	☉	20
Maxell HP-2000	D	☉	25
Maxell HP-3000	D	☉	30
Pioneer SE-A40	D	☉	20
Pioneer SE-A20V	D	☉	23
Pioneer SE-M250	D	☉	25
Pioneer SE-M350	D	☉	30
Sennheiser HD56	D	☉	18
Sennheiser HD433	D	☉	20
Sennheiser HD435 Vegas	D	☉	30
Sennheiser HD435 Manhattan	D	☉	30
Sennheiser HD60TV	D	☉	40
Sony MDR-W20G	D	☉	18
Sony MDR-E837	D	☉	18
Sony MDR-P70	D	☉	18
Sony MDR-ED238	D	☉	20
Sony MDR-009TV	D	☉	20
Sony MDR-A34L	D	☉	20
Sony MDR-E848	D	☉	20
Sony MDR-P1TV	D	☉	25
Sony MDR-CD270	D	☉	30
Sony MDR-E868	D	☉	35
Sony MDR-V400	D	☉	40
Sony MDR-D11	D	☉	40
Technics RP-F200	D	☉	30
Technics RP-HT300	D	☉	40
Vivanco SR250	D	☉	19
Vivanco SR150	D	☉	20
Vivanco SR200	D	☉	25
Vivanco SR300	D	☉	30

Over £41

AKG K301	D	☉	80
AKG K222IR	D	☉	100
AKG K401	D	☉	120
AKG K501	D	☉	150
AKG K333IR	D	☉	150
AKG K444IR	D	☉	180
AKG K290S	D	☉	250
AKG K1000	D	☉	700
Audio Technica ATH910PRO	D	☉	80
Audio Technica ATHD40FS	D	☉	120
Audio Technica ATHM40FS	D	☉	120
Audio Technica ATH911	D	☉	120
Beyer DT311	D	☉	50
Beyer DT411	D	☉	63
Beyer DT511	D	☉	106
Beyer DT801	D	☉	125
Beyer DT811	D	☉	145
Beyer DT100	D	☉	160
Beyer DT901	D	☉	160
Beyer DT911	D	☉	170
Denon AH-D210	D	☉	45
Denon AH-D350	D	☉	65
Denon AH-D550	D	☉	80
Denon AH-D650	D	☉	95
Denon AH-D750	D	☉	130
Denon AH-D950	D	☉	150
Grado SR40	D	☉	45
Grado SR60	D	☉	79
Grado SR80	D	☉	100
Grado SR125	D	☉	150

Grado SR225	D	☉	200
Grado SR325	D	☉	300
Grado RS2	D	☉	495
Grado RS1	D	☉	695
Jacklin Float Model 1	D	☉	79
Jacklin Float Model 2	D	☉	99
Jacklin Float ELS	E	☉	399
JVC HA-D727	D	☉	43
JVC HA-W60	D	☉	49
JVC HA-D910	D	☉	65
JVC HA-D1000	D	☉	250
JVC HA-F25	D	☉	699
Philips SBC 3396	D	☉	70
Philips SBC HP9000	D	☉	90
Pioneer SE-M550	D	☉	50
Pioneer SE-M750	D	☉	60
Precide Ergo Model 1	D	☉	120
Precide Ergo Model 2	D	☉	140
Sennheiser HD445	D	☉	45
Sennheiser IS 380	D	☉	55
Sennheiser HD455	D	☉	55
Sennheiser HD465	D	☉	65
Sennheiser HD475	D	☉	80
Sennheiser HD25 SP	D	☉	90
Sennheiser HD535	D	☉	105
Sennheiser IS450	D	☉	120
Sennheiser HD545 Ref	D	☉	125
Sennheiser HD250II	D	☉	150
Sennheiser HDC 451-1	D	☉	150
Sennheiser HD565 Ovat'n	D	☉	150
Sennheiser HD265 Linear	D	☉	150
Sennheiser HD25-13	D	☉	160
Sennheiser HD25	D	☉	160
Sennheiser HD 580 P'cision	D	☉	200
Sennheiser HD600	D	☉	250
Sennheiser Lucas	D	☉	280
Sennheiser IS850	D	☉	859
Sennheiser HE60/HEV70	E	☉	998
Sennheiser Orpheus	E	☉	9,652
Sony MDR-IF120K	D	☉	50
Sony MDR-E888	D	☉	55
Sony MDR-IF125RK	D	☉	60
Sony MDR-V600	D	☉	70
Sony MDR-F1	D	☉	100
Sony MDR-NC5	D	☉	100
Sony MDR-IF420RK	D	☉	100
Sony MDR-CD770	D	☉	100
Sony MDR-D77	D	☉	130
Sony MDR-IF520RK	D	☉	150
Sony MDR-CD1700	D	☉	200
Stax SR-001	E	☉	280
Stax SR-Lambda Nova C	E	☉	370
Stax SR-Lambda Nova Basic	E	☉	449
Stax SR-Lambda Nova S	E	☉	450
Technics RP-F800	D	☉	50
Technics RP-HT600	D	☉	60
Technics RP-DJ1200	D	☉	130
Vivanco IR5800	D	☉	50
Vivanco IR5700	D	☉	50
Vivanco IR5000	D	☉	50
Vivanco SR850	D	☉	50
Vivanco SR650	D	☉	50
Vivanco SR750	D	☉	60
Vivanco IR6000	D	☉	70
Vivanco SR909	D	☉	70
Vivanco FMH 3000	D	☉	80
Vivanco IR6500	D	☉	90
Vivanco SR10001FL	D	☉	110
Vivanco IR7100	D	☉	120
Vivanco IR7600	D	☉	140
Vivanco SR200IFL	D	☉	140

Atacama BD17			55	
Atacama BD25			60	
Atacama SE16			65	
Atacama SE12			65	
Atacama SK500			67	
Atacama F2			70	
Atacama F1			70	
Atacama SX600			70	
Atacama SL200			70	
Atacama SE24		61	70	
Atacama SE20			70	
Atacama SX700			73	
Atacama SL300			73	
Atacama TP600			75	
Atacama TP500			75	
Atacama SE615			75	
Atacama SE515			75	
Atacama SE415			75	
Atacama SL400			76	
Atacama SE1000S			80	
AVF Tower P6144BP		60	35	
BCD Model 1010		60	495	
Credo STD 001			284	
Custom Design CD 500		50	35	
Custom Design AS 630AV		65	40	
Custom Design AS 130		25	40	
Custom Design Tri 100		50	50	
Custom Design R/S 200		50	50	
Custom Design R/S300		60	70	
Custom Design Tri 300		55	85	
Custom Design SCS 24		60	85	
Custom Design X24		61	109	
Custom Design C 20		50	109	
Custom Design H1		50	275	
Deadrock 903		60	60	
Deadrock 902		47	60	
Deadrock 901		39	60	
Dynaudio Trophy		60	120	
Dynaudio Master		60	200	
Dynaudio Ultima		60	290	
Harbeth HL-Stands		21	249	
Heybrook Stand-ULT		3	55	
Heybrook Stand-S6		63	69	
Heybrook Stand-S4		48	69	
Heybrook Stand-S1		47	119	
JPW MS2		45	45	
JPW MS3		61	55	
JPW MS1		46	80	
JPW HS1		58	120	
JPW HS2		45	120	
Kudos Audio Arrow		60	50	
Kudos Audio S-50		60	100	
Kudos Audio S-100		63	270	
Mission Micrometer		58	70	
Mission Entasis		58	98	
Opera S1		60	345	
Pioneer CP-7		50	50	
Pioneer CP-8		80	80	
Projekt Signature			80	
Revolver RS1		50	70	
Royd Royd		55	99	
SD Acoustics SD Alexandra		50	369	
Silverado Silverado 1 Stand		60	350	
Sonus Faber Ironwood			475	
Sonus Faber Stonewood			497	
Sound Org 2037			55	
Sound Org 2027			55	
Sound Org 2026			55	
Sound Org 2518			45	65
Soundstyle XG118		42	100	
Stands Unique Speaker support		59	159	
Stands Unique Tuned Spkr Support		59	220	
Stands Unique Tuned Carbon Fibre		59	299	
Stands Unique Vivas CF Spkr Supp		60	349	
Target TR60		60	68	
Target R1		53	280	

EQUIPMENT SUPPORTS

KEY

3 - number of shelves

Alphason SM17		1	49
Alphason VSM17		1	85
Alphason GSM17		1	85
Alphason GMV1P		1	110
Alphason R17/17		3	120
Alphason GMH1P		1	150
Alphason GR17/17		3	150
Alphason VR17/17		3	190
Audiophile Base 01		1	79
Audiophile S4T120		4	280
Audiophile S4T120P		4	560
BCD Model 1006/8		1	795
BCD Model 1000		3	1,250
Custom Design G3		3	130
Custom Design Aspect 650		4	240
Custom Design Aspect 500AV		3	270
Custom Design Aspect 850		5	270
Deadrock 701		1	60
Deadrock 802		2	90
Deadrock 703		3	130



SPEAKER STANDS

KEY

60 - height of stand in cm

Alphason NCI	60	47
Alphason Akros I	60	49
Alphason RS1	120	49
Alphason Akros II	60	59
Alphason NCH	60	84
Alphason HDS-40/M	60	85
Alphason Titan S	60	125
Apollo AZ6	66	80
Arcici Q-1	30	299
Arcici Q-2	30	299
Atacama BD21	56	55

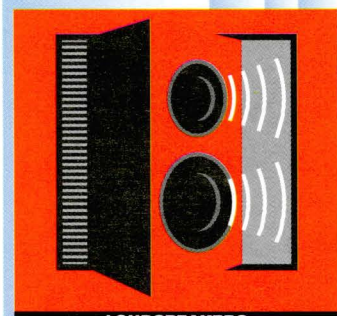
Deadrock 704	4	190	Projekt A6	6	280
Deadrock 705	5	230	Projekt B3i	6	300
Fi-Rax R4	6	399	Projekt B4	8	340
Frameworks H175	1	130	Projekt B Multi	8	345
Frameworks FS1		150	Projekt B3ii	7	345
Frameworks FT2		285	Projekt C3	9	375
Frameworks FT3		350	Projekt D3	12	420
Frameworks H700		355	Projekt C3i	8	420
Frameworks H900		389	Projekt B5	10	425
Frameworks H500/H175	3	404	Projekt C3iii	11	465
Heybrook Stand-Signature	4	249	Projekt C3ii	10	465
Impulse Iso-plate		190	Projekt D3i	12	500
JPW 3 Tier	3	80	Projekt C4	12	500
JPW 5 Tier	5	100	Projekt C3iv	10	510
Kudos Audio Corinthian	5	600	Projekt D3ii	14	545
Linn K3000		85	Projekt C Multi	9	555
Mana Sound Frame		125	Projekt D4	16	560
Mana Mini Table		150	Quadraspire Q4S mini shelf	1	60
Mana Power supply table		150	Quadraspire Q4S shelf	1	60
Mana Reference flat top		150	Quadraspire QKS Cabinet shelf	1	80
Mana Sound Shelf		175	Quadraspire QAV shelf	1	120
Mana Sound Base		175	Quadraspire Q4M mini table	4	200
Mana Sound Stage		200	Quadraspire Q4 table	4	200
Mana Sound Table		235	Quadraspire QAV table	3	300
Mana Ref Shelf		325	Quadraspire Q4SP Table	4	320
Mana Reference Table		350	Quadraspire QAVSP Table		400
Mana 2 Tier Amp stand		375	Quadraspire QK Cabinet	4	400
Mana 3 Tier Amp Stand		450	Reson DOMOPS	1	195
Mana 4 Tier Amp Stand		500	Reson DOMOWS	1	195
Mana 5 Tier Amp Stand		600	Sound Org Z022	1	65
Mana 6 Tier Amp Stand		700	Sound Org Z021	2	78
Mission Hark		298	Sound Org Z030	3	100
Optimum G2	2	69	Sound Org Z060	4	120
Optimum G2/Pedestal	2	99	Sound Org Z038	5	135
Optimum G4/Pedestal	5	130	Sound Org Z540	4	140
Optimum OPT 3406	3	149	Sound Org Z545	4	140
Optimum G5/Pedestal	6	150	Sound Org Z560	5	160
Optimum OPT 4906	4	199	Sound Org Z530	3	170
Optimum OPT 6606	5	249	Soundstyle X300	3	180
Optimum OPT 440	3	249	Soundstyle X305	3	210
Optimum OPT 390	4	299	Soundstyle X053	4	210
Optimum OPT 440	4	299	Soundstyle X050	4	210
Optimum OPT 10206	6	299	Soundstyle X6300	3	215
Optimum AV 300	3	329	Soundstyle X100	4	220
Optimum OPT 700	5	349	Soundstyle X6110	4	230
Optimum OPT 610	5	349	Soundstyle X058	5	240
Optimum OPT 660	5	349	Soundstyle X310	3	250
Optimum OPT 1020	6	399	Soundstyle X105	5	250
Optimum OPT 1190	7	450	Soundstyle X6053	4	255
Projekt A3	3	145	Soundstyle X6100	4	265
Projekt A4	4	190	Soundstyle X6310	3	275
Projekt A5	5	235	Soundstyle X6058	5	290
Projekt B3	6	255	Soundstyle X6105	5	300

Soundstyle Finewoods W105	5	320
Stands Unique Isolation Platform	1	249
Stands Unique Sound Support	4	249
Stands Unique Sound Tower	5	289
Stands Unique Compact Sound Supp	4	315
Stands Unique Sound Support 10	4	315
Stands Unique Sound Twr Cabinet	5	369
Stands Unique Ref Wall Support	1	550
Stands Unique Ultimate Tower	10	689
Stands Unique Ref Floor Support	6	799
Target B5	5	175
Townshend Seismic Sink 1-CD		110
Townshend Seismic Sink 1-3D		400
Townshend S/Sink Stand 1-4	4	999
Townshend Seismic Sink 3-4	4	1,250
Wilson Benesch Standard Shelf	1	130
Wilson Benesch Mono Block	1	265
Wilson Benesch Kevlar Shelf	1	270
Wilson Benesch Asside Basic		590
Wilson Benesch Asside	4	720
Wilson Benesch Triptych	1	990

Solid HCM2		130
Sony SS-86E		100
Tangent Monitor 3		60
Tangent Monitor 5		80
Tangent Monitor 7		100
Tannoy Mercury M1		120
TDL Nucleus 1		60
TEAC LS-X8 Mk II		80
Technics SB-CS55		80
Technics SB-CS65		100
Technics SB-CS75		100
Visonik 5202		129
W'dale Valdis 100		80
W'dale Diamond 7.1		100
W'dale Valdis 200		110
W'dale Modus Micro		110

£131 to £200

Acoustic Energy AE100		200
Allison Model 4A		170
B&W DM302		150
B&W CWM5		170
B&W DM601		199
Bose 101		190
Bose 141		200
Boston CR6		149
Boston 325		149
Boston Micro 80 Sat		169
Boston Runabout		169
Boston 335		179
Boston 351		189
Boston CR7		199
Boston Runabout II		200
Celestion 15i		199
Cerwin-Vega CT-165		200
Denon SC-E313		160
Gale 2IB		140
Gale 4i		140
Gale 3s		150
Genexxa GX650		140
GLL Imagio C100		170
Heybrook Prima		159
Infinity SM65		150
Infinity Reference 1i		150
Infinity Reference 1ii		200
Interaudio XL2000		200
Jamo 38		150
Jamo 525		150
Jamo 560		170
Jamo 660		170
Jamo Cornet 65		170
Jamo Studio 180		180
Jamo D165		200
Jamo 68		200
JBL TLX121		150
JPW ML510		150
JPW ML610		170
JPW SS551		200
KEF Coda 8		189
KEF Q15		199
KEF Model 60S		199
Kenwood LS-200G		200
KLH Model 21		155
KLH Model 11		155
KLH Model 31		185
Mission 731i Pro		140
Mission 732i		200
Mordaunt-Short MS10i		140
Mordaunt-Short VS-200		150
Mordaunt-Short MS20i Pearl		200
Mordaunt-Short VS-300		200
Mordaunt-Short MS20i		200
Pioneer CS-5030		170
Polk M2		180
Polk RT3		200
Polk AB610		200
QLN Qubic111		200
Rega KYTE		198
Revolver Colt		139
Revolver The 230		169
Revolver Purdy MkII		199
R Allen Minette 3		159
R Allen Dim'n 5/1 Compact		179
R Allen RA6		199
Rogers GS1		179
Royd ATX		155
Sequence 200		199
Solid Monitor		200
Sony SS-126EB		150
Sony SS-176E		200
Tangent Monitor 9		150
Tangent Monitor 11		180
Tannoy Mercury M2		140
TDL RTL 1		190
TDL NFM 1		200
Technics SB-CS95		150
Technics SB-M20		200
Visonik 6003		143
Visonik 5001		170
W'dale Diamond 7.2		140
W'dale Valdis 300		150
W'dale Modus Music Two		200
W'dale Valdis 400		200

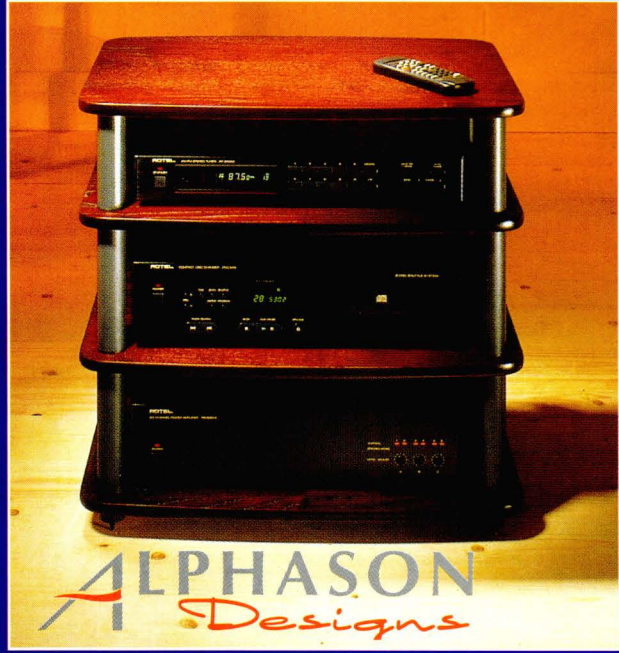


LOUDSPEAKERS

- KEY**
- ⌋ - floorstander; larger models requiring no separate stand.
 - ⌋ - stand mount; smaller models designed to be raised above the floor.
 - ⌋ - wall mount; designed to be hung on the wall or mounted in-wall.
 - ⌋ - box type, including infinite baffle, reflex and transmission line types.
 - ⌋ - horn type; mostly large and very efficient.
 - ⌋ - panel type, including electrostatic and planar magnetic types.
- Up to £130

Allison Micro Monitors		95
Allison Mini References		120
Celestion 12i		119
Denon SC-M2		70
Gale Mini Monitors		80
Genex a GX300		80
Genexxa GX330		80
GLL Arena		99
Goodmans Active 75		65
Interaudio XL1000		130
Jamo Studio-80		70
Jamo SAT-90		90
Jamo Cornet 25		100
Jamo D-110		100
Jamo SAT-170		110
Jamo Studio-110		110
Jamo Cornet 35		120
Jamo Artina		120
Jamo D-115		120
Jamo 28		125
JBL TLX111		120
JPW Mini Monitor		60
JPW ML110		70
JPW Gold Monitor		80
JPW ML210		80
JPW ML310		90
JPW ML410		100
JVC SX-SC1VBK		60
JVC SP-V50		80
JVC SP-X220TBK		100
JVC SP-X550BK		130
KEF Coda 7		129
Kenwood LS-90UK		130
Mission 731i		130
Mordaunt-Short VS-100		100
Mordaunt-Short MS05i		100
NAD 801		100
Pioneer CS-3030		120
Polk AB410		100
Realistic Minimus 26		56
Realistic Minimus Pro-77		100
Revolver Beretta		100
R Allen Minette 2		129

