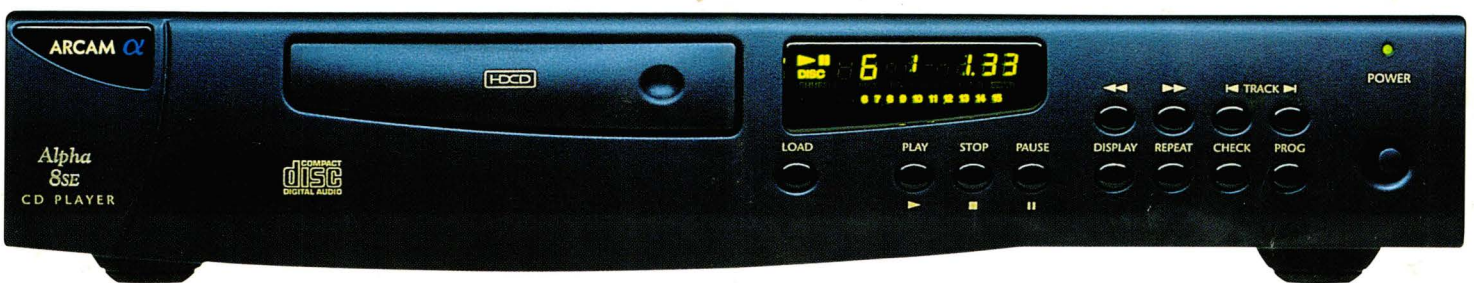


# HI-FI CHOICE

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**THE FINEST HI-FI MAGAZINE IN THE WORLD**



**MEGA TEST**

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**Classic brands take CD sound to affordable new heights!**



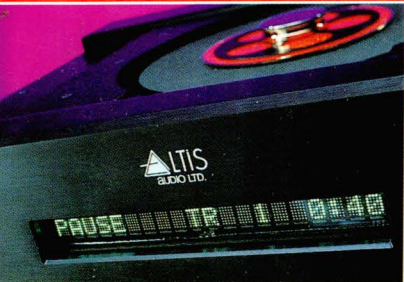
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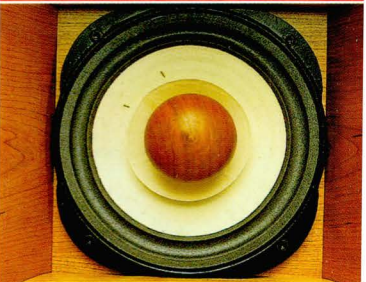
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Chief Musical Officers' Warning

# TEAC

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 St Ives (Plymouth) Ltd. **Distribution** USM Distribution Ltd. 86  
 Newnam Street, London W1P 3LD ☎ 0171-396 8000 Fax 0171-  
 396 8002 • **Published by** Dennis Publishing Ltd. 19 Boksover Street,  
 London W1P 7JH • Company registered in England, number 1138891 •  
 Entire contents of this issue © 1998 Felden Productions ISSN 0955 1115



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*Hi-Fi Choice* is the UK hi-fi magazine representative of the European Imaging & Sound Association (EISA). Every year EISA honours the finest hi-fi and home cinema products throughout Europe.

# Editor's Notebook



OPINION

The Christmas rush is on the way out. But how will this help clean up our hi-fi-buying habits? Stan Vincent investigates.

**O**n the sixth page of the latest corporate press release from electrical retailer Dixons, under the section headed 'Christmas Trading', Chairman of the Board Sir Stanley Kalms acknowledges that Dixons' pre-Christmas season was not the sales feeding frenzy the company had expected.

Though retail sales between 16 November 1997 and 10 January 1998 increased by eight per cent, they actually decreased four per cent on a like-for-like business comparison. "A new Christmas trading pattern has now become apparent," says Sir Stanley. "A greater proportion of consumers [defer] large purchases until the January sale."

I hope this indicates that we British are wising up to the truth about shopping. The first step towards acquisitorial enlightenment is to realise how dumb it is to pay top whack for goods prior to Christmas, when a few days later they're on sale at a knock-down price. Master that one and it won't be long before you'll question the whole notion of the pre-Christmas shopping rush. It's all very well to shower nearest and dearest with quantity, not quality of Christmas prezzies. But perhaps our loved ones might prefer presents that are better suited, as a consequence of their having been chosen without the pressure of Yuletide queues?

One thing's for sure: anyone who tries to buy hi-fi in haste will find themselves repenting at leisure. Long-term hi-fi happiness results only when music lovers come to understand how their brains interpret high-fidelity reproduced music. Only then will they find hi-fi systems which truly synergise with their perceptual foibles, as opposed to those which antagonise the ear-brain interface with a larger-than-life but ultimately caricatured sound. In order to escape such a syndrome, it appears, all too many sufferers beg the indulgence of our Help pages (p28) every month. We do what we can to put them back on the straight and narrow.