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W'dale Diamond 7.3	200	NHT SuperZero	238	Boston VR20	380	Mission 751i	348		
ZYP A1	199	Pioneer CS-7030	230	Castle Tay	350	Mission 734i	499		
£201 to £300									
Acoustic Energy AE200	300	Pioneer CS-9030	280	Castle Kendal	450	M-A Monitor 3	400		
Audio Gem Opal	230	Pioneer S-LC1	300	Castle Eden	470	M-A Monitor 4	500		
B&W CWM6i	280	Polk ABS05	220	Celestion 25i	399	Mordaunt-Short MS25i Pearl	330		
B&W DM602	300	Polk M3 II	220	Celestion 30i	449	Mordaunt-Short MS40i	450		
Bose 151	270	Polk RT5	250	Celestion 35i	499	Mus Tec Harrier	400		
Bose 161	275	Polk RT7	300	Cerwin-Vega VS-10	350	NAD 804	400		
Bose 201	290	Polk M5	300	Clements 300si	395	Neat Critique	385		
Boston 361	219	Promenade SP1	299	Dali 104B	370	NHT SuperOne	358		
Boston CR8	239	QLN Qubic 122	270	Dali 606	400	NHT Model 1.5	450		
Boston 381	259	Rega EL8	298	Dali Royal	500	Opera Duetto	400		
Boston CR9	279	Revolver The 250	250	Def Tech Celsius	395	Origin Live OL-1AS	399		
Boston Voyager	299	R Allen Dimension Five 1	239	Epos ES12	499	Pentagon Live Monarch	399		
Castle Isis	250	R Allen RA8	249	Faraday SG	345	Pentachord A	469		
Celestion 23i	299	R Allen RA8M	249	Faraday Siren	445	Pioneer S-LC2	450		
Cerwin-Vega VS-8	250	R Allen Dimension Five 2	269	GLL Imagio IC120	400	Polk AB705	330		
Cerwin-Vega CT-330	300	Rogers db101	250	GLL Imagio IC130	500	Polk RT8	400		
Chario Syntar 100	250	Rogers GS3	279	Heybrook Heylios	389	Polk RT10	500		
Dali 102B	260	Royd The Envoy	249	Heybrook Heylo	439	Polk AB805	500		
Dali 150	300	Royd Minstrel	275	Infinity SM105	350	Prof Monitor Co TB1S	366		
Faraday FS1	245	Ruark Epilogue	239	Infinity SM115	400	Prof Monitor Co TB1SM	403		
Gale 58	220	Sequence 300	249	Infinity SM125	500	Prof Monitor Co TB1	410		
GLL Imagio IC110	260	Solid HCM1	250	Jamo Classic 6	330	Prof Monitor Co TB1M	447		
GLL Imagio IC115	300	Sony SS-176EB	250	Jamo Cornet 75	330	Prof Monitor Co XB1	499		
Heybrook Optima	259	Tannoy Mercury M3	230	Jamo BX-100A	350	Promenade SP2	399		
Heybrook Heylette	269	Tannoy Precision P10	300	Jamo 98	350	Promenade SP3	499		
Heybrook HB1	269	TDL RTL 2	280	Jamo 407A	350	QLN Qubic 166	400		
Infinity SM85	250	Visonik 7003	203	Jamo D365	400	Rega ELA MkII	498		
Interaudio XL3000	230	Visonik SUB5	259	Jamo Cornet 95	400	Revolver The 260	350		
Interaudio XL4000	295	W'dale Modus Music Four	230	Jamo Classic 8	400	R Allen Dimension Five 3	349		
Jamo 892	220	W'dale MFM1	250	Jamo Graphic	400	R Allen Dimension Five 4	429		
Jamo Classic 4	250	W'dale Valdsu 500	300	Jamo 128	450	Rogers GS5	379		
Jamo Art	270	Yamaha NS10M	300	Jamo BX-150A	450	Rogers GS6	429		
Jamo Deco Art	280	ZYP A1T	219	Jamo Atmosphere	480	Rogers GS8	479		
Jamo D265	300	ZYP A2S	275	Jamo 477A	500	Rogers C6/20	499		
Jamo 307A	300	ZYP A2ST	295	JBL LX6	350	Royd The Squire	350		
JBL LX2	250	£301 to £500							
JBL TLX151	300	Acoustic Energy AE109	350	JBL TLX161	400	Royd Minstrel SE	399		
JPW ML710	230	Acoustic Energy AE209	480	JBL PS8	500	Royd Doublet	485		
JPW ML810	260	Acoustic Energy AE120	500	JBL TLX171	500	Ruark Icon	359		
JPW ML910	300	Allison Model 2A	420	JM Lab Micron	395	Sequence 400	329		
JVC SX-SW10	300	AudioInnov Alto	329	JM Lab Megane	495	Solid Verticale	400		
KEF Coda 9	299	B&O Beovox CX50	325	Jordan Watts JHFLG	380	Spendor S2	399		
KEF Model 70S	299	B&O Beovox CX100	425	JPW SS553	400	Spendor 2020	399		
KLH 83A	205	B&W CWM8i	350	JPW ML1010	400	Spendor S1	499		
KLH 183A	265	B&W DM305	350	JPW Ruby 1	400	Tannoy Precision P20	400		
KLH Soundbites System	276	B&W DS6	400	JPW Ruby 2	500	TDL RTL 3	400		
KLH Model 81	280	B&W CDM2	400	KEF Q35	349	TDL RTL 3SE	450		
KLH Model 41	290	B&W DM603	500	KEF Q55	499	TDL Chiltern	450		
M-A Monitor 1	250	B&W Signature 7	500	KEF RDM One	499	Technics SB-M300	350		
M-A Monitor 2	300	Bandor Pictures	352	Keswick Aria II	379	Technics SB-M500	450		
Mordaunt-Short MS30i	275	Blue Room Mini Pod	400	KLH 283A	310	Totem Mite	495		
Mordaunt-Short MS10i Classic	280	Bose 301	380	KLH 383A	335	Triangle Titus TZe	379		
Mordaunt-Short MS25i	300	Bose 171	386	KLH Model 51	375	Visonik TB1S	366		
Mus Tec Kastrel SE	300	Bose A'mass AM3 II	500	KLH Model 71	420	W'dale Modus Music Six	330		
NAD 802	280	Boston Micro 90 Sat	369	KLH Model 62T	486	W'dale MFM3	350		
		Boston Micro 80 Sys	369	Linn Sekrit	395	W'dale Modus Music Eight	430		
				Mission 733i	330	W'dale MFM5	450		
						W'dale Modus Music 1/6	500		



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Acoustic Energy AE1-II	795						
Acoustic Precision Eikos FR1	800						
Allison Model 3A	525						
Audio Gem Emerald	540						
Audio Note AN-K/D	620						
Audio Note AN-J/B	799						
B&O Beolab 2500	750						
B&W CDM1	600						
B&W P4	675						
Bose 501	700						
Bose SE-5 Ser II System	760						
Bose A'mass AM5 II	800						
Boston VR30	600						
Boston Micro 90 Sys	669						
Castle Severn 2	580						
Castle Avon	730						
Celestion 45i	599						
Cerwin-Vega VS-12	550						
Cerwin-Vega VS-15	700						
Chario Syntar 100T	550						
Clements 600si	595						
Dali 107	600						
Dali 350	600						
Dali 450	700						
Dali 109	800						
Def Tech BP6B	750						
Diapason Micra II	695						
Dynaudio Applause 50	577						
Epos ES14	675						
Faraday FS10	795						
Harbeth BBC LS3/5A	699						
Harbeth HL-P3ES	799						
Heybrook Ultima	649						
Heybrook Quartet	649						
Infinity SM155	550						
Jamo BX-200A	530						
Jamo Classic 10	600						
Jamo 507A	700						
JBL LX7	550						
JBL TLX181	600						
JBL SWA1500	700						
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JM Lab Opal 59 ti	☐	☐	☐	750
Jordan Watts JH200	☐	☐	☐	510
Jordan Watts JH400	☐	☐	☐	565
JPW Ruby 3	☐	☐	☐	800
KEF LS3/5a	☐	☐	☐	649
KEF RDM Two	☐	☐	☐	699
KEF Q65	☐	☐	☐	799
Keswick Volante	☐	☐	☐	729
KLH Model 82Ta	☐	☐	☐	690
Linn Tukan Passive	☐	☐	☐	550
Linn Keilidh Passive	☐	☐	☐	750
Manticore Minaret	☐	☐	☐	690
Meridian A500	☐	☐	☐	750
M&K S-85	☐	☐	☐	700
Mission 752f	☐	☐	☐	578
Mission 735f	☐	☐	☐	650
Mission 753f	☐	☐	☐	798
M-A Studio 2SE	☐	☐	☐	600
M-A 700 PMC	☐	☐	☐	600
M-A 702PMC	☐	☐	☐	700
M-A 703PMC	☐	☐	☐	800
Mordaunt-Short MS50i	☐	☐	☐	550
Mus Tec Falcon	☐	☐	☐	575
Naim Intro	☐	☐	☐	660
Neat Mystique	☐	☐	☐	575
Neat Petite II	☐	☐	☐	745
Opera Seconda	☐	☐	☐	595
Opera Operetta II	☐	☐	☐	770
Opera Platea	☐	☐	☐	795
Origin Live Resolution	☐	☐	☐	732
Origin Live Victory	☐	☐	☐	750
Pentachord B	☐	☐	☐	519
Pentachord Pentode	☐	☐	☐	529
Polk RT12	☐	☐	☐	600
Polk RT16	☐	☐	☐	799
Polk LS50	☐	☐	☐	800
Proac Tablette 50	☐	☐	☐	599
Proac Studio 100	☐	☐	☐	699
Promenade SP4	☐	☐	☐	650
QLN Classic One	☐	☐	☐	800
Quad 10L	☐	☐	☐	600
Rogers GS9	☐	☐	☐	579
Rogers LS2/5A	☐	☐	☐	699
Rogers CG/25	☐	☐	☐	799
Roksan ROKone 1	☐	☐	☐	595
Roksan Ojan 3	☐	☐	☐	795
Royd The Sorcerer	☐	☐	☐	595
Royd Abbot	☐	☐	☐	695
Ruark Templar II	☐	☐	☐	599
Ruark Sceptre	☐	☐	☐	599
Ruark Talisman II	☐	☐	☐	749
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Spendor LS3/5A	☐	☐	☐	630
Spendor SP3/1P	☐	☐	☐	795
T+A TB 100	☐	☐	☐	690
Tannoy Precision P30	☐	☐	☐	600
Tannoy Definition D100	☐	☐	☐	689
Tannoy Precision P40	☐	☐	☐	800
TDL T-Line 2	☐	☐	☐	550
TDL Cotswold	☐	☐	☐	650
TDL RTL 4	☐	☐	☐	650
TDL T-Line 3	☐	☐	☐	700
Totem Rokk	☐	☐	☐	695
Triangle Comete TZe	☐	☐	☐	525
Triangle Lunn	☐	☐	☐	550
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£801 to £1500

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Acoustic Solutions Eight	☐	☐	☐	1,200
Alon I Mk II	☐	☐	☐	1,500
Ambience Mod. 4.0	☐	☐	☐	1,185
Apertura Prima	☐	☐	☐	920
Apertura Agora	☐	☐	☐	1,095
Apertura Nova	☐	☐	☐	1,295
ATC SCM10	☐	☐	☐	999
Audio Note AN-I/D	☐	☐	☐	930
Audio Note AN-K/SPx	☐	☐	☐	1,060
Audio Note AN-E/B	☐	☐	☐	1,299
Audio Note AN-I/SPx	☐	☐	☐	1,415
Audio Physic Step	☐	☐	☐	1,299
AVI Positron	☐	☐	☐	899
B&O Beolab 4000	☐	☐	☐	1,100
B&W P5	☐	☐	☐	875
B&W DM7	☐	☐	☐	1,000
B&W DM604	☐	☐	☐	1,000
B&W P6	☐	☐	☐	1,095
B&W Matrix 805 V	☐	☐	☐	1,095
Bandor Trident	☐	☐	☐	846
Bandor Mora	☐	☐	☐	1,260
Bandor Bandora	☐	☐	☐	1,340
Bose A'mass AM7	☐	☐	☐	900
Bose 701	☐	☐	☐	1,000
Boston VR40	☐	☐	☐	1,000
Castle Harlech	☐	☐	☐	880
Castle Howard S2	☐	☐	☐	1,200
Celestion A1	☐	☐	☐	899
Celestion A2	☐	☐	☐	1,499
Cerwin-Vega AL-1000	☐	☐	☐	1,100
Cerwin-Vega 1515	☐	☐	☐	1,300
Chario Academy 1	☐	☐	☐	1,300
Clements Reference 1	☐	☐	☐	995

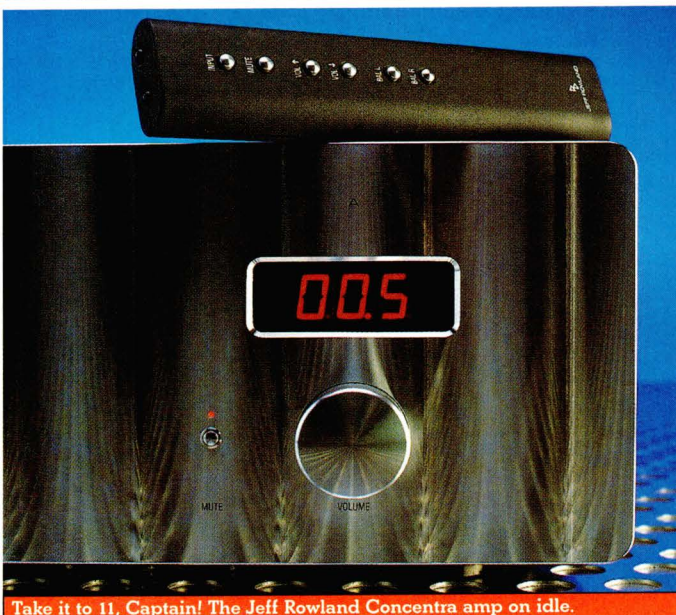
Dali 850	☐	☐	☐	1,100
Def Tech BP8B	☐	☐	☐	1,000
Def Tech BP10B	☐	☐	☐	1,500
Diapason Prelude II	☐	☐	☐	875
Dynaudio Contour 1.1	☐	☐	☐	879
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Electrocompaniet EC-Qube	☐	☐	☐	1,195
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Epos ES22	☐	☐	☐	1,185
Harbeth HL-K6	☐	☐	☐	1,049
Harbeth HL-Compact 7	☐	☐	☐	1,499
Harbeth BBC LS5/12A	☐	☐	☐	1,499
Heybrook Sextet	☐	☐	☐	1,299
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Jamo 707i	☐	☐	☐	900
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JBL L40	☐	☐	☐	1,000
JBL PS15	☐	☐	☐	1,000
JBL L80	☐	☐	☐	1,250
JBL L90	☐	☐	☐	1,500
JM Lab Profil 77	☐	☐	☐	1,050
JM Lab PS 5.1	☐	☐	☐	1,250
JM Lab Spectral 909.1	☐	☐	☐	1,375
Jordan Watts JH1 +1	☐	☐	☐	995
JPW Ruby 4	☐	☐	☐	1,000
KEF Q75	☐	☐	☐	999
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Kelly KT3	☐	☐	☐	1,200
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Keswick Milano	☐	☐	☐	1,199
Keswick Legato	☐	☐	☐	1,199
Keswick Amber	☐	☐	☐	1,499
Linn Tukan Aktiv	☐	☐	☐	1,050
Linn Keilidh Aktiv	☐	☐	☐	1,250
L Voice Auditorium	☐	☐	☐	1,300
Lowther Accolade 2	☐	☐	☐	1,199
Lumley L/M3.5	☐	☐	☐	1,050
Magneplanar SMG-C SE	☐	☐	☐	990
Magneplanar MG-0.6 SE	☐	☐	☐	1,370
Meridian Argent 1	☐	☐	☐	995
M&K S-125	☐	☐	☐	1,150
Mission 754f	☐	☐	☐	1,298
M-A Studio 12	☐	☐	☐	1,000
M-A 705PMC	☐	☐	☐	1,400
Mordaunt-Short Perf 820	☐	☐	☐	1,495
Mus Tec Condor	☐	☐	☐	1,000
Mus Tec Hawk	☐	☐	☐	1,250
Mus Tec Eagle	☐	☐	☐	1,500
Naim Credo	☐	☐	☐	1,060
NHT VT-1.2	☐	☐	☐	999
Opera Callas II	☐	☐	☐	950
Opera Terza	☐	☐	☐	999
Opera Callas Gold	☐	☐	☐	1,050

Opera Divina II	☐	☐	☐	1,500
Origin Live Sovereign	☐	☐	☐	975
Polk LS70	☐	☐	☐	1,200
Polk RT20p	☐	☐	☐	1,500
Proac Tablette 50 SIG	☐	☐	☐	899
Proac Response 1 SC	☐	☐	☐	1,199
Proac Studio 150	☐	☐	☐	1,399
Prof Monitor Co LB1	☐	☐	☐	935
Prof Monitor Co AB1	☐	☐	☐	1,496
QLN Signature	☐	☐	☐	1,000
QLN Signature HDII	☐	☐	☐	1,300
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Ruark Paladin	☐	☐	☐	1,099
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Shahinian Compass	☐	☐	☐	1,395
Silverado Ryder	☐	☐	☐	1,395
Sonus Faber Minuetto	☐	☐	☐	898
Sonus Faber Concerto	☐	☐	☐	1,098
Spendor 2040	☐	☐	☐	899
Spendor SP2/3E	☐	☐	☐	1,050
Spendor SP1/2E	☐	☐	☐	1,390
T+A TAS 1200E	☐	☐	☐	990
T+A TB 120	☐	☐	☐	990
Tannoy Definition D300	☐	☐	☐	999
TDL Cheviot	☐	☐	☐	850
Technics SB-M1000	☐	☐	☐	1,500
Totem Model One	☐	☐	☐	1,195
Triangle Antal	☐	☐	☐	1,099
Vandersteen 2Ce	☐	☐	☐	1,395
Visonik LB1	☐	☐	☐	935

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Acoustic Energy AE1 Sig	☐	☐	☐	1,695
Acoustic Energy AE2 Sig	☐	☐	☐	2,695
Alon II Mk II	☐	☐	☐	2,300
Ambience Mod 3.2	☐	☐	☐	1,780
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Apertura Tanagra Sig.	☐	☐	☐	2,395
ATC SCM20	☐	☐	☐	1,599
ATC SCM20 Tower	☐	☐	☐	2,099
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Audio Note AN-E/SPx	☐	☐	☐	2,250
Audio Physic Spark 2	☐	☐	☐	1,749
Audio Physic Tempo	☐	☐	☐	1,999
Avalon Monitor	☐	☐	☐	2,995
B&O Beolab 6000	☐	☐	☐	1,550
B&O Beolab 8000	☐	☐	☐	2,100
B&O Beolab Penta 3	☐	☐	☐	2,650
B&W Matrix 804	☐	☐	☐	1,695
B&W Matrix 803s2	☐	☐	☐	2,495
B&W Matrix 802s3	☐	☐	☐	2,995
Bose 901 VI	☐	☐	☐	1,650
Boston Lynfield 300L	☐	☐	☐	2,000
Bravura Virtuoso Bronze	☐	☐	☐	2,995
Carver AL-111P	☐	☐	☐	1,999
Cary SP-301	☐	☐	☐	2,295
Celestion A3	☐	☐	☐	2,399
Celestion Kingston	☐	☐	☐	2,500
Chord LS5/12A	☐	☐	☐	1,595
Chord CEL 201	☐	☐	☐	2,130
Chord CEL 202	☐	☐	☐	2,375
Chord CEL 301	☐	☐	☐	2,840
Clements Reference 7	☐	☐	☐	1,995
Credo SPB 003	☐	☐	☐	1,820
Credo SPB 009	☐	☐	☐	2,453
Dali Grand Coupe	☐	☐	☐	2,500
Def Tech BP2002	☐	☐	☐	2,400
Diapason Adamantes II	☐	☐	☐	1,895
Dynaudio Contour 1.8	☐	☐	☐	1,842
Dynaudio Craft	☐	☐	☐	2,598
Dynaudio Contour 3.0	☐	☐	☐	2,930
ECA Servo A.2	☐	☐	☐	2,450
ELS Res'ch Vision	☐	☐	☐	2,800
Epos ES25	☐	☐	☐	1,655
Epos ES30	☐	☐	☐	2,385
Gamma Epoch Ref Five	☐	☐	☐	2,999
Harbeth HL-S8	☐	☐	☐	1,999
Helius Syrius II	☐	☐	☐	2,395
Helius Syrius I	☐	☐	☐	2,850
Hi Q Sound SM108	☐	☐	☐	2,000
Horning Aristophane	☐	☐	☐	2,600
Impulse Lali	☐	☐	☐	1,850
Jamo Concert 11	☐	☐	☐	2,000
JBL L100	☐	☐	☐	1,750
JM Lab Spectral 913.1	☐	☐	☐	1,850
JM Lab Antea	☐	☐	☐	2,850
Jordan Watts JH2K	☐	☐	☐	2,820
KEF Ref. Model Two	☐	☐	☐	1,599
KEF Ref. Model Three	☐	☐	☐	1,999
Linn Kaber Passive	☐	☐	☐	2,000
Linn Kaber Aktiv	☐	☐	☐	2,640
Lowther Fidelio	☐	☐	☐</	

Manticore Matisse	+	□	1,890	Audio Physic Avanti 2	+	□	6,699
Martin-Logan Aeries i	+	□	2,299	Audio Physic Caldera	+	□	10,599
Meridian M60	+	□	2,150	Audio Physic Medea	+	□	24,999
M-A Studio 20SE	+	□	2,200	Avalon Avatar	+	□	4,495
Mordaunt-Short Perf 860	+	□	1,895	Avalon Arcus	+	□	6,000
Mordaunt-Short Perf 880	+	□	2,795	Avalon Eclipse	+	□	6,495
Naim SBL Active	+	□	1,830	Avalon Radian	+	□	10,995
Naim SBL Passive	+	□	1,970	Avalon Osiris	+	□	72,000
Neolith NEO 1	+	□	2,999	B&W Matrix 801s3	+	□	3,995
NHT VT-2	+	□	1,600	B&W Silver Signature	+	□	5,500
Opera Caruso II	+	□	2,350	B&W Nautilus	+	□	35,000
Origin Live Conqueror	+	□	1,650	Bandor Bandoline	+	□	3,290
Paragon Jubilee	+	□	1,995	Bandor Bandora/Mora	+	□	3,290
Pentachord P'column	+	□	1,649	Boston Lynfield 500L	+	□	4,449
Polk LS90	+	□	1,700	Bravura Virtuoso Silver	+	□	3,195
Posselt Albatross	+	□	2,500	Bravura Virtuoso Gold	+	□	3,395
Proac Response 2S	+	□	2,000	Bravura Virtuoso Reference	+	□	3,995
Proac Studio 250	+	□	2,249	Bravura Accelerando	+	□	6,600
Proac Response 2.5	+	□	2,700	Chario Academy 3 Junior	+	□	6,000
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QLN Prestige	+	□	1,600	Credo SPB 012	+	□	3,147
QLN Sig. Splitfield	+	□	1,600	Credo SDL 001	+	□	5,677
QLN Reference	+	□	2,000	Dali Grand	+	□	4,000
QLN Reference HDII	+	□	2,500	Def Tech BP2000	+	□	3,600
Rehdeko RK115	+	□	1,700	Dynaudio Contour 2.8	+	□	3,198
Rogers LS5/9	+	□	1,549	Dynaudio Contour 3.3	+	□	4,815
Ruark Crusader II	+	□	1,599	Dynaudio Confidence 3	+	□	4,846
Ruark Equinox	+	□	1,849	Dynaudio Confidence 5	+	□	5,924
Ruark Accolade	+	□	2,699	Dynaudio Consequence	+	□	14,566
SD Acoustics SD5	+	□	1,549	Electrofluidics Sonolith 2.2xi	+	□	5,999
SD Acoustics SD1E	+	□	2,995	ELS Res'ch Vista	+	□	3,900
Shahinian Arc	+	□	1,875	ELS Res'ch Illusion MkII	+	□	9,000
Shahinian Obelisk	+	□	2,695	Fase Evoluzione Aria	+	□	3,100
Silverado Silverado 1	+	□	1,995	Genesis 400	+	□	4,000
Sonus Faber Minima Amator	+	□	1,566	Genesis V	+	□	15,000
Sound-Lab Quantum	+	□	2,150	Genesis 300	+	□	27,500
Spendor SP7/1	+	□	1,990	Horning Agathon	+	□	3,555
Spendor SP100	+	□	2,099	Impulse Ta'us	+	□	3,100
T+A TB 140	+	□	1,680	Infinity Sigma	+	□	5,995
Tannoy Definition D500	+	□	1,999	Infinity Epsilon	+	□	9,995
Tannoy Stirling TW	+	□	2,200	Jamo Oriel	+	□	7,000
Tannoy Definition D700	+	□	2,500	JBL S2600	+	□	3,500
TDL Studio Monitor-m	+	□	2,750	JBL S3100	+	□	4,000
Totem Mann-2	+	□	2,795	JM Lab Alcor	+	□	4,995
Triangle Zays	+	□	1,750	JM Lab Utopia	+	□	16,000
Triangle Altinis	+	□	2,250	JM Lab Grande Utopia	+	□	33,000
Triangle Extran	+	□	2,950	Jordan Watts JHSK	+	□	3,950
Wilson Benesch Stand-in	+	□	2,000	Jordan Watts JH10K	+	□	7,570
Over £3000				KEF Ref. Model Four	+	□	3,299
Acoustic Energy AE5	+	□	7,995	Keswick Zero 2	+	□	7,000
Alon IV Mk II	+	□	3,495	Linn Keltik Aktiv	+	□	6,000
Alon Lotus SE	+	□	3,495	L Voice Air Scout	+	□	19,500
Alon V Mk III	+	□	4,995	L Voice Air Partner S	+	□	37,200
Alon Adriana	+	□	8,500	Lowther Delphic	+	□	3,099
Alon Circe	+	□	9,995	Lowther Opus One	+	□	4,999
Alon Phalanx	+	□	19,000	Lumley L/M 2 Sig. MK3	+	□	4,500
Ambience Mod 5.0	+	□	9,550	Magneplanar MG-3.5SE	+	□	3,800
Apertura Athena	+	□	4,395	Magneplanar MG-20 SE P	+	□	10,300
Apertura Atlante	+	□	6,995	Magneplanar MG-20 SE A	+	□	11,000
ATC SCM20A	+	□	3,049	Martin-Logan SL3	+	□	3,499
ATC SCM50	+	□	3,750	Martin-Logan CLS IIz	+	□	4,555
ATC SCM100	+	□	4,499	Martin-Logan Re-Quest	+	□	5,875
ATC SCM50A	+	□	5,250	Martin-Logan Monolith S	+	□	7,440
ATC SCM100A	+	□	5,999	Martin-Logan Monolith IHP	+	□	8,550
ATC SCM200A	+	□	12,999	Martin-Logan Monolith IIHPB	+	□	11,900
ATC SCM300A	+	□	14,999	Meridian DSP5000	+	□	3,295
Audio Note AN-JSE Silver	+	□	7,900	Meridian DSP5000	+	□	5,950
Audio Note AN-ESE Silver	+	□	9,600	Meridian DSP6000	+	□	9,400
Audio Physic Virgo 2	+	□	3,399	M-A Studio 50	+	□	4,000



Take it to 11, Captain! The Jeff Rowland Concentra amp on idle.

M-A Studio 60	+	□	6,000	Jamo SW600e	+	□	530
Naim DBL Active	+	□	7,414	JBL CM6	+	□	200
Neolith NEO 2	+	□	3,499	JBL PSW800	+	□	275
Neolith NEO 3	+	□	4,999	JBL SW 10	+	□	300
NHT Model 3.3	+	□	3,500	JBL PSW1000	+	□	325
Paragon Regent	+	□	3,490	JBL PSW1200	+	□	375
Proac Response 3.5	+	□	4,250	JPW Subwoofer	+	□	130
Proac Response 5	+	□	9,000	JPW SW40	+	□	199
Proac Response 4	+	□	12,000	JPW SW60	+	□	350
Prof Monitor Co MB1P	+	□	4,370	JPW SW-120	+	□	500
Prof Monitor Co BBS A	+	□	16,688	KEF Model 20B	+	□	349
QLN Artec 1600	+	□	5,000	KEF Model 30B	+	□	499
Quad ESL63	+	□	3,450	KEF Model AV1	+	THX	2,499
Rehdeko RK125	+	□	3,200	Kenwood SW500	+	□	250
Rehdeko RK145	+	□	4,800	Keswick Alto	+	□	1,299
Rehdeko RK175	+	□	8,800	KLH ASW10-100	+	□	350
Revel Gem	+	□	5,295	KLH ASW12-120	+	□	380
Rockport Syzygy	+	□	15,000	Linn AV5150	+	□	2,850
Rockport Procyon	+	□	32,500	L Voice RW24	+	□	11,500
Shahinian Hawk	+	□	4,995	Meridian M2500	+	□	1,595
Shahinian Diapason	+	□	8,895	M&K VX-7MKII	+	□	450
Shun Mook Bella Voce	+	□	6,800	M&K V-75 MKII	+	□	650
Sonus Faber Electa Amator	+	□	3,293	M&K V-125	+	□	800
Sonus Faber Extrema	+	□	6,500	M&K V-125 (THX)	+	THX	800
Sound-Lab Dynastat	+	□	3,790	M&K MX-70	+	□	900
Sound-Lab Aura	+	□	6,490	M&K MX-150 (THX)	+	THX	1,500
Sound-Lab Pristine III+	+	□	7,990	M&K MX-200	+	THX	1,800
Sound-Lab A-3	+	□	11,990	M&K MX-300	+	THX	2,500
Sound-Lab Ultimate II	+	□	13,950	M&K MX-5000 (THX)	+	THX	2,900
Sound-Lab A-1	+	□	13,990	Mission 73AS	+	□	450
Sound-Lab Ultimate III	+	□	18,950	Mission 75AS	+	□	548
Sound-Lab Ultimate I	+	□	23,950	Mordaunt-Short T2000	+	□	500
Spendor SP9/1	+	□	3,450	Mus Tec Sub	+	□	650
T+A AD4	+	□	3,940	Muse Model 22	+	□	1,890
T+A AD3	+	□	4,660	Muse Model 18	+	□	3,790
T+A AD2	+	□	8,590	Neat Gravitas	+	□	1,095
Tannoy Edinburgh TW	+	□	3,250	NHT SW2Pi	+	□	609
Tannoy Definition D900	+	□	3,999	Polk PSW50	+	□	350
Tannoy GRF Memory TW	+	□	4,000	Polk PSW150	+	□	500
Tannoy Westminster TW	+	□	6,600	Polk PSW300	+	□	750
Tannoy Canterbury 15 TW	+	□	7,720	REL Q50	+	□	375
Tannoy Westminster Royal	+	□	14,920	REL Q-100E	+	□	495
TDL Ref Standard-m	+	□	6,000	REL Strata II	+	□	575
Triangle Nemo Altair	+	□	4,250	REL Storm	+	□	695
Wilson Audio Cub	+	□	5,495	REL Stadium II	+	□	995
Wilson Audio WATT 5	+	□	8,750	REL Stentor II	+	□	1,800
Wilson Audio WITT	+	□	8,888	REL Studio II	+	□	4,000
Wilson Benesch Actor	+	□	3,800	Revel Sub-15	+	□	2,195
Wilson Benesch ACT1 spkr	+	□	6,400	Revolver The Recoil	+	□	100
SUBWOOFERS							
KEY							
ⓐ - active; includes a dedicated power amplifier.							
THX - THX approved by LucasFilm for use in Home THX installations.							

Acoustic Energy AE10S8	+	□	300	Jamo SW303E	+	□	220
Aiwa TS-W9	+	□	170	Jamo SW400E	+	□	330
Allison Mini Ref Sub	+	□	210	Jamo SW505E	+	□	400
Alon Poseidon	+	□	12,000	Jamo Sub One	+	□	400
AMC B1-20	+	□	350				
ATC SCM 0.1/15	+	□	2,750				
Audio Physic Terra	+	□	3,499				
B&W AS6	+	□	500				
B&W Matrix 800ASW	+	THX	1,500				
B&W Matrix 800ASW	+	THX	1,500				
Boston CR400	+	□	300				
Boston VR500	+	□	450				
Boston VR2000	+	THX	800				
Celestion CS135	+	□	139				
Celestion CSW MKII	+	□	329				
Celestion SiI	+	□	349				
Cerwin-Vega HT-10D	+	□	200				
Cerwin-Vega HT-12D	+	□	250				
Credo SDC 001	+	□	3,054				
GLL LE Bass	+	□	350				
H/K Citation 7.4	+	THX	875				
Infinity SSW-10	+	□	500				
Jamo 860SW	+	□	110				
Jamo SW303E	+	□	220				
Jamo SW400E	+	□	330				
Jamo SW505E	+	□	400				
Jamo Sub One	+	□	400				
TONEARMS							
KEY							
ⓐ - pivoted.							
# - parallel tracking.							
Air Tangent IC	#	□	3,333				
Air Tangent 10B	#	□	7,777				
Air Tangent Ref. Sig.	#	□	11,000				
Audio Note AN-ARM 1	ⓐ	□	169				

Audio Note AN-0s	⊙	795
Audio Note AN-1s	⊙	995
Audiomeca SL5	#	2,500
Clearaudio TQ-1 Improved	#	1,950
Dynavector 507	⊙	1,995
Graham 1.5 Basic	⊙	1,695
Graham Mk 2.0	⊙	2,650
Helius Orion 4 Copper	⊙	549
Helius Cyalene 2	⊙	1,495
Kuzma Stogi	⊙	795
Kuzma Stogi Ref	⊙	1,250
Linn Akito	⊙	500
Linn Ekos	⊙	1,500
Manticore Magician II	⊙	595
Manticore Magician II	⊙	995
Manticore Magician 12	⊙	995
Moth Mk I	⊙	109
Moth MKIII Stainless	⊙	146
Moth Mk III Tungsten	⊙	174
Moth Moth 900	⊙	598
Naim ARO	⊙	1,040
N'ham Space	⊙	450
N'ham Paragon 3	#	550
N'ham Paragon 2	#	800
N'ham Mentor	⊙	800
N'ham Foot	⊙	1,100
N'ham Paragon 1	#	1,600
Rega RB250	⊙	109
Rega RB300	⊙	174
Rega RB900	⊙	598
Rockport Series 7000	#	6,000
Roksan Tabriz	⊙	320
Roksan Tabriz Zi	⊙	420
Roksan Artemiz	⊙	895
SME 3009 Ser II Imp	⊙	309
SME 3009 S2 Ser II Imp	⊙	338
SME Series II 3009-R	⊙	514
SME Series II 3010-R	⊙	526
SME Series II 3012-R	⊙	565
SME 309	⊙	689
SME 310	⊙	705
SME 312	⊙	802
SME Series IV	⊙	983
SME Series V	⊙	1,461
Wheaton Music Tri-Planar 4i	⊙	3,000
Wheaton Music Tri-Planar 5i	⊙	3,250
Wilson Benesch Act 0.5	⊙	795
Wilson Benesch ACT1 Std	⊙	950
Wilson Benesch ACT2	⊙	1,350
Zeta AS	⊙	469
Zeta VDH	⊙	549



Acoustic Precision Eikos CD player — £1,800 worth of digital dreadnought.

TUNERS

KEY

'P20' - (etc.) number of presets.

RDS - Radio Data System; receives text information on station, programme type etc.

AMC T7	P30	130
Arcam Alpha 7	P24	230
Arcam Alpha 8	P24	280
Arcam Delta 280	P20	300
Audiolab 8000T	P39	800
Aura TU80	P30	350
AVI S2000MT	P16	599
AVI S2000MT2	P99	799
Carver TX-8R	P20	469
Creek T43	P68	399
Day Sequerra FM Ref		5,937
Day Sequerra S B'dcast Mon		14,640
Denon TU-260L	P20	120
Denon TU-215RD	P40	150
Denon TU-425RD	P40	200
H/K TU930	P30	150
H/K TU950	P30	200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P30	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dynalab FT11		550
Magnum Dynalab FT-101A		825
Magnum Dynalab Etude		1,250
Magnum Dynalab 108		4,500
Marantz ST-57	P59	150
Marantz ST-65	P59	200
Marantz ST-17	P60	600
Meridian 504	P30	695

Michi RHT-10	P16	895
Micromega Minium FM Mk2	P39	329
Micromega Tuner	P39	750
Mission Cyrus FM7	P29	400
Musical Fidelity E50	P20	300
NAD 412	P24	190
NAD 414RDS	P24	250
NAD 710	P30	270
NAD 712	P24	330
Naim NAT03		595
Naim NAT02		1,080
Naim NAT01		1,730
Onkyo T 4210RDS	P30	180
Onkyo T 409	P30	230
Onkyo T 411RDS	P30	260
Pioneer F-204RDS	P30	140
Pioneer F-504RDS	P40	250
Pioneer F-504RDS Precision	P40	300
Quad 77FM	P25	700
Rega Radio	P24	229
Roksan Caspian	P50	495
Rotel RT-935AX	P20	160
Rotel RT-990BX	P16	500
Sony ST-SE200	P30	100
Sony ST-SE300	P30	120
Sony ST-SE500	P30	140
Sony ST-SE700	P30	180
Sony ST-SA3ES	P30	250
T+A T1200R		745
TEAC T-R400	P20	120
TEAC T-H500	P30	170
TEAC TB-X10	P20	400
Technics ST-GT350L	P30	130
Technics ST-GT550L	P39	180
Technics ST-GT650L	P39	230
Thorens TRT-2000	P59	499
Yamaha TX-480L	P40	100
Yamaha TX-492RDS	P40	130
Yamaha TX-590RDS	P40	180

TURNTABLES

KEY

⊙ arm included.

☑ cartridge included.

Up to £500

Audio Note AN-TT 1	⊙	349
Dual CS435-1	⊙	150
Dual CS455	⊙	190
Dual 505-4 UK	⊙	250
Eclipse TT430	⊙	70
Genexa Lab-710	⊙	60
Genexa Lab-810	⊙	70
Kenwood KD-492F	⊙	100

Michell Mycro		435
Moth Alamo	⊙	199
Moth Kanoot Mk1 Arm	⊙	279
Moth Kanoot Mk3 Arm	⊙	329
NAD 533	⊙	220
N'ham Interspace	⊙	500
Pioneer PL-J2500-C	⊙	80
Pioneer PL-990	⊙	130
Pro-Ject 0.5/OM10	⊙	160
Pro-Ject 1/510	⊙	200
Pro-Ject 2/520	⊙	300
Pro-Ject 6/MC15	⊙	450
Rega Planar 78	⊙	214
Rega Planar 2	⊙	214
Rega Planar 3	⊙	274
Roksan Radius	⊙	470
Shorwood PM8550	⊙	130
Sony PS-LX150H	⊙	90
Sony PS-LX300H	⊙	150
Systemdek I/920	⊙	136
Systemdek IIX/900	⊙	230
Systemdek I/920/Moth	⊙	235
Systemdek IIXE/900Ap	⊙	388
Systemdek 960	⊙	500
Systemdek 2X2	⊙	500
Technics SL-J110D	⊙	120
Technics SL-BD20	⊙	160
Technics SL-BD22	⊙	180
Technics SL-1210MkII	⊙	400
Technics SL-1200MkII	⊙	400
Thorens TD-180 AT91	⊙	190
Thorens TD-280 VI/UK	⊙	210
Thorens TD-166 VI/UK/RB	⊙	400
Thorens TD-318 III TP50	⊙	500

Audio Note AN-TT 2		995
Audio Note AN-TT 3		1,995
Audiomeca Romance	⊙	1,895
Audiomeca J1	⊙	3,500
Basis 2001		2,750
Basis Ovation II		4,800
Basis Debut Gold Std III		7,200
Basis Debut Gold Vacuum		9,250
Chantry QT Level 2	⊙	705
Clearaudio Evolution	⊙	1,790
Clearaudio Reference	⊙	3,990
DNM-Reson Rota 1	⊙	3,900
DNM-Reson Rota 2	⊙	5,600
Impulse Moskito	⊙	695
Kuzma Stabi	⊙	1,950
Kuzma Stabi Reference	⊙	3,750
Linn LP12 Basic	⊙	1,100
Linn LP12 Lingo	⊙	1,750
Manticore Mantra 97	⊙	595
Manticore Mantra	⊙	895
Manticore Magister	⊙	4,400
Marantz TT-1000	⊙	6,000
Michell Gyrodek	⊙	825
Michell Orbe	⊙	1,950
N'ham Spacedeck	⊙	750
N'ham Graphic	⊙	1,200
N'ham HyperSpacedeck	⊙	1,500
N'ham Mentor	⊙	2,600
N'ham Anna Log	⊙	5,500
Oracle Paris	⊙	1,100
Oracle Delphi	⊙	3,370
Oracle Delphi 15th Anni	⊙	3,800

Pink Triangle Tarantella	⊙	575
Pro-Ject 6/Sumiko	⊙	850
Rega Planar 9	⊙	1,598
Reson RSLM	⊙	3,900
Reson Rota 1	⊙	6,000
Rockport Capella II	⊙	7,000
Rockport Sirius III	⊙	50,000
Roksan TMS	⊙	2,750
SME Model 20/2	⊙	4,463
SME Model 20/2A	⊙	3,000
SME Model 30/2	⊙	10,675
SME Model 30/2A	⊙	12,135
Stratosphere ST1	⊙	6,500
Technics SL-1200LTD	⊙	700
Thorens TD-146 VI TP50	⊙	550
Thorens TD-2001 TP90	⊙	700
Thorens TD-520 SME	⊙	1,050
Well Tempered Record Player	⊙	1,850
Well Tempered Classic	⊙	2,980
Well Tempered Super	⊙	3,900
Well Tempered Reference	⊙	5,300
Wilson Benesch Circle	⊙	795
Wilson Benesch WB Turntable	⊙	1,775
Wilson Benesch Full Circle	⊙	1,995

Remember that all entries printed in **RED** refer to hi-fi products that we have reviewed. Turn to page 106 for a full summary of test results!



Do you want to choose your hifi in a comfortable and relaxing environment . . . ?

Do you want friendly and helpful advice (and a cup of tea) . . . ?

Do you want to buy your system based on what you hear (and not what somebody tells you) . . . ?

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Nobody else in these areas stocks all the following major brands: Acoustic Energy, Arcam, Audiolab, Aura, B&W, Cyrus, Epos, DPA, Harman Kardon, Heybrook, Infinity, JPW, KEF (Reference), Linn Products (including records), Marantz, Meridian, Mission, Musical Fidelity, NAD, Nakamichi, Onix, Pioneer, PROAC, QED (Systemline), Quad, Rega, Revox, Rogers, Rotel, Sony, Sound Org, Target, T.D.L., Yamaha (including Home Cinema Systems) & Top Tape.

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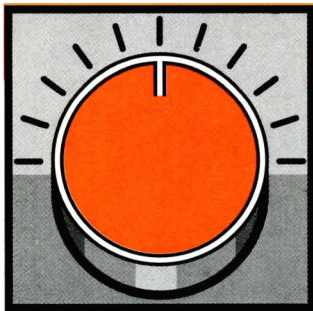
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Amplifiers Brought to you in association with **audio research** HIGH DEFINITION™

The amplifier sits at the heart of the system, processing the outputs from 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, but become separated into preamps and power amplifiers. Even separate power supplies become increasingly common as one moves upmarket. Bear in mind that output power and sound quality are not necessarily

related. Some of the finest amplifiers available have outputs as low as 12 Watts, but team them with high-efficiency loudspeakers and you can achieve loudness aplenty. Power output is equally no indication of sound quality.

B Best buy

R Recommended

KEY	MC PHONO INPUT:	POWER OUTPUT (W):	RECEIVER:	FACTSBACK NUMBER:	ISSUE NUMBER:
LINE INPUTS: Amount of input sockets for non-vinyl sources such as CD players, tuners and cassette decks.	If an amp has a vinyl phono input for moving coil (low output) cartridges.	Lab tested power output in Watts per channel.	If an amp has a built in radio tuner.	The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
MM PHONO INPUT: If an amp has a vinyl phono input for moving magnet (normal output) cartridges.	If an amp is couch potato ready.				
	HEADPHONE SOCKET: If an amp is can be friendly.				