In hi-fi as in medicine, prevention is better than cure. It is far better to buy the right system in the first place than try to fix it further down the line. And while hi-fi journalists do what they can to point readers in the right direction, there comes a time when we must hand the baton to the equipment

retailers, our colleagues at the sharp end. For it is in their demonstration rooms that audiophile battles are won and lost — and not just over the price!

In recognition of the specialist dealer's vital role, last year we joined forces with hi-fi manufacturers Marantz and Tannoy to create the *Hi-Fi Choice* Hi-Fi Dealer Of The Year award, which will be presented annually to retailers who are voted tops by readers. Last month we revealed the winning outlet for 1997 (Richer Sounds' branch in Prestwich, North Manchester); this month, having dissected reader voting forms one by one, I have written an article to encapsulate the characteristics and values that you say distinguish the best hi-fi dealers of today. If you're about to trek off into the hi-fi jungle, this feature is essential wadding for your rucksack (p26).

## Entwined consumerism

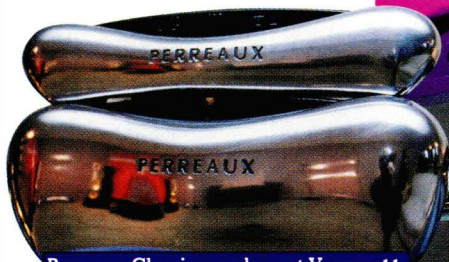
So inextricably entwined has our culture become with consumerism and materialism, that having the money to buy things is no longer enough. You're judged every bit as much by what you buy, how much you paid for it, where you bought it, and how much market research you did beforehand.

Buying from a specialist hi-fi dealer is one way to ensure you appear a paragon of smart consumption in front of your materialistic peers. Said retailer should make sure you get equipment suited to your taste and pocket, will install it in your home if you so desire, and certainly ought to have imparted the essential facts about the products purchased and their provenance.

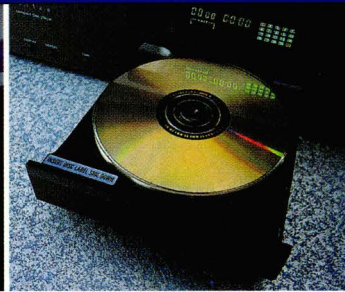
Quite the opposite fate befalls those who buy an unknown product because it is offered at a 'discounted' price. The 'white van' scam, in which people are offered 'studio monitors' for a quarter of their supposed cost, is a classic example of what happens when you buy on price alone.

However, buying hi-fi the smart way will teach you to purchase everything with more confidence and savvy. You'll feel better for it, believe me. Never again will you flail desperately through the shops in the week before Christmas. The whole family will be too busy for presents on Christmas Day, checking out your great-sounding audio rig!  
*Enjoy your listening this month*