INTEGRATED AMPLIFIERS

Product	Price (£)	Comments	LINE INPUTS	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	RECEIVER	FACTSBACK NUMBER	ISSUE NUMBER
Alchemist Maxim	319	Vivid and colourful sounding amp that's just too bold and brassy	5	●				30		1737	154
Alchemist Kraken APD6A	579	Compact, with Darth Vader styling, yet sound quality is surprisingly meek and mild, despite strong midband dynamics	5	●				55			175
Alchemist Nemesis	700	Good if ultimately undistinguished amplifier whose strengths include warmth, authority and distinctive aesthetics	6					80			168
AMC 3025a	130	Surprisingly potent and easy on the ear, if not especially analytical. Classic bargain basement material in fact.	4	●	●	●	●	30			171
AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	45			167
AMC CVT3030a	400	Beer-budget valve amp, with quintessentially valve-like virtues (euphony with dynamics) and vices (system dependency, noise)	6				●	30			168
Arcam Alpha 7	260	Decent, if slightly system-fussy amplifier that generally pulls all the right strings	5	●				40			167
Arcam Alpha 8	360	Enjoyably soft-centred amp, won't frighten the animals. Upgradeable via preamp output, and R/C (not supplied)	5	●				50		1853	162
Arcam Alpha 9	500	Not quite as much a star as the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7			●	●	70			168
Audio Analogue Puccini	450	Superbly finished, the new entry-level Audio Analogue performs way out of its class	5	●	●			40			175
Audio Innovations Alto	300	Probably because of a lack of deep bass, this stylish amp sounds open, natural and relaxed	6					35		1540	138
Audio Note Ongaku	56,000	A single-ended, zero negative feedback triode, line-level amplifier and a half. Probably the best amplifier in the world	3					26			C91
Audio Note Oto SE	1,500	Transparent, dynamic, clear and subtle, but limited power	4					24			126
Audiolab 8000LX	470	Well built, minimalist entry level model ultimately lacks bottle and pizzazz	6				●	60			175
Audiolab 8000A	500	The 8000A remains a highly disciplined and mature-sounding amp	5	●	●		●	60		1581	140
Audiolab 8000S	700	Informative in every sense, only a slight lack of bite detracts. Perhaps Audiolab's best yet!	6			●	●	60		1740	154
Aura VA100 II	350	Big and smooth, yet slightly disjointed sound was equally familiar	5	●			●	70			1541
AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5				●	100			175
Bryston B-60	1,249	Build quality can't be faulted, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5				●	60			175
Cambridge Audio A3i	200	Maximum information design, with plenty of usable and reasonably refined power. A snip	4	●				60			167
Copland CSA8	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5					60			168
Copland CSA14	1,199	Great sound and looks, but watch out for high capacitance cables	4	●				60			1416
Credo IMP702	850	Old fashioned looking, but bags of clarity and precision, though it can sound brash in the wrong system	5					70			175
Creek 4330	279	Compact, even pretty, but sounds dark and uninviting, with coarse treble and woomy bass	5					40			171
Denon PMA-250SE	160	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5				●	30			171
Denon PMA-350SE	200	Reinvented in the minimalist tradition, the new SE model is a control freak, but can sound wonderful	5				●	50		1856	162
Denon PMA-425R	230	Well-equipped and generally enjoyable but slightly ragged performer. You can do better	3	●			●	45			167
Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●	●	●	97		1802	157
Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch outside its weight, but check to ensure it will complement the rest of your system	5					60			175
DPA Renaissance	595	DPA's first integrated amp is typically innovative, but a little too 'crisp 'n dry' for our tastes	5	●			●	40		1582	140
EMF Audio Sequel	450	Relaxed and restrained design from Mike Creek	5	●			●	50			109
Exposure XX Super	700	Rather transistorised, unexciting sound. Good coherence and rhythm. Best played loud	6					55		1743	154
Electrocompaniet EC1-2	995	A 50 watt amplifier which sounds more powerful, and makes real sounding music in real sounding acoustic spaces	4					50			175
Gamma Acoustics Gemini	699	Genuine single-ended triode design, but low power, mundane sound and poor build	3					12		1416	148
Harman/Kardon HK610	180	Lively and friendly sound, but could prove too exciting for the faint hearted	6	●			●	30		1465	149
Harman/Kardon HK620	250	Capable and musical amplifier which is among the nicest available at the price. Optional add-in MM/MC board available	6				●	40		1858	162
Harman/Kardon HK640	400	Breezy, nimble sounding amp, lacks grip and fortitude – it can sound artificial and insubstantial	6				●	55		1542	138
JoLida 202	695	Well-built and technically accomplished, affordable valve integrated with subtle and refined, if not quite gripping sonic performance	4					40			168
JVC AX-V4	200	Respectable performance for a Pro-Logic AV amplifier. Lacks resolution and sparkle, though	5	●			●	63		1805	157
JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5	●			●	45		1466	149
Kenwood KA-3020SE	200	Not a brilliant phono stage, but this is a lively, exuberant sounding amp via CD	5	●			●	50		1130	134
Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsubtle performance	5	●	●	●	●	65			171
Krell Digital KAV-300i	2,550	EISA Award winner with balanced inputs and AV friendly outlook, sound is confident and three-dimensional (Statements)	5					150			1825
LFD Integrated Zero	549	Lively and brisk, but at the same time cold and unsympathetic	6					50		1584	140
Linn Majik (Phono)	800	The cornerstone of Linn's modular hi-fi system is innovative, but sounds vague and confused	5	●	●		●	33		1013	129
Magnum IA120	265	Mirror finish amplifier with a bold, colourful delivery, but needs careful system matching to avoid loss of focus and clarity	6				●	65			171
Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour and dynamics well	6				●	96		1260	142
Magnum IA-200	599	Sweet, valve-flavoured solid state amplifier flatters where it doesn't cast light. Note: power output listed is peak	7					100		1860	162
Magnum Class A	690	Lashings of rich and compelling music, but the Class A trades lushness for accuracy	4	●	●			60			116
Magnum Class A SE	795	A MOSFET amplifier that draws its inspiration from the world of valves, the Magnum is an erratically refined, detailed amplifier	5	●				80			175
Marantz PM-57	200	Well equipped but ultimately anodyne amplifier which lacks for nothing but star quality	5	●			●	50			171
Marantz PM-66SE	230	A bit lush, and power output is limited, but it communicates well and gives airy, large-scale music. An excellent budget buy	5	●		●	●	50			167
Marantz PM66 KI-Signature	400	An amplifier that knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●		●	●	50			168
Mission Cyrus IIIi	598	Beautifully presented, but mid-dominated balance and other anomalies were not liked. Upgradeable using PSX unit PSU	6	●			●	50		1854	162
Mission Cyrus SL	398	Sharp, articulate amplifier, and superb, outgoing midband with lean though well-extended bass – and build quality to die for	6					50			168

POWER AMPLIFIERS (CONTINUED)

Product	Price(£)	Comments	MM PHONO INPUT	MC PHONO INPUT	HEADPHONE SOCKET	REMOTE CONTROL	POWER OUTPUT(W)	FACTSBACK NUMBER	ISSUE NUMBER	RECEIVER
Audio Research VT60	2,395	Ranks as 'must try' American cultural item (tested in Statements). Tube design	1				35	1179	136	
Copland CTA-505	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1				67	1630	151	
Cyrus Power	498	Tested with Cyrus Pre. Punchy, light footed character with a sense of substance and natural warmth (bridgeable)	1				50		155	
Densen DM-30	1,200	Fluid, valve-like power amp with effortless resolution and a slightly dark balance (Statements)	2				100		164	
EAR 509 Mk II	3,699	Combining sonic strengths of transistors and valves, this amp warrants attention (tested with 802)	1				100		63	
ECA Lectern	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1				50	1302	145	
Exposure XVIII Super	849	Slight dullness and hardness, but great 'boogie factor'	1				70		142	
Jadis JA-30	5,980	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange (tested with £5,978 JP30)	1				30		60	
LFD Mistral Power	449	Infectious upper band vitality, but LF dynamics lacking, and lacks 'grip' and transparency	1				60		165	
Meridian 555	750	By providing an open window on the music, this amp is wide open to RF and low level IM distortions	1				60	1303	145	
Meridian 557	1,400	Hefty British lump with balanced inputs and a transparent, nimble sound with no shortage of power (Statements)	1				200		162	
Michell Alecto	1,150	Open, well focused imagery with natural, refined textures	1				50		165	
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse, not comfortable with difficult speaker loads	1				60		165	
Moth 30 Series Monoblocks	879	Tested with Active Preamp. While demonstrating solid, even balance it proved adept at delivering vital musical qualities	1				100		155	
Muse Model 160	2,290	Transparent muscle amp with minimal character and a natural performer in both scale and tone (tested in Statements)	1				160		166	
Musical Fidelity FX2	800	Quality build and imposing presentation is married to strong power yield, tonal colour and finesse	1				100		165	
Musical Fidelity X-A50	500	Cleverly configured and attractively packaged, open, lively and engaging sound. Reviewed with X-PRE	1				50		175	
Myriad MA120	450	Based in M120 integrated – see for comments, but sounds significantly better when bi-amped with M120	1				60		165	
NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1				80		165	
Naim NAP90	450	Power amp from a Nait integrated with some improvements	1				30		165	
Quad 77 Power	600	Open, bold and colourful, with mild compression	1				85		165	
Rega Exon	1,196	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1				125		165	
Rotel RB-970BX MkII	225	Tested with RC970BX MkII in Sessions (see preamp section)	1				60		144	
Rotel RB-980BX	450	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound (tested with RC980BX)	1				120		155	
Sumo Polaris III	950	Tested with Athena IIB. Big, natural and tidy-sounding with very natural reproduction of acoustic and electric instruments	1				164	1305	145	
Talk Tornado 2	599	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1				65		165	
Thorens TTA2000	599	Low power shoe-box format, but gutsy and surprisingly subtle and articulate	1				30		165	

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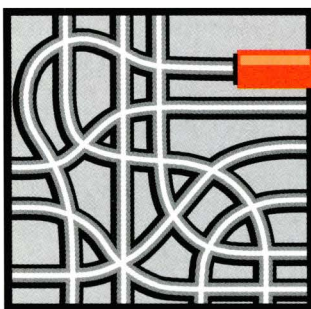
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Cables

Cables are not just accessories, but an integral part of a system. Inevitably some cables are better than others. The best cable for your system will only be found through trial and error, but by combining our recommendations with those of a dealer, you will end up with something suitable. Generally speaking, budget to spend about 10 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.

- Digital interconnects connect CD transports to DACs, and are traditionally coaxial with a 75 Ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass. The prices shown are for a terminated linear metre.

- Speaker cables are used between the amplifier and speaker. Our prices are per un-terminated metre. Termination (plugs and soldering) costs vary with brands.

B Best buy

R Recommended

KEY	SOLID CORE:	COPPER:	SILVER:	DIG CABLE TYPE:	FACTSBACK NUMBER:	ISSUE NUMBER:
SYMMETRICAL: A twisted pair of conductors.	Single or multiple, individually insulated strands.	Material used for conductor.	Material used for conductor.	0 - optical digital, E - electrical digital.	The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	The issue of Hi-Fi Choice in which the original review appeared.
COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.						
STRANDED: Multiple strands with no intervening insulation.						

CABLES

Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK NUMBER	ISSUE NUMBER	RECEIVER
Analogue Interconnects											
Audio Note AN-A	18	Not especially impressive, warm but well-rounded balance that restricts 'air' but is not unclear									108
Audio Note AN-C	35	Neutral but lacking in subtle texture and unable to distinguish fine detail									1687 131
Audio Note AN-S	99	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass									1687 131

CABLES (CONTINUED)

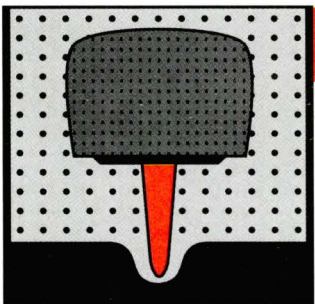
Product	Price(£)	Comments						ISSUE NUMBER	DIG. CABLE TYPE		
			SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER				
Audio Note AN-V	179	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable	●		●			●	1687	131	
Audioquest Turquoise	40	A 'fit and forget' cable that sounds distinctly lazy	●		●			●		160	
Audioquest Topaz 2	60	Sounds flattened out, with poor imaging and grainy treble					●	●		176	
CableTalk Advanced 2	35	Slight roughness in loud music barely detracts from a well-balanced performance with good imaging			●			●		176	
Cable Talk Studio 2	65	A first-class performer from tonal, dynamic and rhythmic standpoints	●		●			●		160	
Cambridge Pacific	30	Lacks subtlety and bass impact but is otherwise quite serviceable for the price			●			●		176	
Cambridge Audio Studio Ref	40	Dynamic cable with strong soundstaging and only a slight lack of detail			●			●		160	
Chord Company Cobra 2	49	Good, strong sound with full-bodied music, less happy with smaller forces					●	●		176	
Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	●		●			●		160	
DNM TCC75	34	Price for 0.75m length. High resolution cable, but best in short runs due to higher than average series impedance					●	●	1690	131	
DPA Slink	41	Slightly bright and zingy sound with flat soundstaging and hollow sounding bass, vocals and strings sound convincing though					●	●	1690	131	
DPA White Slink	75	Bass recedes as the music gets complex; midrange and treble better with quite good detail and imaging					●	●		176	
DPA Black Slink	245	Initially dark and meaty but becoming lucid and transparent with running in. Quad geometry, Gore-tex dielectric	●				●	●	1691	131	
Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB review sample 0.5m)	●				●	●		176	
Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness			●			●		176	
Ixos 104	20	Open and detailed presentation, full bass and silky if overly smooth treble			●		●	●	1692	131	
Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though	●		●			●		176	
Ixos 103	45	Even-handed and generous sound, bass has a well-rounded, bouncy quality			●			●	1692	131	
Ixos 102	60	A bit bright and undynamic, this cable is nevertheless a good all-rounder, whose faults are largely subtractive			●			●		160	
Ixos 101	100	A cable with personality, its veiled and shut in quality brings an earthiness to vocals and rhythm guitar alike			●			●	1693	131	
Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	●		●			●		176	
LFD Spirolink I	35	Price for 0.7m length. Dynamic but smoothly detailed performance, but gives the impression of looking down on the music					●	●	1694	131	
Moth Ley Line Black	100	Offers a full and big sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●		●			●		108	
Moth Ley Line Grey	200	Detailed enough but there's a sense of distance between the music and the listener, vox are coarse rather than liquid	●		●			●		108	
Nordost Black Knight	60	Flat black cable that is distinctive but slightly coloured – but not in a wholly negative manner	●		●			●		160	
Nordost Blue Heaven	135	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	●		●			●		176	
Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness			●			●		176	
PAD Elementa	145	A fat, heavy and frankly rather lazy-sounding cable; best with music for small forces	●		●			●		176	
QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value					●	●	176		
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight			●			●		160	
SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. Unsure about the flesh-coloured finish though...	●		●			●		160	
SonicLink Black	49	Encourages an upbeat and snappy sound that's driven by leading edges, full and rumbustious bass maintains an even tempo			●			●	1699	131	
Sonic Link Black	50	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration.	●					●		176	
Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss			●			●		176	
van den Hul The Storm	25	Price for 0.8m length. Rich and warm but bass is rolled off, however there's plenty of drive and high frequencies are clean			●			●	1701	131	
van den Hul Source HB	30	Price for 0.8m length. Hybrid carbon-fibre/copper cable that is a paragon of naturalness. Airy and well controlled			●			●		160	
van den Hul D102 MkIII	70	A cable with everything; good bass, treble, imaging and naturalness					●	●	176		
van den Hul The First	125	Using 12,000 carbon fibres, a gentle and subtle sounding cable that conveys oodles of information but lacks dynamic punch			●			●	1702	131	
van den Hul The Second	240	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●					●	1702	131	
XLO Type 150	50	A restrained but useful cable for taming lively CD players, dynamics lack freedom, treble lacks clarity			●			●	1703	131	
XLO Type 0.1	180	Unusual but highly expressive and detailed with a hint of graininess on powerful vocals					●	●	1703	131	
Digital Interconnects											
Audio Note AN-V	110	Ostensibly an analogue cable but gives a meaty and natural performance when used for digital duty	●					●	E 1704	131	
Audioquest Optilink Z	179	Good level of midband detail but frequency extremes lack depth and extension						●	O	108	
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear cut transparency			●			●	E	108	
Bandridge AL4900G	40	Lacks deep rounded bass and treble is coloured with a spittiness, a little rough and ready					●	●	E 1705	131	
Chord Codac	32	A connection with a stranded inner core and a sound that lacks integration			●			●	E	108	
Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz			●			●	E 1706	131	
DPA Opti-link	20	Very similar to Bandridge AL560; sound is lacklustre						●	O	108	
DPA Digi-link	28	Can seem slightly impassive but there's no avoiding its exceptionally detailed sound			●			●	E	108	
Ixos 105	25	Extended but soft-edged treble that's mercifully free of fatiguing colourations, plenty of weight, smooth vox			●			●	E 1707	131	
Kimber Kable Opti-link	40	Appears to be a bog-standard PMNA fibre, yet sounds a little brighter and livelier than most						●	O	108	
Moth Leyline Datalink	140	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive			●			●	E	108	
QED DigiFlex	20	A top performance, low-loss 750hm coax with a very open, almost liquid quality			●			●	E	108	
Siltech HF-6	145	Sounds detailed, very clean and very extended, but bass is less well resolved - a treat for high-end systems			●			●	E 1709	131	
SonicLink Green	60	Spacious, positive and engaging if a bit over crisp at times, very compelling however			●			●	E 1709	131	
van den Hul The First	120	Exceptionally natural albeit slightly dark or cautious compared to some, plenty of subtle information and beautiful integration			●			●	E 1710	131	
Loudspeaker Cables											
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather grippy and forward						●		109	
Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical						●		1711	133
Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel which was happy to accept its foibles	●					●		1712	133
Audio Note AN-SP	150	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity	●					●		109	
Audioquest F-14	2.2	Ideal for laying under carpets, F-14 encourages a slightly warm and vibrant sound						●		109	
Audioquest Type 4	5	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains the cable's 'bite'	●		●			●		109	
Audioquest Crystal	25	Neutral balance is spoiled by some graininess and smearing	●		●			●		168	
Bandridge SF LC1070	42p	Basic figure 8 bellwire, lightweight balance and a softness that dilutes even the strongest bass	●		●			●		1713	133
Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings						●		1800	157
Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●					●		168	
Cable Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained						●		1800	157
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension	●					●		168	
DNM LSCB500	13.90	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire						●	1716	133	
DPA Black Sixteen	100	Unflappable resolution of fine musical details, there's no dampening of dynamics, simply oodles of taut information	●					●		1717	133

CABLES (CONTINUED)

Product	Price(£)	Comments	SYMMETRICAL		SOLID CORE		COPPER		FACTSBACK NUMBER	ISSUE NUMBER
			COAXIAL	STRANDED	COPPER	SILVER				
Gale XL189	1	Slightly bright and not that subtle, but a perfectly acceptable cable for any starter system	●	●	●				168	
Gale XL315	2	A little lacking in detail but plenty of life and excellent value			●	●	●		1800	157
Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative			●	●	●		1800	157
Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●		●	●	●			168
Heybrook Heywire	3.5	This well-meaning facsimile of earlier ribbon cables ends up sounding lumpy and uneven				●	●			109
Ixos 603	2	Big and expansive-sounding cable, full and engaging while retaining a high degree of neutrality			●	●	●		1718	133
Ixos 604	5	Midrange is detailed and surprisingly smooth but treble is hard and synthetic and the bass no better			●	●	●		1719	133
Kimber 4TC	19.6	A well-balanced cable with good performance in all areas	●		●	●	●			168
Kimber 4TC Double-wire	140	A variation on a Kimber classic which produces a rich and weighty sound, but isn't quite as transparent as single runs			●	●	●			133
Mission Quartet	3.9	Mixed, inoffensive sound, adds guttural resonance to vocals and could be generally more coherent. Bi-wire				●	●		1722	133
Naim NACA 5	5.5	Described as a 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems. But it works a treat in them			●	●	●			109
Nordost Octava	3	Fair bass but confused treble and some coloration	●			●	●			168
Ortofon SPK100	3	Grey-sounding and strips instruments of their natural richness and resonance, a bit bass shy too				●	●			133
Ortofon SPK300	8	Tremendously open and atmospheric with robust full blooded bass, and dynamic too if slightly bright at times			●	●	●			133
Puresonic 7845	1.95	Big, weighty sound — but too messy and bloated for its own good			●	●	●		1800	157
Puresonic 7891	2.85	Chunky cable design, shame about the sound quality	●		●	●	●		1800	157
QED Qudos	2.25	Despite high-tech design and excellent Air-Loc plugs, the music failed to gel			●	●	●		1800	157
QED Profile	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding				●	●			168
QED Profile 8	6.5	Sophisticated flat cable that lacks decent bass and get up and go			●	●	●		1800	157
Silver Sounds 12 gauge	15	Basic 'homemade' construction gives fairly neutral sound, though not outstandingly competitive	●		●	●	●			168
Sonic Link S300	18	Happiest with simple music; tends to smudge detail in complex pieces	●		●	●	●			168
SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced			●	●	●		1800	157
Tech+Link OFC79	1.5	Bargain basement cable that sounds cosy, but suffers from a wobbly bass			●	●	●		1800	157
van den Hul The Clearwater	7	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable			●	●	●			109
van den Hul CS122	12	Smooth and articulate with superb focus and control, its sheer coherence makes it a winner (tested in Sessions)			●	●	●			153
van den Hul The Magnum	38	Touted as vdH's most prestigious twinlead cable, Magnum sounds soft and old fashioned			●	●	●			109
van den Hul The Wind	40	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass!			●	●	●			109
van den Hul Revolution	76	Silver-plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble			●	●	●		1726	133
XLO Pro Type 625	4	Lively but natural and relaxed-sounding but a hint of congestion at frequency extremes			●	●	●		1726	133
XLO Pro 600	16.60	Basically neutral tonality but can become aggressive and two-dimensional	●		●	●	●			168

FOR MORE IN-DEPTH INFORMATION ON REVIEWED PRODUCTS, CHECK OUT OUR WEB SITE AT WWW.HIFICHOICE.CO.UK

HIFI CHOICE



Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low and very low output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono input equipped valve designs need a

transformer to cope with MC cartridges. Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs benefit in overall balance from optimised amplifier capacitance loading.

B Best buy **R** Recommended

KEY	MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.	MC: Moving coil cartridge with a low output only suitable for high-	sensitivity vinyl disc amplifier inputs.	REPLACEABLE STYLUS: Most MM cartridges have a stylus that can be removed and replaced.	OUTPUT (MV): Cartridge output in millivolts.	MASS (g): Cartridge mass can affect arm choice.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
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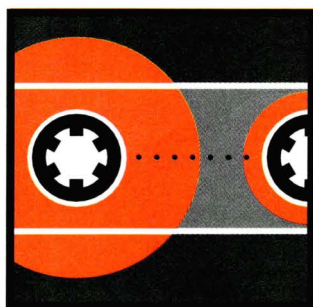
CARTRIDGES

Product	Price(£)	Comment	REPLACEABLE STYLUS		OUTPUT (MV)	MASS (g)	FACTSBACK NUMBER	ISSUE NUMBER
			MM	MC				
Audio Note Iv Iv	1,695	One of the best, giving an extraordinarily relaxing midrange clarity. Needs a transformer	●		0.1			100
Audio Technica AT-95E	19	Clear and dynamic, though richly balanced	●		2.8			48
Audio Technica ART-1	944	This is a delicate and very fluid-sounding MC that tracks well!	●		0.4		9	72
Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy			0.55	11.5		175
Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well			1.0	6		48
Denon DL160	90	Although listeners just preferred the 110, its brother here survived lab tests and is still 'thoroughly competent'			0.1	6		43
Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail			0.1	6		103
Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether and a bargain too			●			103

REPLACEABLE STYLUS
MM MC
FACTSBACK NUMBER
OUTPUT (MV)
MASS (g)
ISSUE NUMBER

CARTRIDGES (CONTINUED)

Product	Price(£)	Comment	MM	MC	Output (MV)	Mass (g)	Issue Number
Dynavector Karat 17D2 mk2	449	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent	●	●	0.15	5.3	158
Dynavector Te-Kaitora	1,698	A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk	●	●	0.25	8.5	175
Dynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm	●	●	0.25	12	84
Dynavector XX-1	998	Good, but not immensely competitive at the price, and not helped by comparison with the low output version	●	●	2.0	12	84
Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body	●	●	5.0	7	67
Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency colouration apparent	●	●	6.5	7	85
Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved	●	●	6.5	7	85
Goldring Eroica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative	●	●	0.5	8	84
Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively though	●	●	6.5	6	91
Goldring Elite	220	The basics are right, and it will cheerfully tackle any source material, but its sound has a certain dirtiness	●	●	0.5	8	103
Goldring Excel VX	525	Good bass drive but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end	●	●	0.45	8	175
Grado Prestige Gold	150	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	●	●	4	6	158
Grado Reference	995	Loads of tracking headroom but treble is limited. A prospect for mid-oriented valve amp users	●	●	1.7	6.5	175
Linn K9	125	Linn improved this model by beefing up the Basik's bodywork and adding a super stylus	●	●	4.5	5	Col
London Decca Maroon	259	Now manufactured under the London brand name, this Decca cartridge is as iconoclastic as ever	●	●	5.0	6	67
London Decca S Gold	339	Immediate and detailed, but coloured, nonlinear with a questionable effect on records	●	●	5.0	6	84
Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed	●	●	0.3	7	158
Lyra Clavis Da Capo	995	A stable tracker, and one of the finest cartridges we've heard	●	●	0.1	7	143
Lyra Parnassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak	●	●	0.22	10.5	175
Ortofon 510/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●	●	3.0	5	85
Ortofon 520/P	65	Sensitive to load capacitance, the 520/P has a lively, effervescent sound	●	●	3.0	5	67
Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle – take it as it comes	●	●	3.3	4	103
Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up	●	●	0.35	7	103
Ortofon MC25E	180	An excellent upgrade for a mid-price turntable	●	●	0.5	11	139
Ortofon MC25FL	249	A bit too stark and honest, but faithful to what's on the LP	●	●	0.5	11	139
Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings	●	●	0.5	10.7	158
Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound	●	●	0.25	8.5	175
Ortofon MC3000II	1,100	A real eye-opener. Nothing to criticise anywhere, one of the very best	●	●	0.12	10	84
Ortofon MC5000	1,500	Limited tracking ability, bright and forward sound, but good stereo	●	●	0.12	10	91
Rega Bias	39	Difficult to mount in some arms due to its shallow build, the Bias offers a gentle, refined sound	●	●	5	4	67
Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●	●	5.0	5	67
Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●	●	6.5	5	91
van den Hul MM-1	250	If woody midrange could be tamed, imaging and security would pull it through	●	●	5.5	6	103
van den Hul DDT-II	600	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy	●	●	0.35	7.6	158
van den Hul MC-10	799	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass	●	●	0.4	6	60
van den Hul MC-One	900	This extended all the positive qualities of the 10, but added greater authority and scale – worth all the extra money	●	●	0.4	6	60
van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal	●	●	0.4	6	72
van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals, this delicate and subtle performer has great charm	●	●	0.65	7	175
van den Hul G' hopper IIIGLA	2,800	Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	●	●	0.4	6	122
Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive	●	●	0.58	6	158
Wilson benesch Carbon	1,572	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound	●	●	0.45	7	175



Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but they all use it.

There should be no problems 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.) Twin decks offer the option to dub tapes and play two cassettes

sequentially. Autoreverse is a useful feature, but usually implies some mechanical compromise. Useful facilities include tape monitor switching and Dolby S.

Best buy

Recommended

KEY							
DOLBY C:	A rather extreme noise-reduction system not usually associated with high sound quality.	for cassette recording.	AUTOREVERSE:	Automatically plays both sides of the cassette.	FACTSBACK NUMBER:	The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	
DOLBY S:	A desirable derivative of the Dolby SR professional noise-reduction system.	3-HEAD:	If you want to monitor a recording while you are making it, a third head is essential.	AUTO CALIBRATION:	The deck will automatically set up bias and EQ for any tape.	ISSUE NUMBER:	The issue of Hi-Fi Choice in which the original review appeared.
DOLBY HX-PRO:	System designed by B&O to extend headroom	TWIN DECK:	Contains two decks for dubbing and continuous play. In most instances only one deck will record.	ADJUSTABLE BIAS:	Bias can be manually set to suit the tape being used.		

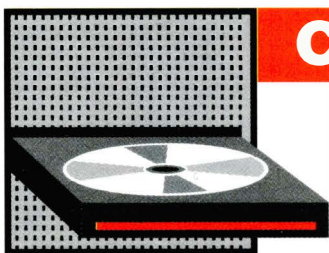
CASSETTE DECKS

Product	Price(£)	Comments	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	AUTO CALIBRATION	AUTOREVERSE	ADJUSTABLE BIAS	FACTSBACK NUMBER	ISSUE NUMBER
Aiwa AD-F450	120	Basic but well-designed budget deck, astonishing value; only the poor metering gives the game away	●	●	●	●	●	●	●	1513	136
Aiwa AD-WX727	170	High-class twin for those who want bells, whistles - and music	●	●	●	●	●	●	●	1377	146
Denon DRM-550	160	There are some technical limitations, but this remains a fine sounding deck, and excellent value	●	●	●	●	●	●	●	1518	158
Denon DRW-580	200	Twin deck: OK for casual use, but will quickly pall with more quality critical applications	●	●	●	●	●	●	●		171

DOLBY BX PRO
DOLBY S
DOLBY C
3-HEAD
TWIN HEAD
AUTO CALIBRATION
AUTOREVERSE
FACTSBACK NUMBER
ADJUSTABLE BIAS
ISSUE NUMBER

CASSETTE DECKS (CONTINUED)

Product	Price(£)	Comments	DOLBY B	DOLBY C	DOLBY S	DOLBY BX PRO	3-HEAD	TWIN HEAD	AUTO CALIBRATION	AUTOREVERSE	FACTSBACK NUMBER	ADJUSTABLE BIAS	ISSUE NUMBER
B Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●								1591	140	
A Denon DRM-650S	230	An all-round improvement on predecessors, offers a wide-ranging, disciplined sound. Dolby S is not the best feature	●	●	●						1514	136	
Denon DRM-740	270	Breathed-on DRM-710, with good external treatment, offers good, if somewhat detached sonics	●								1514	136	
Denon DRS-810	310	Draw-loading deck, carefully designed yet lacking in subtlety on audition	●								1514	136	
Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design	●								1592	140	
Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	●								1592	140	
B JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●								1380	146	
A JVC TD-V562BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque	●								1380	146	
B JVC TD-V662BK	270	Assured, clean and agile sounding recorder, if not quite the most refined in its class	●								1380	146	
JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable though not earth-shattering performance	●								1380	146	
A Kenwood KX-W6080	200	Modestly decent sounding twin deck, with some transport instability and ragged bass. The features list is also strong	●								1380	146	
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●								1380	146	
NAD 616	300	Primitive twin deck with basic features. No Dolby setting memory, transports are too unstable for serious quality first use.	●								1380	146	
A Onkyo K-611	460	Cute drawer loading mini-size component with 3-heads and dual capstan transport	●								1384	146	
A Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●								1384	146	
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this ultra-sophisticated twin would have been recommended.	●								1384	146	
A Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●								1385	146	
A Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open and un-cassette-like sound	●								1385	146	
B Technics RS-AZ6	230	For those who can't afford the RS-AZ7; exquisite clarity over the widest bandwidth thanks to AZ thin-film head	●								1385	146	
B Technics RS-AZ7	300	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in the state-of-the-art	●								1385	146	
A Yamaha KX-490	199	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●								1385	146	
A Yamaha KX-580SE	250	Subtle, engaging and transparent sounding deck, with a lightweight tonality, but good stability and strong detail	●								1385	146	



CD Players brought to you in association with **MISSION**

All CD players offer a basic selection of facilities, and some can keep you entertained for hours as you programme in disc names and track orders. All but the excessively inexpensive feature remote control. Most CD players can be upgraded by adding an outboard DAC (see below). To do this the player needs a digital output of either electrical or optical persuasion; sonically the former is preferable. 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.

B Best buy **R** Recommended

KEY

ELECTRICAL DIGITAL OUTPUT: For electrical connection to an outboard DAC.	AT&T OPT DIG OUTPUT: High-speed optical output to be used with similarly equipped DACs.	controlled output.	bitstream, PWM, etc
AES/EBU ELEC DIG OUTPUT: Balanced digital output to be used with similarly equipped DACs.	BAL ANALOGUE OUTPUT: Balanced analogue output for amplifiers equipped with balanced inputs.	MULTI-DISC: Equipped with a carousel or multi-tray system for continuous play of multiple discs.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
OPTICAL DIGITAL OUTPUT: For optical connection to an outboard DAC.	HEADPHONE SOCKET: For can users.	DAC TYPE: Digital to analogue convertor. BS – Philips Bitstream, MB – multibit, Hyb – hybrid of multibit and bit-stream technologies, 1bit – single bit types such as MASH,	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
	VARIABLE OUTPUT: Remotely adjustable, volume-		

CD PLAYERS

Product	Price(£)	Comments	ELEC DIG OUT	OPT DIG OUT	AES/EBU ELEC DIG OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	ADJUSTABLE BIAS	ISSUE NUMBER
A Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation distinguish this player from the crowd	●								Hyb	169	
B Acurus ACD11	899	First-rate if costly player from the US, which combines a delightful transparency with an uncontrived naturalness	●								1bit	166	
A Arcam Alpha 7	330	Very detailed for a budget player with a slick and free sense of dynamics, needs careful ancillary matching	●								Hyb	1872	163
Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass (Statements)	●								1bit	165	
AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable	●					●	●	●	BS	172	
A Arcam Alpha 8	520	Refined, intricately detailed but a little cautious, this should be broadly compatible with a variety of amps	●								BS	1873	163
B Arcam 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder	●								1-bit	176	
Audio Innovations Alto	399	Refreshing piece of audio sculpture belies inconsistent audio behaviour	●								BS	1635	151
Audiolab 8000CD	1,000	Developed according to the Green Cross Code of digital audio with an elegant but safe musical presentation	●								BS	1874	163
Audio Research CD1	3,290	Suspends disbelief with a frighteningly real yet obviously coloured sound. A rare proposition among CD players	●								BS	1875	163
AVI S2000MC2	899	A chip off the old block, this model's in-yr-face balance obstructs an otherwise finely detailed and dynamic sound	●								MB	176	
A AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us, and a fine performer in a sympathetic system	●								MB	169	
A Cambridge Audio CD4	150	Basic appearance and sluggish track access/track search belies its up and at 'em sound quality	●								Hyb	1268	147
B Cambridge Audio CD4SE	200	Among the best players we have encountered at the price, considerably more refined and convincing than CD4	●								BS	1877	163
B Cambridge Audio CD6	250	A sharp, lively and articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●								BS	159	
A Copland CDA-266	1,199	Visually simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution	●								MB	176	
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour, one for refined tastes	●								MB	1880	163
A Cymbol CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings	●								Hybrid	176	
Denon DCD-625	200	DCD-615 replacement is generously equipped but lacks sophisticated sound of its forebear	●								MB	1269	147
A Denon DCD-825	240	Despite extensive revisions, this latest player still sounds like a typical 18-bit Denon, which is no bad thing!	●								MB	1531	137
A Denon DCD-1015	350	Excellent, mid-range player – fast, fluid and lean	●								MB	1599	141
A Denon DCD-3000	1,000	Sings with the temperament of a huge orchestra under the baton of a timid conductor, but very agreeable at that	●								MB	1881	163
B Denon DCD-635	180	Modest presentation gives little clue to the thoroughbred electronics ticking away inside	●								MB	172	
Eclipse CD101a	80	If you want to know the sound of high order distortion, this is probably as good a place to start as any	●								MB	144	
A Harman/Kardon HD710	200	A player of integrity, but can sound a bit hard and rough when extended, and is somewhat amplifier fussy	●								1bit	159	
A Harman/Kardon HD730	300	Competitive at the price, with a coloured but dynamic and outgoing sound supported by a raft of user features	●								BS	166	
A Helios Model 2	950	This player may not be to everyone's taste, but it is an individual, with some interesting things to say	●								Low bit	176	

AES/EBU ELEC DIGITAL OUTPUT
 OPTICAL DIGITAL OUT
 AT&T OPT DIG OUT
 BAL ANALOGUE OUTPUT
 HEADPHONE OUTPUT
 VARIABLE SOCKET
 MULTI-DISC
 FACTSBACK DAC TYPE
 ISSUE NUMBER

CD PLAYERS (CONTINUED)

Product	Price(£)	Comments	AES/EBU ELEC DIGITAL OUTPUT	OPTICAL DIGITAL OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUTPUT	HEADPHONE OUTPUT	VARIABLE SOCKET	MULTI-DISC	FACTSBACK DAC TYPE	ISSUE NUMBER
JVC XL-V184BK	120	Excellent budget player, well presented, a tad opaque but its heart is in the right place.								1bit	172
JVC XL-V284BK	140	Featuring a new set of bitstream innards, this flexible player has a refined, if occasionally unpredictable sound	●							1bit	1270 147
JVC XL-Z574	250	Strong resolving power and good midband and dynamics, but slightly raw and thin					●			1bit	159
JVC XL-Z674BK	300	Even-handed, but glosses over the most intimate moments	●							1bit	1637 151
Kenwood DP-3080	170	Bold, dynamic and outgoing sound, though somewhat aggressive. Poor build quality and finish								1bit	159
Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music - and has CD Test too	●							1bit	172
Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●							MB	1885 163
Krell KPS 20i	9,990	Forthright, edge-of-the-seat sound with outstanding bass performance (tested in Statements)	●	●		●	●			MB	1734 155
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●							Hyb	1762 155
Marantz CD63MKII Ki Sig	500	It's the quintessential sound of Marantz - warm, open, and smooth almost to a fault	●							Hyb	169
Marantz CD-67	270	Dynamic, authoritative, and wide tonal response, but also shut-in and mid-forward balance	●							1bit	159
Marantz CD-67SE	350	Refined, enjoyable player, though ultimately a little soft-centred	●							BS	166
Marantz CD-48	200	Somewhat inconsistent, middle ranking player which hints at better things	●							1bit	172
Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●							BS	1763 155
Marantz CD-17KIS	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland	●							BS	176
Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics - but it's not cheap	●							DS	169
Meridian 506	1,100	Revised 506 includes MSR remote and a new D/A chip, which makes it livelier and more detailed	●							1 bit	176
Meridian 508 (20-bit)	1,995	Combines a delicate mid and treble with rich, opulent bass and has impressive low-level resolution	●				●			BS	1886 163
Mission Cyrus dAD3	598	This front loader has a relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance								BS	1887 163
Mission Cyrus dAD3Q	898	Lucid, transparent and uncontrived sound quality, superb build, and readily upgradeable						●		MB	169
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●							MB	166
Musical Fidelity E60	300	This entry-level player lacks proper stereo localisation and clarity	●							BS	166
Musical Fidelity A2	500	Warm (too warm), attractive and open player, a great improvement on (related) E60	●							BS	169
Musical Fidelity FCD	1,500	A forward disposition makes this perfect for Fenders but less appropriate to Guarneris	●					●		BS	163
Myryad MC100	700	A little extra get-up-and-go wouldn't go amiss, but its sheer maturity and composure ensure listenability	●							BS	1889 163
Myryad MCD500	1,300	Well-built attractive player, which has much promise, some unrealised, and which can be a little hard going on audition	●							Low bit	176
NAD 510	200	Pale version of NAD's senior CD players with a stripped down feature count								1bit	172
NAD 512	250	Simple, well-focused presentation, and articulate with it, though hard-nosed quality is not everyone's cup of tea	●							1bit	159
NAD 514	370	Boisterous sound, but undeniably attractive	●							BS	1639 151
Naim Audio CD3	1,000	The idiosyncratically packaged CD3 is solid and highly articulate. Always has its feet on the ground though								MB	1765 155
Naim Audio CD2	2,000	Provides bags of detail with a solid stereo focus but not all the romanticism we know to be possible								MB	1890 163
Onkyo DX-7210	260	Well-bred CD player features an unusual digital filter, is smooth and cultured without appearing grey or boring	●							BS	1273 147
Onkyo DX-7510	400	Strongly flavoured, assertive sound	●							BS	1640 151
Orelle CD-100EA	649	Excellent imagery, timing and transparency, and readily upgraded or reconfigured	●	●						MB	166
Philips CD-721	130	Surprisingly well-sorted, articulate if slightly glossy and attractively presented sound. Captive signal lead	●							1bit	159
Philips CD751	180	Inconsistent and occasionally opaque and scrawny sounding cheapie	●							1bit	172
Pioneer PD-S705	300	A dichotomy, this machine was loved by some for its articulacy and disliked by others for sounding too impressive!	●							BS	1891 163
Pioneer PD-S904	400	Too much legato - literally - in sound, but a very smooth performer	●							1bit	1641 151
Pioneer PDS-06	550	Technologically sophisticated, Pioneer's first multi-bit player for years is polished and capable, if a tad laid back	●							MB	176
Pioneer PD-S505 Precision	460	Assured, fluid-sounding player, with great spatial coherence	●							1bit	166
Quad 77	900	A true thoroughbred combining a penetrating insight into detail with poise rarely found at the price								Hyb	1893 163
Roksan DP3P	1,495	Dramatic and compelling, classical listeners should be ready to 'air conduct' when auditioning this player	●							BS	1896 163
Roksan Caspian	895	Solid, articulate, and fundamentally well-engineered player, but with some subtle low-level limitations	●							Hyb	169
Rotel RCD-970BX	375	A combination of solid build, useful facilities and an attention grabbing sound make this a winner	●							BS	1897 163
Sherwood CD-4030R	180	Easy on the ear, smooth-sounding player, with limits set by the slightly soft, compressed quality - and messy fascia								BS	159
Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	●							BS	1899 163
Sony CDP-XE510	180	Souped up CDP-XE500 which tells a rather bland and unengaging story								1bit	172
Sony CDP-XE900E	300	Refined and analytical disc scavenging tool, but there are some distinctive colourations making auditioning vital								BS	159
Sony CDP-XA20ES	450	High tech, with a long list of gadgets, this is an oddly configured player that ultimately sounds less than compelling	●							1-bit	176
Sony CDP-X3000ES	500	Shoobox format player, with looks to die for, and switchable digital filters to tweak the already excellent sound	●							BS	169
Teac 3450SE	200	For once a budget player where the gadgets take second place to respectable, budget amplifier-friendly sonics	●							1bit	166
Teac CD-5	350	Bright, breezy and up-beat - but short in the trouser department	●							BS	1643 151
Teac VRDS-7	599	Although bold and outgoing, this player can sound both intrusive yet lacking in fine detail	●							BS	1769 155
Teac VRDS-9	700	Well-presented, heavyweight midi, the Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	●							1-bit	176
Teac VRDS-10SE	850	Superbly built and presented, but rather leaden bass, with an over-prominent and not ideally refined mid/top	●							BS	169
Teac VRDS-25	1,300	A solid player in all respects combining powerful sound with state-of-the-art technology	●							MB	1903 163
Technics SL-PG480A	130	Full driving sound, but somewhat uneven in balance with a subtle, slightly harsh top end								1bit	159
Technics SL-PS770D	250	High tech and well built technology battleship which smoothes the rough edges off the music								BS	172
Trichord Genesis	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority.	●							Hyb	169
Trichord Revelation	799	Well-ordered and clean sound that may be a little too refined for some, images well	●							1bit	166
XTC CDP-1	1,250	Bright and sometimes abrasive, but detailed player	●							MB	176
Yamaha CDX-390	130	Well endowed entry level unit, with inconsistent sound that can be harsh in extremis								1bit	172
Yamaha CDX-490	170	Big, blowsy sound, is undermined by lack of precision and focus								1bit	159
Yamaha CD-X890	350	Clearly a quality product in every sense, the Yamaha provides a spacious, refined and tuneful account of the music	●							BS	166
TRANSPORTS											
Arcam Delta 250	800	Arcam's best effort yet is a new design based on Philips CDM9 transport. Specification includes Sync Lock facility	●							-	1491 130
Audiolab 8000CDM	1,400	Super-slick transport and basically very honest sound, but lacking the last degree of fine detail	●	●						-	162
Audiomeca Kreatura SE	1,400	Superb combo for those who like the sound of valves (tested with Elixir DAC in Sessions)	●							MB	141
Audiomeca Mephisto	2,350	Tested with Trichord Pulsar, the duo provides a highly composed and tactile sound	●							-	1320 144
Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●							-	1323 144
Meridian 500	1,245	Used with the 563 DAC, the combination is thin, brash and uncomfortable	●							-	1103 133
PS Audio Lambda	2,250	With Ultralink Two, sound positively sparkles with colour and resonant detail	●	●						-	1106 133
Roksan Attessa ATT-DP3	1,495	Not the most detailed or refined but capable of good excitement with the right material	●							1bit	162