This month's high-end reviews (from left): Altis CDTIII, Theta Miles, DNM 3C/PA3



Perreaux Classic, on show at Vegas p11

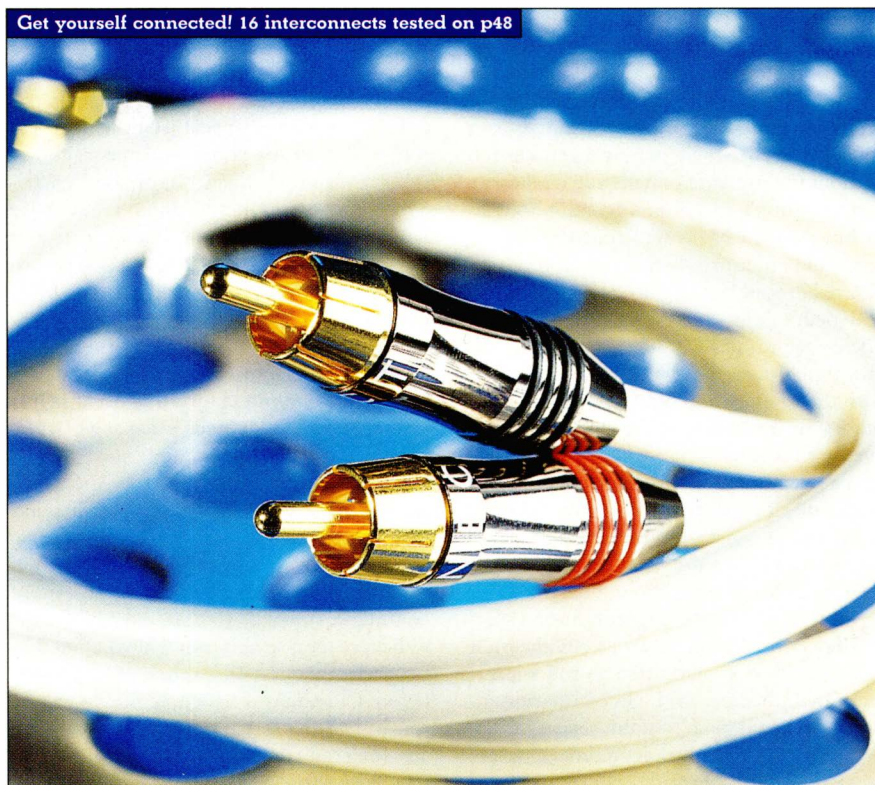


# CONTENTS

Don't miss our CD player extravaganza. p62



Get yourself connected! 16 interconnects tested on p48



## MARCH 1998 ISSUE 176

### REGULARS

#### 6 Update

'Tis the season of our discontent. Summer seems an eternity away and there's nothing on the TV. Fear not — let the latest hi-fi gear put a little sunshine back into your life.

#### 12 Instant Systems

Alan Sircom discovers a European system which offers you burger and fries with your café au lait.

#### 23 Write On!

Get it out of your system (so to speak). More hi-fi philosophy, banter and downright outrage from our readers.

#### 28 Help!

Choice's answer to Claire Rayner offers words of wisdom and wonder to those in hi-fi hell.

#### 37 Hints & Tips

Jimmy Hughes sounds a note of caution for those who just can't stop tweaking.

#### 39 Statements I

Just good friends? Alan Sircom spends a cosy night in with Theta's Miles CD player.

#### 40 Statements II

Jason Kennedy finds religion, love and more with the new DNM pre/power amps.

#### 42 Statements III

The Altis CDTIII — hefty in more ways than one. But is it worth its weight in gold?

#### 45 Statements IV

Alan Sircom gets to grips with the Tower T/4, a metal-coned speaker from new brand Titan.



**OPINION**

**3 From the Editor's Notebook**

Stan Vincent taps the barometer of hi-fi in this month's editorial.

**15 Ear Waxings**

Jason Kennedy takes last issue's cartridge test one step further. Go ahead Jay, take them on to the run-out groove.

**16 Oasis of Sanity**

Paul Miller debates whether sensitive speakers are the cure for all hi-fi ills.

**19 The Jimmy Hughes Experience**

Jimmy Hughes explains why he installed super-tweeters to boost treble, then took it all out again with a tone control.

**21 Personal Messages**

Paul Messenger on the unique challenges of finding the right amp for loudspeaker testing.

**138 Ultra Vivian Scene**

David Vivian tries to find out whether he can get big bass in a small room.

**FEATURES & REVIEWS**

**11 Viva Las Vegas!**

Find out what was hot and not at the annual CES Show held in the gambling capital.

**26 How To Choose A Hi-Fi Dealer**

Stan Vincent reveals what *Choice* readers consider the vital attributes of a good hi-fi shop.

**48 Interconnect Cables**

Sir Cliff was wired for sound, now you can be, with some help from our guide to wirey things.

**62 CD Players**

Banish those inner CD blues with our test of 12 mid-priced players.

**READER SERVICES**

**36 Subscriptions**

A must for all agoraphobes — you'll never have to go out! Plus a free gift for every subscriber!

**88 Hi-Fi Choice Web Site**

Have a chat on *Choice's* Web site. Check out past reviews and send in your *Help* queries.

**100 Reader Classified**

Buy, sell or trade a top-quality hi-fi bargain from this selection of lovingly pre-owned kit.

**129 Factsback**

The inexpensive way to access classic *Hi-Fi Choice* features, all by return of fax.

**137 Next Month & Back Issues**

Find out what's going on in April's FANTASTIC *Hi-Fi Choice* — and get hold of back issues!

**THE BUYERS' GUIDE**

**101 Directory/Price Guide**

Our listing of all new hi-fi products includes every current component that we've reviewed.