CD PLAYERS

Product	Price(£)	Comments	AES/EBU ELEC DIGITAL OUTPUT	OPTICAL DIGITAL OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE OUTPUT	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	ISSUE NUMBER
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound (tested with D-T1)	●			●				-	1325 144
Theta Data Basic II	2,397	Uses a Philips CDM-9 Pro mechanism and works a treat with more lively DACs	●							-	1494 130
Thorens TCD2000	999	Lively and up-front presentation not helped by rather loose bass and splashy treble	●			●				-	162
Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●			●				-	162
Wadia 8	3,195	Budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer	●			●	●			-	1495 130
DACS											
Arcam Black Box 50	350	Measured and sophisticated sound from a DAC that leaves plenty in reserve for future upgrades								Hyb	1506 133
Arcam Black Box 500	500	Sophisticated unit with sync lock and discrete DAC								BS	1519 136
Audio Note DAC1	675	Oddball DAC with manual de-emphasis switch. Needs a high preamp input impedance or bass will suffer								MB	127
Audiolab 8000DAC	900	Basically very honest sound, but lacking the last degree of fine detail								BS	162
Audiomeca Elixir	799	DAC was tested with Kreatura SE – see above								BS	141
Linn Numerik	1,500	A new 20-bit DAC and revised Karik transport have cleaned up; but sounds a bit dry and humourless								MB	1323 144
PS Audio UltraLink 2 HDCD	2,590	With Lambda transport, the sound positively sparkles with colour and resonant detail								MB	1106 133
PS Audio Reference Link	4,550	Consolidates reputation of PS Audio for high performance digital electronics						●		MB	1069 132
Roksan Attezza ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material								1bit	162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed								BS	1325 144
Teac D-700	600	With P-700, the D-700 may lack the resolution, but is bubbly and entertaining								MB	120
Thorens TDA 2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble								BS	162
Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc								Hyb	162

You must listen to **MISSION** For details of your nearest stockist, ☎ 01480 451777. Or visit the company's WorldWideWeb site – <http://www.mission-cyrus.com>



Digital Recorders

Digital recorders come in a variety of different guises, but have yet to make much of an impact on the domestic market. At present there are three types to choose from: DAT (digital audio tape), MD (MiniDisc), and CD-R (CD Recordable). MD's claim to fame is its optical disc format, which offers instant track access and can't be worn out like a tape. DAT has been on the market for quite some time now, but has never really 'made it' as a consumer medium due to the

dearth of pre-recorded material. However it has begun to carve itself a niche in the top end of the market, replacing reel-to-reel as the audiophile's tape based medium. Home CD-R is coming into its own with Pioneer's PD-R05 machine attempting to set a trend.

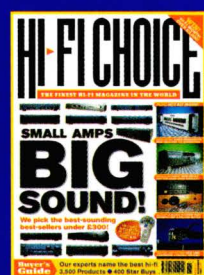


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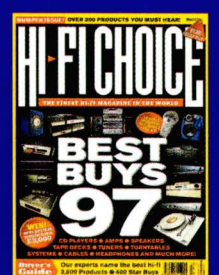
FORMAT: Type of recorder, see above for descriptions.	ADC TYPE: Analogue to digital converter types as per DACs.	ELECTRICAL IN/OUTPUTS: Digital socketry for electrical cable.	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared
DAC TYPE: Digital to analogue converter: BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bitstream technologies, 1bit - single bit types such as MASH, bitstream, PWM etc	PORTABLE: Can be run off batteries but not necessarily personal stereo size.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	
	OPTICAL IN/OUTPUTS: Digital socketry for optical cable.		

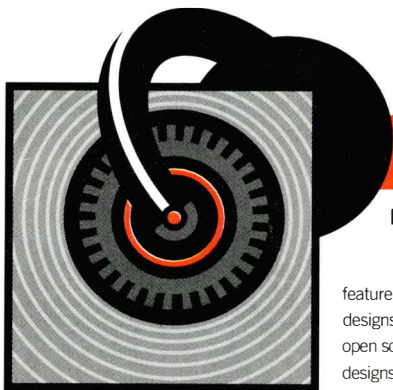
DIGITAL RECORDERS

Product	Price(£)	Comments	FORMAT	DAC TYPE	ADC TYPE	ELECTRICAL IN/OUTPUTS	OPTICAL IN/OUTPUTS	PORTABLE	FACTSBACK NUMBER	ISSUE NUMBER
Denon MD-1300	500	Sound sometimes lacks integration but tonal balance is good and it handles loud music with panache	MD	BS	BS	●	●		177	
Kenwood MD-9090	550	Slight sibilance and image vagueness do not detract from excellent balance and solid bass	MD	BS	BS	●	●		177	
Onkyo MD-121	450	Mid-sized deck that sounds slightly coloured at times, though immediate and lively	MD	BS	BS	●	●		177	
Philips CDR-870	500	The first re-writable CDR, but has jitter problems in direct digital dubbing	CD-R	BS	BS	●	●		174	
Pioneer PDR-04	700	Scaled down version of the 05 with auto level setting but all the socketry and features you need to make your own CDs	CD-R	BS	BS	●	●		171	
Pioneer D-05	900	Second generation 96kHz DAT recorder can offer startling realism with the right software - ie first generation	DAT	BS	BS	●	●		1652 152	
Pioneer PDR-05	1,000	CD recorder that uses domestic blanks only (limited to 74 minutes), write once but excellent sound quality	CD-R	BS	BS	●	●		1652 152	
Pioneer D-C88	2,000	State-of-the-art portable 96kHz DAT recorder, the size of a lap-top computer this Nagra country on the cheap	DAT	BS	BS	●	●	●	1431 150	
Sharp MD-R2	300	Budget recorder that loses little or nothing in comparisons with much more expensive models — highly capable	MD	BS	BS	●	●		177	
Sony MDS-JA30ES	700	Amazingly comprehensive set of features and sound as good as any; just the merest hint of coarseness at times	MD	BS	BS	●	●		177	



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Headphones

There are a variety of different approaches to headphone design. Among the more expensive models, electrostatic drivers are used in open-backed phones. Most models feature dynamic (moving coil) drivers in circular, open or closed-back designs. The advantage of open backs seems to be a correspondingly open sound, but one can also hear external noise, of course. Closed-back designs are useful in situations where it is necessary to block out noise.

There are three styles of headphone: circumaural models enclose the ear; supra-aural designs feature a flat pad which presses on the outer ear; and intra-aurals (in-ear) rest inside the ear itself, à la personal stereos. For best results a separate headphone amplifier is recommended.

Best Buy

Recommended

KEY	CLOSED BACK: Keeps out external noise.	amplifier output.	ordering a fax copy of the review. Use the contents page to find the Factsback information page.
TYPE: Operating principle: D - dynamic, E - electrostatic.	WEIGHT (G): Mass in grams	3.5MM JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
SUPRA-AURAL: Style where a flat pad presses on the outer ear.	IMPEDANCE (Ω): Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given	FACTSBACK NUMBER: The Factsback reference for	
CIRCUMAURAL: Style which encloses the ear.			
OPEN BACK: Offers an open sound but lets in noise.			

HEADPHONES

Product	Price (£)	Comments	D	E	S	W	I	A	F	I	N
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
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			C	O	P	O	P	O	P	P	P
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			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P	P	P
			C	O	P	O	P	O	P		



Hi-Fi Loudspeakers

Brought to you in association with **KEF**

As the last item in the hi-fi chain, the loudspeaker is merely the slave of what has gone before; it is only as good as the signal it is fed. Nevertheless, the distortions introduced by loudspeakers (and rooms) tend to be the most obvious. The average loudspeaker consists of an enclosure plus a couple of drive units 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. 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 it goes), for the given box size.

Subwoofers augment the bass and come in passive and amplified active form. They are less sensitive to placement than regular speakers.



KEY	IMPEDEANCE (Ω):	FREE SPACE:	FACTSBACK NUMBER:
SIZE WxHxD (cm): Width by height by depth in centimetres.	Measured in Ohms impedance it is a measure of how hard a loudspeaker is to drive: the lower the number the more powerful the amplifier needs to be.	Speakers should be placed away from walls.	The reference for ordering a fax copy of the review. Use the contents page to find the Factsback page.
FLOORSTANDER: As opposed to requiring a dedicated stand.	BASS FROM (Hz): The lowest frequency that a speaker can reproduce, based on in-room measurements.	CLOSE TO WALL: It is recommended that these speakers be placed close (between 3 and 12cm) to the rear wall.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
SENSITIVITY (dB/W): Efficiency: how much volume you get for a given input; the higher the louder.			

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price (£)	Comments	SIZE WxHxD (CM)	SENSITIVITY (dB/W)	IMPEDEANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	FACTSBACK NUMBER	ISSUE NUMBER	
Acoustic Energy AE200	250	Metal cone miniature has a tendency to shout but is still lots of fun, and well built too	18.5,30,25	87	6	40	●	●		177	
Acoustic Energy AE109	350	Lots of mass-loaded twin-driver speaker for the money, especially for loud, driving bass	18,90,25	● 88	4	25	●	●	1904	164	
Acoustic Energy AE120	500	Attractive presentation and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load too	18,98,28	● 89	4	25	●	●		170	
Acoustic Precision Eikos FR1	800	Lightweight single cone design with state-of-the-art midrange resolution, speed and imaging (Statements)	17.4,25,28	86	8	65	●	●		172	
ATC SCM20	1,599	Massively built, invariably informative but the rather forward presentation can be uncomfortable	24,44,31	83	8	28	●	●		86	
Audio Gem Emerald	540	Pretty compact floorstander with lively if lightweight sound	18,94,21	● 87	6	40	●	●	1905	164	
Audio Note AN-J/D	930	Light damping and local unevenness add some colouration, but don't spoil the speaker	38,58,25	93	8	25	●	●		110	
Audio Note AN-E/D	1,520	Coherent, dynamic and transparent, with extended bass and high sensitivity - but ugly!	36,84,28	● 94	8	20	●	●		106	
Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47	● 88	8	28	●	●	1344	143	
AVI Positron	899	Suited to smaller rooms, this 'mini-floorstander' is capable of great precision and delicacy, but in a rather small scale way	17.5,25,7784	● 85	6	40	●	●		174	
B&W DM302	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22	88	4	45	●	●	1778	156	
B&W DM601	199	Great main driver for the price, entertaining dynamics	20.5,35.5,23	88	6	30	●	●	1779	156	
B&W DM602	300	Prefers tall stands and space, but offers impressive midband dynamics and musical tension	24,49,31	90	8	30	●	●	1654	152	
B&W 305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31	● 89	4	40	●	●		1908	164
B&W 603	500	Squat floorstander with decent dynamics and well-judged, restrained balance; bass could go deeper	23.5,88,29	● 89	7	45	●	●		170	
B&W CDM1 SE	600	A gorgeous looking stand-mount with one of the best midbands around, and a subtle blend of other qualities	22,37,29	88	5	40	●	●		177	
B&W P4	675	Strikes a nice balance between all-out studio monitor sound and bass-filled crowd pleaser (tested in Sessions)	20,81,25.6	● 88	8	50	●	●		156	
B&W CDM1	600	Gorgeous stand-mount delivers unusually good bass for its size	22,38,28	88	6	30	●	●	1818	160	
B&W CDM7	1,000	A combination of serious welly and physical elegance, a basic lack of midband smoothness rather let the side down	22,97,29	● 90	4	22	●	●		174	
B&W Matrix 805 V	1,095	Stylish, remarkable imaging, good balance and low colouration	33,33,21	87	8	30	●	●		98	
B&W Matrix 804	1,695	A great all-rounder which combines exceptional bass extension with fine sensitivity	26,96,26	● 88	4	20	●	●		167	
B&W Matrix 801S3	3,995	Lacks transparency and the drama of the best dynamics, but acoustically a tour de force	44,100,56	● 87	8	20	●	●		81	
B&W Nautilus	35,000	Radical design results in one of the finest loudspeakers available. Active x-over needs 4 power amps (Statements)	42,105,90	● 87	4	10	●	●		166	
Cadence ES	3,500	Hybrid electrostatic/dynamic design from India that excels with classical material (Statements)	33,108,37	● 91	8	35	●	●	1798	157	
Castle Isis	250	A great miniature at a very competitive price. Sound is lightweight but very coherent, with a fine overall balance	17,35.5,21	87	8	45	●	●		170	
Castle Kendal	500	A beautifully finished compact floorstander with a decidedly forward but communicative sound. Try before you buy	17,76,20	● 86	6	45	●	●		177	
Castle Severn 2	539	Carbon fibre cone gives lovely, subtle midband but treble is a bit dull and bass a bit thumpy; lovely cabinet work	21,84,25	● 87	8	30	●	●		174	
Castle Avon	730	Lovely box and lovely voices from carbon-fibre composite cone	22,91,28	● 85	8	22	●	●	1909	164	
Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	● 88	8	28	●	●	1820	160	
Castle Howard S2	1,200	Ably fills the gap between Chester and Winchester; has a rich, laid-back balance	26,104,41	● 90	8	40	●	●	1078	132	
Celestion 23i	300	Cosmetically flawed, but the bottom end has fine get-up-and-go, and works well with dance tracks	24,86,27	● 89	6	30	●	●		177	
Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35	88	6	25	●	●	1910	164	
Cerwin-Vega VS10	350	Not all that refined but ballsy as heck, these rock boxes have no shortage of gung-ho	33,70,29	● 95	6	37	●	●	1758	155	
Chario Syntar 100	250	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27	87	6	45	●	●		170	
Dali 104B	370	Lively, rich sounding and communicative. Shame about bland styling and dull balance	22,86,27	● 93	4	28	●	●	1657	152	
Dali 606	400	A big bruiser at a tempting price, Dali's 'no-frills' 606 sounds refined and polite, but also packs some punch	22,97,32	● 91	4	25	●	●		174	
Dynaudio Audience 5	400	Follows the Dynaudio tradition for fine midband transparency, but the overall timbre is a bit thin and cold	20,31,26	85	4	40	●	●		177	
Dynaudio Audience 50	577	This compact stand-mount doesn't look big, but sound quality can match many models at twice the price	20,33,25	86	4	30	●	●		174	
Dynaudio Contour 1.8	1,842	Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	21,95,29	● 85	4	20	●	●		167	
Electrofluidics Sonolith 2.2xi	5,999	Polymer concrete cabinet with aluminium cones produces world class imaging and very serious bass (Statements)	38,95,42.5	● 86	4	n/a	●	●		139	
Eltax Linear Response	249	A curiously dumpy shape, this smooth and laid back performer is very easy on the ears, with fine tonal accuracy	25,35,32	85	4	40	●	●		177	
Epos ES12	499	High quality luxury stand-mount has great midband and stereo imaging	20,38,25	85	8	45	●	●	1823	160	
Epos ES14	675	Substantial stand-mount delivers delightful midrange focus and delicacy with good bass control	23,49,29	87	8	25	●	●		98	
Epos ES22	1,185	Elegant floorstander with 'safe' balance that can be enlivened with the right cable and energetic material (Sessions)	21,88,25	● 87	6	58	●	●	1629	151	
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	● 88	6	22	●	●	1346	143	
Faraday Siren	445	High mass concrete cabinet is let down by imbalance of ageing driver combination	25,27,46	90	4	48	●	●		94	
Gale Zi	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27	88	7	40	●	●		170	
GLL Imagio IC130	500	Lots of speaker for the money, but sound is decidedly dull and shut in	22,112,29	● 88	4	20	●	●	1824	160	
Harbeth BBC LS3/5A	699	Still a classic miniature, though not to every taste, and none the better for the recent update	19,30,18	82	10	80	●	●		66	
Heybrook Prima	159	Fine pace and timing, but balance is forward and bass is tight	20,29,18	87	6	50	●	●		110	
Heybrook Heylette	269	Attractive traditional-style near-miniature has fine bass-to-mid integrity, but dull and shut-in top end	19.5,30,20	89	6	45	●	●		170	
Heybrook Heylios	389	Great all-round performance in a pretty package at a sharp price	24,36,27	87	6	25	●	●		164	

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(dB/W)	IMPEDANCE(Ω)	BASS FROM (Hz)	FACTSBACK CLOSE TO WALL FREE SPACE	ISSUE NUMBER	
Heybrook Heylo	439	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	● 88	8 30	●	1658	152	
Heybrook Quartet	649	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22	● 90	8 48	●		122	
Heybrook Ultima	649	Has the bass wallop to justify its dual hi-fi/home cinema roles, but didn't get our listeners particularly excited	22,97,29	● 89	6 45	●		174	
Heybrook Sextet	1,299	Coherent and highly analytical, partly due to distinct upper-mid forwardness	27,90,20	● 88	8 25	●		102	
Infinity Reference 1i	150	Although not to our tastes, this is a competent speaker, and decent material value	20,34,20	● 89	6 50	●	1403	148	
Jamo BX100A	350	A cracking output for their size, these rock boxes can be a bit bright but have decent bass	31,5,54,28	● 91	8 40	●		1758	155
Jamo Classic 8	400	A lot of speaker for the money; good when playing quietly, but boom 'n tizz character sounded crude	22,90,29	● 90	4 28	●		1659	152
Jamo 477A	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	● 88	4 40	●		1549	138
Jamo 507A	700	Exceptionally imaginative styling keeps the front view super slim yet still packs a punch. Glass top is a neat extra touch	22,94,37	● 88	3 40	●		174	
Jamo Concert 8	1,300	Employing a die cast magnesium cone with a charming open and detailed midband (Statements)	24,5,38,31	● 90	4 38	●	1822	160	
JBL LX2	250	Lively and invigorating, if a touch crude, this good-hearted speaker reproduces music with considerable enthusiasm	22,40,27	● 87	8 40	●		170	
JBL L20	700	Pricy, heavy and a bit laid back, but this is a fine rock n'roller which is dynamic and communicative	26,42,28	● 86	8 30	●	1550	138	
JBL SWA1500	700	A distinctive Pro-style bi-radial horn tweeter, and the sound is quite a lot of fun, enlivened (?) by a juicy bass thump	17,5,51,31	● 86	8 40	●		174	
JBL L40	1,000	Classic, large, stand-mount 3-way is full of vim and vigour, with a superb sense of balance	30,65,31	● 88	4 23	●		167	
JBL L90	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a bit crude	24,94,35	● 91	6 23	●	1348	143	
Jordan Watts JH400	565	Piano-finish hexagon has controversial sound, with uneven balance but delightful mid	28,38,21	● 86	8 50	●		106	
JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,17,5	● 86	8 50	●	1781	156	
JPW Gold Monitor	80	More informative than Mini Monitor - but fiercer too	18,27,17,5	● 86	8 50	●	1782	156	
JPW ML510	150	Lots of good-quality speaker for the price, but not an ideal match for cheap budget components	20,34,22	● 88	5 50	●		169	
JPW ML710	230	Good material value but disappointingly uneven bass - check out the 510s and a pair of proper stands instead	20,88,30	● 88	5 40	●		177	
JPW ML1010	400	A seriously substantial speaker for the price, and an obvious choice for those who like their music loud	22,5,115,40	● 91	6 25	●		170	
JPW Ruby 1	400	Very pretty but pricy luxury metal-cone miniature has good, if slightly edgy balance	19,32,21	● 87	6 55	●	1572	139	
JPW Ruby 4	1,000	Twin metal-cone main drivers improve the dynamic performance and bass extension, with little sacrifice in focus precision	22,94,26	● 88	8 25	●		174	
KEF Coda 7	129	Lovely open voice reproduction, but bass could be tauter; build tougher	18,30,23	● 88	6 50	●	1783	156	
KEF Coda 8	189	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	● 86	6 28	●	1784	156	
KEF Coda 9	299	Uneven budget 3-way floorstander with poor bass definition	20,86,28	● 89	6 30	●	1785	156	
KEF RDM One	499	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24	● 88	6 70	●		164	
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass for size	23,103,34	● 89	4 30	●		167	
Kelly KT3	1,200	Super high sensitivity, this hefty floorstander sacrifices smoothness to dynamic realism - to very good effect	25,95,36	● 95	4 28	●		174	
Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24	● 89	8 20	●	1405	148	
Keswick Audio Torino	999	Good value, lively contender with distinctive shape and styling. Goes loud and deep but could be smoother	18-26,93,28	● 90	4 20	●		167	
Linn Keilidh Passive	750	Stunning timing and coherence, and awesome bass drive	20,83,28	● 87	4 22	●	1552	138	
Linn Kaber Passive	2,000	Dry, bright balance emphasises dynamics and transients, but can sound unforgiving	20,90,28	● 87	4 25	●		118	
Living Voice Airscout	19,500	You want dynamics? Get a horn, get a very, very good horn. This is a very, very good horn. Tested with RW24 horn sub	62,5,115,57	● 104	8 60	●		163	
Living Voice Air Partner S	37,200	Outstanding transparency and dynamics from remarkably solid and fast mega horn	64,160,90	● 108	8 40	●		138	
Meridian DSP6000	9,400	Sophisticated digital design, with a wide-ranging, refined and detailed sound. Has on-board amplification	28,133,43	● -	- 35	●	1226	140	
Mission 731 PRO	140	Cautious balance makes a fine match with budget equipment. A classy baby for smaller rooms	17,5,31,5,20	● 89	8 55	●		169	
Mission 750LE	250	Fabulous cosmetics and a great midband carry the day, though size will out and bass is inevitably limited	17,28,27	● 86	7 45	●		177	
Mission 733i	330	New tweeter gives this floorstander a more open sound; a good all-rounder that doesn't sound as big as it looks	20,5,88,30	● 88	8 45	●		170	
Mission 752 Freedom	578	A beautifully judged compromise in the art of combining presentation with a decent sound, and a lively midband	20,90,25	● 89	8 45	●		174	
Mission 753 Freedom	798	Great styling. New, more restrained tweeter reveals fine midband dynamics	21,90,31	● 89	4 40	●		164	
Mission 754 Freedom 5	1,298	Tall but exceptionally elegant floorstander gives fine midband projection; goes loud but limited deep bass for size	22,111,31	● 88	4 40	●		167	
Monitor Audio Monitor 3	400	An exceptionally discreet floorstander; sonically uneven, it's capable of fine results if used in a sympathetic system	16,91,21	● 88	5 30	●		170	
Monitor Audio Monitor 4	500	An oddball balance but a nonetheless entertaining sound, and a good looking real wood box at a realistic price	20,87,24	● 84	6 23	●		177	
Monitor Audio MA700 PMC	600	Good-looking luxury compact with all-metal diaphragms, lovely midrange, but occasionally edgy	22,35,26	● 89	8 45	●	1661	152	
Monitor Audio 702PMC	700	A good all-round stand-mount with that intimate midband focus which seems the preserve of metal cone main drivers	20,40,25	● 87	8 30	●		174	
Monitor Audio MA703 PMC	800	Lovely but pricy floorstander has up-front, coherent 'shiny' sound	20,89,27	● 88	8 50	●	1826	160	
Monitor Audio Studio 12	1,000	A real looker, but sound and content are a bit on the small side for the price	17,92,20	● 90	8 28	●	1349	143	
Mordaunt-Short MS10i	140	Up front, bouncy and a whole lot of fun	18,5,30,5,20	● 86	8 50	●	1789	156	
Mordaunt-Short MS30i	275	Slightly shut-in and coloured quality is compensated by fine bass and impressive communication	25,43,28	● 90	8 28	●	1662	152	
Mordaunt-Short Perf 860	1,895	Although a very neutral loudspeaker it can, with the right ancillaries, pack a serious punch (Statements)	26,86,35	● 90	6 35	●	1367	146	
Musical Technology Kestrel SE	300	Brighter and drier-sounding than the standard Kestrel (and not the better for it)	20,84,19	● 84	5 50	●		164	
Musical Technology Condor	1,000	Lots of clever ideas in a compact floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	● 85	4 28	●		174	
Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	● 86	8 25	●	1663	152	
Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	● 89	6 30	●		164	
Naim SBL Passive	1,970	Lively and punchy - smoother but more upfront than before	27,89,27	● 88	6 25	●	1352	143	
Neat Mystique	575	An elegant package which delivers a fine overall sound quality; some might find the top end too insistent	20,86,18	● 85	6 23	●		177	
Neat Petite II	745	Compact design now utilising ribbon tweeter with a fine sense of timing and surprising musicality (tested in Sessions)	20,30,18	● 86	8 33	●		160	
Neat Petite II/Gravitas	2,000	Beautifully presented miniature/subwoofer combo with ribbon tweeter gives smooth, laid-back sound	23,105,40	● 85	6 25	●		167	
NHT 1.5	449	Oddball styling but sounds much bigger than it has any right to. Good timing and communication skills	18,42,19-26	● 85	6 40	●		177	
NHT SuperOne	358	A fine compromise between size and performance, though sensitivity and loudness capability is modest	18,5,29,5,23	● 85	8 30	●		170	
Origin Live Conqueror	1,650	Chunky floorstanding 3-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	● 88	8 30	●		167	
PMC TB1S	430	A classy laid back performer that relishes its pro-audio associations; likes going loud and loves the bass guitar	20,41,30	● 87	6 40	●		177	
PMC TB1	482	Superb transparency, subtle laid-back sound, well worth seeking out	20,40,31	● 87	8 45	●	1830	160	
PMC LB1	1,099	Delightful smoothness and transparency, though bass and treble are both limited	18,53,25	● 89	4 33	●		110	
PMC AB1	1,758	Lovely panel-like transparency, slightly shut-in balance, needs a big room	26,79,43	● 89	6 22	●		114	
Polk LS50	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	● 89	8 25	●	1155	138	


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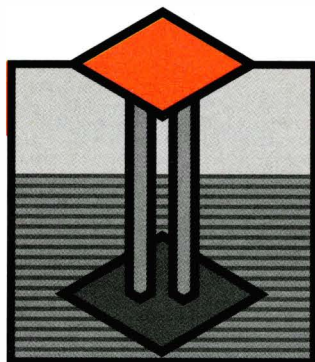
HI-FI LOUDSPEAKERS (CONTINUED)

SIZE WxHxD(CM) SENSITIVITY (dB/W/M) IMPEDANCE (Ω) BASS FROM (Hz) FACTSBACK CLOSE TO WALL FREE SPACE ISSUE NUMBER

Product	Price (£)	Comments	SIZE WxHxD(CM)	SENSITIVITY (dB/W/M)	IMPEDANCE (Ω)	BASS FROM (Hz)	FACTSBACK CLOSE TO WALL	FREE SPACE	ISSUE NUMBER
Polk RT16	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	● 91	4	22	●	●	1831 160
Polk LS70	1,200	High sensitivity, but balance has too much midbass boom; mid-top is laid back	31,94,37	● 90	8	22	●	●	1084 132
Proac Response 2.5	2,700	For aspirant high-enders looking for seriously good conventional boxes, this speaker should be first port of call	22,107,25	● 86	8	30	●	●	1457 149
QLN Qubic 222	400	Ugly but good value floorstander with loads of bass and a smooth balance	21,87,29	● 88	6	25	●	●	1832 160
QLN Signature	1,000	Attractive pyramidal stand-mount with heavy, laid-back balance but remarkably unboxy sound; superb stereo	27,37,36	● 83	4	25	●	●	167
Quad ESL-63	3,450	Classic electrostatic lacks punch, but has strengths some can't live without	66,93,27	● 86	8	34	●	●	60
Rega Kyte	198	Has splendid timing and coherence, sounds very explicit and informative	19,31,19	● 87	8	50	●	●	114
Rega EL8	298	Kyle drivers in compact floorstander gives more bass but less coherence	17,72,20	● 86	8	55	●	●	122
Rega ELA Mk II	498	Pretty and smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	● 87	8	40	●	●	1578 139
Rega XEL	1,040	Looks and sounds great: balance bright but even, with delightful coherence and timing	20,82,30	● 89	6	40	●	●	1083 132
Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic and temporal coherence	34,42,27	● 95	8	55	●	●	167
Revolver Colt	139	A good all-rounder, if a little bland, and excellent value for money	30,19,22	● 88	6	48	●	●	1407 148
Revolver 250	250	A nice price for a floorstander, but over-bright sound balance has potentially fatiguing consequences	21,85,5,25	● 87	8	22	●	●	170
Revolver 260	350	A no-nonsense presenter of rock with plenty of dynamics, not too refined (tested in Sessions)	21,5,91,6,30	● 89	6	40	●	●	1731 154
RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	● 81	8	22	●	●	167
Rogers LSI	149	High grade miniature	20,20,30	● 87	6	●	●	●	1408 143
Rogers dB101	250	Style par excellence, this shapely sub-miniature is fast and agile but lightweight and forward: great voices; lacks bass	20,26,20	● 88	6	45	●	●	170
Rogers Studio 3	499	Pricy LS3/5A derived miniature, excitingly coherent if lightweight, can't go loud	19,30,16	● 85	8	30	●	●	118
Rogers LS3/5A	699	Clever AB1 stand/subwoofer helps the classic 3/5A monitor give its best shot	19,31,17	● 82	12	45	●	●	1354 143
Rogers Studio 5	699	Luxury finish bookshelf-size model has genuine monitoring capabilities	25,25,48	● 89	8	40	●	●	1556 138
Rogers Studio 7	899	Latest variation on classic BBC-monitor theme has beautifully voiced, laid-back sound	30,63,30	● 90	8	30	●	●	122
Rogers C6/28	1,399	Large floorstander with carbon-fibre tweeter. Sounds much better than it looks, especially through the midband	25,103,29	● 88	6	20	●	●	167
Roksan ROKone	595	Large stand-mount is musically very communicative if a little coloured	21,45,33	● 89	6	30	●	●	1834 160
Roksan Ojan 3 Black	795	Squat, stylish and black, great bass extension and somewhat uneven balance	28,76,46	● 88	8	20	●	●	1082 132
Roksan DJ3X Black	995	Innovative low-line, 2-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	● 84	8	20	●	●	167
Royd Minstrel	275	Not much wellie or loudness but fine coherence and timing, a bit bright	18,69,12	● 86	8	30	●	●	1167 135
Royd Doublet	485	Great value compact floorstander; lively and very informative, if a little uneven	18,93,19	● 90	4	28	●	●	1835 160
Royd The Sorcerer	595	Extremely musical and communicative speaker that's fun to listen to. Aesthetics could use improving though	20,31,18	● 86	8	35	●	●	139
Royd Abbot	695	Dynamic and fine transient qualities are hampered by a rather coloured mid-forward balance	20,81,30	● 90	8	43	●	●	118
Ruark Sceptre	599	Graceful 'traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by a rather wayward sound balance	21,38,31	● 87	8	40	●	●	174
Ruark Talisman II	749	Less ideologically committed than some, strength lies in fine all-round coherence	23,84,32	● 88	8	30	●	●	118
Ruark Crusader	1,599	Elegant luxury 3-way with wonderfully even-handed, if rather laid-back balance	24,94,31	● 85	6	22	●	●	167
Ruark Equinox	1,849	The primary strength of this speaker is its ability to remove itself from the picture	25,88,34	● 88	6	45	●	●	1227 140
SD Acoustics SD3R	649	New SD3 has the agility and charm of a quality miniature, good bass and low sensitivity	20,38,30	● 87	8	25	●	●	106
SD Acoustics SD5	1,549	Bass suspect but forward midband is delightfully smooth. Has ribbon tweeter	20,110,30	● 88	8	30	●	●	1081 132
SD Acoustics SD1E	2,995	Two-part design with four rear firing bass drivers that has vibrancy, transparency and energy (Statements)	25,120,40	● 90	6	25	●	●	159
Sequence 400	329	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	● 86	8	45	●	●	164
Shahinian Arc	1,875	Occasionally wonderful small floorstanding omni; bright but coherent and revealing	35,69,25	● 88	6	24	●	●	110
Silverado Raider	695	Beautifully built audiophile compact, neutral if bright, tough work for amps	20,40,25	● 83	3	30	●	●	164
Sonus Faber Concerto	1,098	Beautiful Italian bookshelf design with superb midrange but limited loudness capabilities (Statements)	22,5,36,34	● 87	8	45	●	●	165
Spendor 2020	399	Utilising an oval drive unit in a stylish cabinet, this is a neutral design with AV inclinations (tested in Sessions)	18,34,26	● 87	8	●	●	●	1756 155
Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	● 87	8	30	●	●	1836 160
Tangent Monitor 5	80	An uneven performer best suited to small rooms and generous volume levels	17,5,27,18	● 83	8	55	●	●	169
Tangent Monitor 9	150	Budget floorstander that can motor when the music demands with a solid bass but occasionally raw treble	19,5,75,5,22,5	● 90	6	45	●	●	165
Tannoy Mercury M2	140	A fine all-rounder with big box and deep bass for the price; could be sweeter and tighter	20,5,38,28	● 87	8	25	●	●	169
Tannoy Mercury M3	230	Good-looking fine value floorstander is very neutral and evenhanded, with fine midband but weak dynamics and drive	20,5,87,28	● 87	7	20	●	●	170
Tannoy Precision P20	400	A creative and attractive design with time-aligned drivers, but the sound lacked sufficient excitement	21,80,30	● 88	5	25	●	●	177
Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer too	16-24,85,23	● 87	6	26	●	●	167
Tannoy D500	1,999	Plenty of muscle and stereo, but short of poise and delicacy. Hard work for amps	31,93,34	● 91	6	20	●	●	1355 143
Tannoy Westminster TW	6,600	These awesome horn-loaded speakers are remarkably controlled and impressive	large	● 99	8	38	●	●	C93
TDL RTL2	280	Spacious, weighty and enveloping sound if you can accept the laid-back balance	20,73,22	● 87	8	25	●	●	1412 148
TDL RTL3	400	Bargain-price floorstander has rich, heavy and bright sound with a good scale	20,90,37	● 90	8	25	●	●	126
TDL RTL3SE	450	A touch of boom n'tizz might be to taste, but this is a lot of box for the money, with floor-shaking bass capabilities	20,91,39	● 89	6	22	●	●	174
TDL CF200 Cotswold	650	Fine midband tonality and dynamic range, but less happy towards the bandwidth extremes	22,5,78,23	● 86	6	40	●	●	177
TDL T-Line 3	700	Plenty of bass and treble, but broad midband is rather repressed	20,97,38	● 86	8	20	●	●	164
TDL Studio 1m	899	Transmission line helps bring the best from metal cone driver	23,77,34	● 86	8	20	●	●	118
Technics SB-M20	200	Well-balanced with natural perspectives and fine midband coherence, but bass is a bit boxy and uneven	20,32,23	● 70	8	50	●	●	1413 148
Technics SB-M500	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	● 100	8	25	●	●	1666 152
Totem Model One	1,195	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	17,31,23	● 87	4	28	●	●	122
Vandersteen 2Ce	1,395	Elegant staggered baffle contributes to a refreshing freedom from boxiness	41,101,27	● 88	7	23	●	●	86
Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29,5,23	● 88	4	45	●	●	169
Wharfedale Valdis 400	200	Goes very loud with a minimum of amplification, but the sound is very thick and uneven, with a heavy upper bass	25,80,26	● 91	8	30	●	●	1414 148
Wharfedale Valdis 500	300	Offering a large version of events these rock boxes can move plenty of air, albeit not as subtly as alternatives	25,108,26,5	● 91	4	40	●	●	1758 155
Wharfedale MFM-3	350	Smooth broad midband gives fine voice rendition; bass could be better	22,89,28	● 87	8	40	●	●	164
Wilson benesch ACT1	6,400	Stylish, technically advanced and sonically as clean as a whistle, this is truly a high-end loudspeaker (Statements)	23,108,37	● 89	6	40	●	●	1852 162
ZYP AI	199	Cute metal cased micro-miniature is quite coloured but great fun	14,22,12	● 88	8	30	●	●	110
SUBWOOFERS									
B&W AS6	500	Good material value with a fair amount of low bass from 100W active design	45,51,45,5	●		30	●	●	1736 154
Celestion CS135	139	Compact hideaway passive sub lacks deep bass for high sensitivity speakers	52,19,34	● 86	8	45	●	●	128
Jamo SW600	530	Has some neat styling touches and remote control but deep bass is limited (active)	38,41,53	●		30	●	●	1736 154
KEF Model 30B	500	Commendably discreet with good sense of timing but limited extension (active)	38,5,37,43	●		45	●	●	1736 154

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	SIZE WxHxD(CM)	FLOORSTANDER	SENSITIVITY(OB/W)	IMPEDANCE(O)	BASS FROM (Hz)	FREE SPACE	FACTSBACK NUMBER CLOSE TO WALL	ISSUE NUMBER
KEF AV1	2,500	Works well, looks great, shakes the windows but costs a lot and is bulky	56,43,50	●			45			128
Living Voice RW24	11,500	The only horn subwoofer on the UK market brings new meaning to low frequency energy, speed and resolution	146,84,59	●	104	8	40	●		163
M&K VX-7B	450	Baby of a big range this active design delivers deep, plentiful bass albeit lacking in transparency	35,25,37	●			40			1736 154
Rogers AB1	549	Subwoofer-cum-stand designed as partner for LS3/5a or similar miniatures	19,57,16	●	82	8		●		1354 143



Stands & Supports

Hi-fi furniture is more important than you might imagine. The effect it can have on the sound of your system is far from subtle. Hi-fi furniture can be split up into two categories — equipment supports and loudspeaker stands. It is not entirely clear what makes a great equipment support, but some are definitely more equal than others. There's a variety of approaches and materials used, including particle board, glass and

all manner of steel tube and section. Speaker stands come in a variety of sizes and styles to suit different models. Use dealer or manufacturer recommendations to narrow down the choice, but as a rule you want the tweeter at ear height.

B Best buy **R** Recommended

KEY

HEIGHT (CM): Height of stand or equipment shelf.
TOP PLATE SIZE (CM): Dimensions of top plate on speaker stand or equipment support.
FILLABLE: Some speaker stands can be filled with sand and/or

lead to increase mass, which affects sound.
WELDED: The better stands and supports are welded rather than bolted together.
NUMBER OF SHELVES: The amount of tiers on an equipment

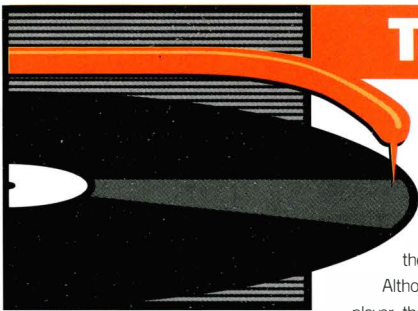
rack or support.
SHELF TYPE: Material that shelves are made of on an equipment rack. Wood generally means MDF.
FACTSBACK NUMBER: The Factsback reference for ordering a fax

copy of the review. Use the contents page to find the Factsback information page.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

STANDS & SUPPORTS

Product	Price(£)	Comments	TOP PLATE SIZE(CM)	HEIGHT(CM)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	FACTSBACK NUMBER	ISSUE NUMBER
Equipment Supports										
Audiophile Furniture Base	480	Easy to set up, well-ordered sound	40				4	Wood	1633	151
Custom Design Classic Four	270	Glass-shelved stand with octagonal wooden uprights with upward facing spikes isolating the top shelf, adjustable shelf height	81	46,37			4	Glass	1633	166
Fi-Rax R4	250	Lively, exuberant sound, slightly weak bass					5	Glass	1633	151
Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel that made a spectacular impression on audition	70	52,34	●		3	Glass	1666	166
Mana Acoustics Ref. Table	350	King of its type, angle iron, chipboard and glass combined to make a significant difference to sound quality					1	Glass	147	147
Mana 5 Tier Sound Table	600	Infinitely upgradeable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth to components upon it					5	Glass	1633	151
Optimum Int 2000 OPT490	350	25kg stand with shelves sandwiched between variable height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass	1666	166
Quadraspire Q4	200	Easy to live with, and tonally neutral					4	MDF	1633	151
Sound Organisation Z038	130	Too lively and lacking order — but cheap	50	84,40	●		5	Wood	1633	151
Sound Organisation Z560	150	A mix of welded and bolted members gives good structural integrity. While performance is not up with the best, it's great value	90	46,36	●		5	Wood	1666	166
Soundstyle Select 6105	280	Respectable sonics, structurally solid and smart					5	Glass	1633	151
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights that delivers with classical material	82	48,27			4	Wood	1666	166
Stands Unique Sound Tower	249	Wooden uprights combine with glass shelves to provide a fresh, forward sound, but bass could be quicker	81	72,42			5	Glass	1633	151
Target B5	175	Free of colorations, fine grip and good value					5	Wood	1633	151
Speaker Stands										
Alphason NC I	45	Filled single-column design without threaded spike holes that's appropriate for non-critical applications	40-60	16,16	●				1373	146
Alphason NCII	80	Tall, slim and elegant, though sound and value are unexceptional	40-60	17,17	●				159	159
Alphason Titan	120	Excels in the midband and allows voices to come across in a detailed and expressive fashion	40-60	16,16	●	●			1373	146
Apollo AZ6	80	Fine engineering value, but sound unexceptional and top-plate small	66	15,13	●	●			159	159
Atacama BD21	55	Good-looking and good value but doesn't match the SE24's sound quality	56	15,17	●				159	159
Atacama SE24	70	Stands out from the budget crowd because of the consistency and overall quality of the performance	61	19,5,17	●	●			1373	146
AVF Tower 400	35	Ridiculously cheap and much better than no stand at all	54	17,20	●				159	159
Ixos Deadrock 903	50	Smooth and tonally even but short on definition. Deep bass is soft which doesn't help timing	60						1373	146
Gale Reference 600	60	Smooth sounding with impressive bass well suited to less civilised speakers					●	●	1373	146
Kudos S50	100	Better sound than the budget stands, particularly at the bottom end	60	15,21	●				159	159
Kudos S100	270	The best all-round stand around... Probably...	63	15,21	●				159	159
Mana Soundframes	125	For use under floorstanders and equipment racks, these make music effortless and natural, can be stacked for greater effect	5				●		1373	146
Partington New Merlin	60	Although light in weight, the stand's performance seemed remarkably muscular but musical rendering lacked a little precision					●	●	1373	146
Partington Discovery	80	The depth and substance of the presentation truly added to the convincing nature of the system's portrayal					●	●	1373	146
Partington Trophy	100	Four-column design with damped top and base plates, sound is tight and cogent with smoothly integrated detail					●	●	1373	146
Revolver RS1	70	A good blend of performance and appearance for the price	53	18,18	●				159	159
RMS/Stands Unique Vivus	550	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A					159	159
Soundstyle 124	100	Big, shiny and solid, with fine midband projection	65	17,16	●				159	159
Stands Unique HP	220	Real wood disguises high performance tuned technology	59	22,23					159	159
Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack and outstanding imagery	53	15,21	●	●			1373	146
Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than audiophile oriented twin column design	60	15,15	●				1373	146

Tonearms



Turntables at the cheaper end of the market tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units and tonearms. Careful partnering and set-up is essential for these components.

Although the turntable is the most important part of a record player, the tonearm is the second most important, and the quality of

its construction and design have a significant bearing on sound quality. There are three basic types of arms listed in the key and each has its strengths, but pivoted designs are the most popular, for reasons both practical and economical.



Best buy



Recommended

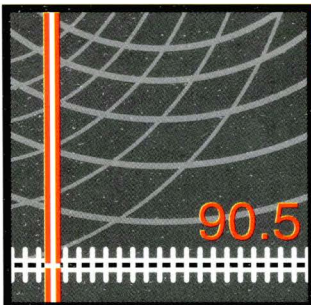
KEY

EFFECTIVE MASS: This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.
PARALLEL TRACKING: An arm which allows the cartridge to track the disc in a linear fashion.
PIVOTED: Arms which allow the cartridge to describe an arc as they traverse the record.
UNI-PIVOT: Pivoted arms with a bearing that allows movement in two planes.
EFFECTIVE LENGTH (cm): Length of arm from bearing to cartridge mounting.
ADJUSTABLE HEIGHT: Important for accurate cartridge set-up.
FACTSBACK NUMBER: The reference for ordering a fax copy of the review. Use the contents page to find the Factsback.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

TONEARMS

Product	Price (£)	Comments	PARALLEL TRACKING	EFFECTIVE MASS	PIVOTED	UNI-PIVOT	EFFECTIVE LENGTH (cm)	ADJUSTABLE HEIGHT	FACTSBACK NUMBER	ISSUE NUMBER
Alphason HR100S	490	S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	Medium	●	●	●	229	●	86	
Kuzma Stogi Ref	1,000	Large, solid and well-made arm, gives exceptionally clear sound with just a hint of brightness	High	●	●	●		●	79	
Linn Ekos	1,297	Superb, state-of-the-art design which builds significantly on predecessor's strengths	Medium	●	●	●	229	●	6	
Moth Arm	95	The ultimate budget arm? Refined, sweet, detailed and natural	Low	●	●	●	237	●	60	
Rega RB300	139	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	Low	●	●	●	237	●	60	
Roksan Tabriz Basic	275	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	Low	●	●	●	240	●	91	
SME Series 300-309	657	Beautifully made and finished: fully adjustable and a highly neutral performer	Low	●	●	●	238	●	79	
SME Series IV	936	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low	●	●	●	233	●	60	
SME Series V	1,391	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low	●	●	●	233	●	60	

Tuners



The radio medium operates at a lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live concerts rival all other sources from a hi-fi perspective. Though tuners might seem something of a hi-fi afterthought, the task they discharge is far from simple, since it requires the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on reception conditions, but a high-quality aerial system is

well worth having. Tuners come in two basic types. Analogue models tune gradually and can have analogue or digital displays; they are often preferred for sound quality. Digital tuners offer convenient automatic tune facilities and pre-set memories.



Best buy



Recommended

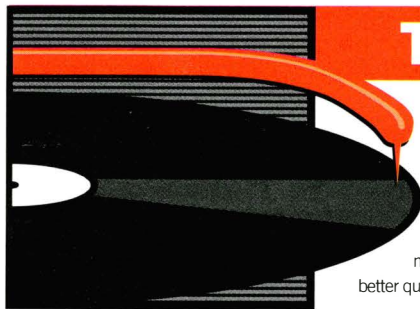
KEY

WAVEBANDS: Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for receiving certain transmissions in the UK.
PRESETS: Number of station frequencies that can be stored.
RDS: (radio data system) was originally designed for in-car applications. Basically RDS tuners can identify and display the name of the radio station being received, but they offer a variety of other features as well.
REMOTE CONTROL: Couch-potato friendly.
SIGNAL STRENGTH METER: Indicates strength of signal from aerial, useful for aligning your 'twig' during installation.
ROTARY TUNING KNOB: The ergonomically attractive approach to dial-surfing.
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

Tuners

Product	Price (£)	Comments	WAVEBANDS	PRESETS	RDS	ROTARY TUNING KNOB	SIGNAL STRENGTH METER	REMOTE CONTROL	FACTSBACK NUMBER	ISSUE NUMBER
AMC 17	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30	●	●	●	●		166
Arcam Alpha 7	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM, M, L	24	●	●	●	●		166
Arcam Delta 280	399	Fine sound quality marred by mild synthesiser whine; RF performance only average. Remote £60 extra	FM	20	●	●	●	●		120
Audiolab 8000T	750	Unusual combination of fine sound quality and RF performance (inc AM), and superb ergonomics	FM, M, L	39	●	●	●	●	1254	142
Denon TU-260L	120	Careful minimalist design promises a surprisingly open and vivacious sound	FM, M, L	20	●	●	●	●		93
Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●	●	●	●		166
Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30	●	●	●	●		166
Linn Kremlin	2,600	Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	FM	80	●	●	●	●	1254	142
Magnum Dynalab FT101	825	Although fairly expensive given its minimum set of facilities, its excellent sound provided ample compensation	FM		●	●	●	●		72
Micromega Tuner	700	Has digital output but even without the Micromega DAC, this provides exceptional sound quality. Looks good too	FM	39	●	●	●	●	1810	157
Mission Cyrus FM7	400	Open, generous soundstaging gives the music plenty of foundation, if a touch shut-in at the top	FM	29	●	●	●	●	1254	142
Musical Fidelity E50	300	Sounds involving if coloured and with a subjectively larger-than-life presentation	FM	20	●	●	●	●	1810	157
Naim NAT01	1,645	There may be better sounding tuners in the world, but we have yet to hear one	FM		●	●	●	●		1254
Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance, slightly disappointing sound	FM, M	40	●	●	●	●		166
Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M	20	●	●	●	●		166
Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM, M, L	30	●	●	●	●	1810	157
Technics ST-GT350L	150	Decent RF performance is offset by sound quality more typical of a mini/midi system	FM, M, L	30	●	●	●	●	1254	142
Thorens TRT2000	450	Not exactly neutral sounding, it nonetheless makes listening fun	FM, M	59	●	●	●	●	1810	157

Turntables



Specialist turntables are what high fidelity sound is all about. CD players 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 tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units

and tonearms. Careful partnering and set-up is essential for these components, but many so-called 'sympathetic' combinations exist.

Because turntables are mechanical devices that are designed to retrieve modulations as small as a micron, engineering quality is of paramount importance. It is also the reason why turntables cost as much as they do, and require high quality support systems.

B

Best buy

R

Recommended

KEY

MANUAL: You do it all: put the needle on the record and take it off.
AUTO: The record player does it all.
SEMI-AUTO: You share the work: you put it on, it takes it off.
SPEEDS: In RPM to correspond with your platters.
SUSPENDED SUBCHASSIS: Sprung suspension to minimise structural interference.
EXTERNAL PSU: Outboard power supply; generally it indicates high quality.
SUPPLIED WITH ARM: Many turntables require a separate arm to be fitted; if not, this tells you so.
SUPPLIED WITH CARTRIDGE: Most turntables do not come supplied with a needle.
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

TURNTABLES

Product	Price(£)	Comments	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSPENDED SUBCHASSIS	EXTERNAL ELECTRONIC PSU	SUPPLIED WITH CARTRIDGE	SUPPLIED WITH ARM	FACTSBACK NUMBER	ISSUE NUMBER
Clearaudio Reference	2,500	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail with a fizzy character but is quite bold	●								33/45	1328 144
R DNM Rota 2	4,800	Tonally slightly bleached, but extracts detail like few others. Works well on own table	●								33/45	1328 144
R Dual 505-4 UK	200	Consistent sounding and well isolated turntable. It is slightly lacking in oomph							●		33/45	103
R Kuzma Stabi/PS	1,200	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●								33/45	91
R Linn LP12 Basik	1,050	Trails the full LP12 significantly, but pace, rhythm, timing etc still top rank	●								33	103
R Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●								33/45	91
R Michell Gyrodec	765	Sweet and natural-sounding player, well matched to Rega RB300 arm	●								33/45	55
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm	●								33/45	164
B Notts Analogue Spacedeck/Arm 1,125		<i>No frills, just a first-rate, outstandingly natural-sounding deck that will last forever</i>	●								33/45	159
R Pink Triangle Anniversary	1,980	Possibly the most detailed, clear and neutral-sounding deck around. Likeness to master tape is uncanny	●								33/45	91
B Pro-ject 2	299	<i>Remarkably effective at the price with decent timing and a generally well defined sound</i>	●								33/45	164
R Pro-ject 6/Sumiko	699	Don't think of this as a mid-price deck with a good arm, but as a scaled-down Oracle Delphi – it's that good	●								33/45	138
B Rega Planar 2	214	<i>A remarkable product at the price, surprisingly articulate and confident</i>	●								33/45	48
R Rega Planar 3	274	The '3 sounds musical in a balanced and coherent manner, needs decent isolation and suffers a little pitch instability	●								33/45	164
R Rega Planar 9	1,598	Featuring the RB900 arm and a ceramic plinth, this deck puts Rega into contention with the best decks available	●								33/45	151
B Reson RS1	675	<i>Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail</i>	●								33/45	159
Rivelin Eclipse	1,100	Tested with SME 309. Tends to simplify things and add a slightly ragged edge to the proceedings	●								33/45	1328 144
R Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●								33/45	159
SME Model 20A	4,631	Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval	●								33/45/78	118
B Thorens TD166 VI/UK/RB	300	<i>Refined and solid sound with well-focused imagery; suitable for use with good MM and budget MC cartridges</i>	●								33/45	103
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●				●				33/45	159
R Well Tempered Record Player	1,800	Intriguing and challenging. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards	●								33/45	1180 136
Wilson-benesch TT/Act 2 arm	3,249	Carbon fibre is extensively used in this neutral and well-resolved turntable with its fabulous unipivot tonearm (Statements)	●								33/45	1775 156



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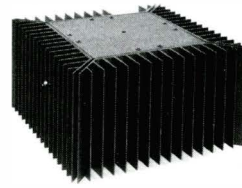
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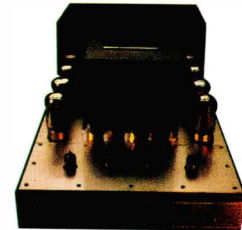
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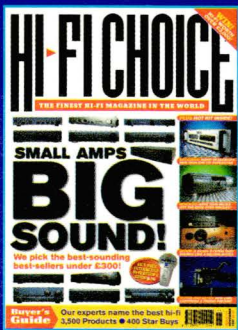
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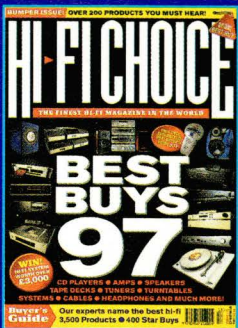
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- 12 Amplifiers £130-£300
- 6 Twin Cassette Decks £200-£300
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- 10 CD Players £120-£250
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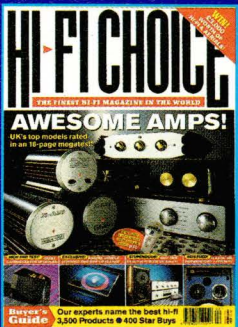
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- **AMPS PRICED £130-£650**
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Sony TA-FA3000ES This hefty £400 hunk is on test next month!

BUDGET AMPLIFIERS

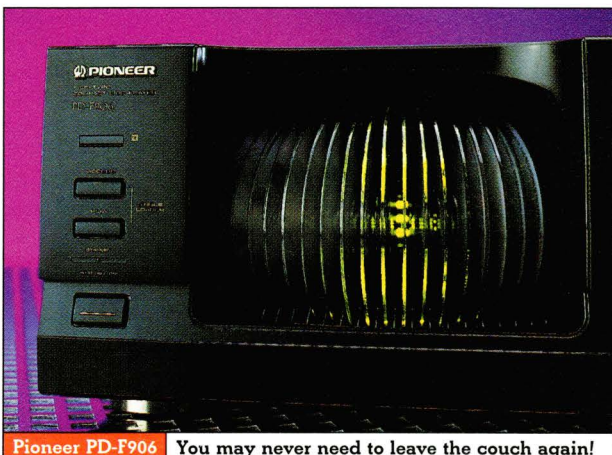
13 of the hottest new budget amplifiers are coaxed through the gruelling *Choice* review schedule. We've gathered models priced between £130 and £650 including the following brave challengers: Cambridge A1mkIII SE, JVC AX-A372, Pioneer A-405R, Yamaha AX-492, Goodmans Delta 900, Musical Fidelity E11, Technics SU-A800D, Rotel RC/RB971, Monrio Asty, Sony TA-FA3000ES, Audiogram MB1, Cymbol CA1, and Orelle SA100RX.

HORNS AND THE HIGH END

Drool over Avantgarde Duo horn speakers; conrad-johnson's entrée into the integrated amp market, the CAV50; and the ridiculously bijoux Nagra PL-P preamp — hi-fi doesn't get any more desirable.

MULTI-DISC MAYHEM

For all those couch potatoes out there, we put seven new multidisc CD players through their paces. Do they compete with single-disc players or are they sloth-enhancing gadgets? Choose from the Anthem CD1, Arcam MDC, Yamaha CDC-665, Pioneer PD-F906, H/K FL-8300, NAD 523, and Technics MC410.



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Ultra Vivian Scene

Having said goodbye to the Mission 750LE, David Vivian sought another enclosure to partner the REL Q50 subwoofer. Enter, stage left, the Eikos FR1.

Last month I promised to see if a decent sub woofer could seamlessly fill in the missing bottom octave of Mission's tasty 750LE compact speaker. Unfortunately the sub, a £375 REL Q50, arrived shortly after the Missions left, so your guess is as good as mine.

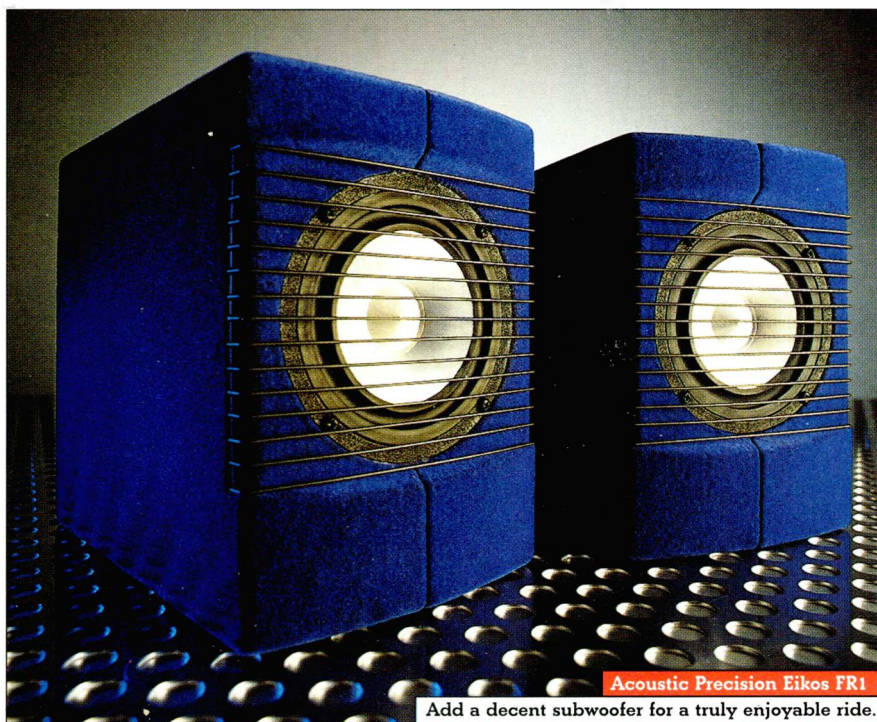
Still, it seemed a shame to use the REL just as a table — it's a sort of post-IKEA black cube, great with a bowl of fruit on top — so, instead, I grovelled to Dep Ed JK for a pair of Acoustic Precision's controversial £800 Eikos FR1, which in the opinion of some people (not Jason) have no worthwhile bass at all. Not only that, the examples he sent me — finished in black rather than blue flock... nice! — were the latest versions of this light-weight, single-driver design, claiming still greater enclosure rigidity and vanishingly low coloration.

I have to admit there was an ulterior motive at work here. As a long-term user and fan of Pioneer's Tom-Evans-tweaked Precision CD player and amp, I'd been dying to hear what amounted to AP's 'starter system': the rig reviewed by Alan Sircom in January (*HFC* 174) and recently up for grabs in *HFC's* exclusive competition (*HFC* 175). Complete phase linearity, as you know, is the trumpeted USP, the kind of realism you only get when no time-smear distortion is present in the speaker's output — ie the sound wave-front reaches your ears as it arrived at the microphone in the studio. Allegedly.

Get that bit right, say the advocates of PL, and everything falls into place. These in turn, lead to an uncanny accuracy of reproduction — in resolution, speed, timing, three-dimensionality, focus and dynamics. It's a back-to-basics thing; stereo in its most literal form: believable, *solid* images formed in front of and behind the speakers, not ones that have been stretched, flattened or blurred by phase anomalies. All this, Acoustic Precision says, the FR1 has down cold. But it doesn't get everything right. There's no way it could, with a single driver to cover the full frequency range.

Take the high road

Missing entirely are the extremes. By the reckoning of the conventionally wise, hi-fi isn't hi-fi without the high highs and the low lows. Among the brickbats I've heard flung at the design are that it has "no" bass (what, none?) and an intolerable "one note" treble. It's easier to see where this accusation is



Acoustic Precision Eikos FR1
Add a decent subwoofer for a truly enjoyable ride.

coming from when you consider that FR1 doesn't attempt to maintain much output above 12 kHz (some six kHz lower than most people can hear up to). Yet, to my ears at least, there's no subjective shortfall here, only at the bottom end which throws in the towel at around 65 Hz. The FR1 is truly a bandwidth-limited box.

Curious, then, that in the context of the Pioneer Precision system, they generally sound a bit bright, even when toed-in to smooth the Jordan metal driver's acknowledged on-axis treble hump. I don't say this pejoratively. A lot of commercially-orientated CDs are recorded this way to add some sparkle to the sound of muddy mass-market systems. Choose something as beautifully produced as *Dave Grusin Presents West Side Story* on the N2K label, and the balance is stunningly right; there appears to be even authoritative bass and a degree of slam. Listen to this disc and yearnings for more of anything would disappear. Except, maybe, a greater measure of good taste and restraint from Grusin's cheesy arrangements.

Radiohead's *OK Computer*, conversely, sounds strangely anorexic and brittle. It's no good blaming the production. It may well be at fault, but the AP rig pulls it apart too ruthlessly, detracting from the emotional impact

of what, after all, is great music.

So, without much hesitation, I plumbed in the baby REL. My initial experiments mirrored JK's when he used REL's larger Studio II in his Eikos ensemble. If the cut-off frequency is too high and the volume too loud the effect is unhinging. The sound suddenly seems more ordinary and more conventional, as the slower deep bass tries to drag down the quicksilver midband. But after extensive knob-twiddling, a more than reasonable trade-off can be achieved. I'd compare it with turbocharging and putting fatter tyres on a Lotus Elise: a little more lag when you put your foot down, slightly heavier steering responses. But more grunt 'n' grip.

Since I've had the REL in the rig, I haven't been tempted to switch it off. Ultimate speed is compromised without question but, even so, it would be hard to think of another system that's as quick on its feet. And, if anything, the sense of three-dimensionality is enhanced by having a more solid foundation. As a devotee of American bass funkmeister Marcus Miller, I have no regrets. Hi-fi without real bass, even hi-fi as good as the FR1, is like a car without suspension. It may go round corners like a ferret with its tail on fire, but you'll never truly enjoy the ride. ▲

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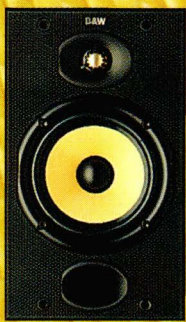
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