**PRODUCTS FEATURED IN THIS ISSUE**

Altis CDT III .....	42
Altis Reference.....	42
Arcam Alpha 8SE (HDCD) .....	12, 65
Audioquest Topaz 2 .....	49
AVI S2000MC2 .....	73
B&W CDM1SE .....	12
B&W CDM2 .....	138
Cable Talk Advanced 2.....	49
Cambridge Pacific .....	50
Chord Cobra .....	50
Clearaudio Signature .....	15
Copland CDA-266.....	80
Cymbol GDP12 .....	81
Densen Beat 100.....	12
DNM 3C/PA3 pre/power .....	40
DPA White Slink .....	51
Goertz M1 Tourmaline .....	51
Goldring Excel VX.....	15
Grado Reference.....	15
Helios Model 2.....	75
Insert Audio IC100mkII .....	52
Ixos Gamma .....	52
Kimber Hero .....	53
Lyra Parnassus DCt .....	15
Marantz CD-17 KI Sig .....	77
Meridian 506 .....	79
Mission 750LE .....	138
Musical Fidelity A1001.....	21
Musical Fidelity X-Tone.....	19
Myryad MCD 500.....	82
Nordost Blue Heaven .....	53
Ortofon Rohmann.....	15
PAD Elementa .....	54
Pioneer PDS-06.....	67
Prowire Silver.....	54
QED Qnect 2 .....	55
Sonic Link Black .....	55
Sony CDP-XA20ES.....	69
Straightwire Chorus.....	57
TEAC VRDS-9.....	71
Theta Miles CDP .....	39
Titan T4 .....	45
van den Hul D102 III .....	57
van den Hul Frog .....	15
Wilson Benesch Carbon.....	15
XTC CDP-1 .....	83

**46**

**WIN! WIN! WIN!**  
**Fabulous B\*a horn-loaded speakers worth £3,400 in this month's contest.**

# Update

THIS MONTH... WORLD'S "FIRST" TOP-SPEC DIGITAL AMP... AMAZING NAGRA PREAMP... NEW QUAD ELECTROSTATICS...

## In brief



Harman-Kardon's AVR85.

Harman-Kardon has unveiled two new remote-controlled AV receivers. The AVR85 (£1,299.99) incorporates Dolby Digital compatibility, an RDS tuner and high-power, high-current capability. The AVR75 (£999.99) matches most features of the '85 but offers roughly two-thirds the power. ☎ (01908) 317707

Ethos Acoustics, the brand of former BBC designer Graham Whitehead, has announced a 'B' version of the LS5/12A, with an improved, more temperature-independent bass driver and greater sensitivity. ☎ (08000) 187997



The Alphason Akros stands.

Alphason's new Akros speaker stands take their name from the Greek word for topmost. They incorporate Alphason's tension-rod device, claimed to eliminate vibrations, and also offer the option of being filled with mineral aggregate for further damping. They are available in 45cm (£49) or 60cm (£59) heights, with the latter incorporating dual channels to hide two runs of speaker cable for bi-wiring. ☎ (01942) 678000

## A TACTile sound

It's the world's first true digital audio power amplifier — or so say the makers of the TACT Millennium. Like the Harman prototype revealed exclusively in *HFC* 149, the Millennium takes digital signals from a CD player or digital recorder, and converts them directly into sound with no need for D-A conversion.

According to the manufacturer this endows it with an efficiency of 90 per cent, allowing it to run cooler than most Class A or AB designs.

In further claims the maker says this amp will develop RMS power of 150 Watts per channel into eight Ohms and 300 Watts per channel into four Ohms, deliver 100 Amps of current per channel, offer a dynamic range in excess of 120dB, exhibit a maximum signal-to-noise ratio of 98dB and limit harmonic distortion and noise (THD+N) to less than 0.1 percent across the audio band.

An optional analogue-to-digital (ADC) module will be available to permit hook-up of non-digital sources such as

tuners and turntables.

The Millennium, a joint venture between Toccat Technology of Denmark and NAD Electronics of London, is scheduled for release onto the US market by April 1998, at an estimated price of \$12,000 (£7,500). TACT Audio Europe ☎ +45 86 27 75 00

TACT's Millennium: the world's first digital power amp?



JBL's new Harmony: CD and RDS FM in portable format.

## Wake up in Harmony

It's clock-radio-on-steroids time over at JBL, where the guys in the lifestyle department have just announced a state of Harmony. This sweet name describes a go-anywhere CD player/RDS FM tuner that'll be yours for £349.99.

Claiming to run happily on AC mains, a car's cigar-lighter socket or its own rechargeable battery, Harmony is allegedly smaller than a 14-inch portable TV.

Built-in there are two 80mm-diameter full-range speakers and a 100mm-diameter, bass-reflex-loaded, long-throw subwoofer.

It has two alarms assignable to either CD or tuner, plus sleep and snooze functions — and a credit-card-sized remote control.

JBL ☎ (01908) 317707

## A little CDXtra help

Naim's new CDX is yet another new specialist British CD player to sport the High-Definition Compatible Digital (HDCD) badge. Like the Arcam Alpha 8SE (reviewed on p65), the CDX incorporates Pacific Microsonics PMD-100 HDCD decoder/digital filter, though in Naim's case it is partnered by dual Burr-Brown PCM 1702K D to A converters.

The CDX, presented in Naim's minimalist house style and set to retail for £2,200, claims to benefit from a fully double-regulated power supply, and a "fully optimised" master-clock intended to secure low jitter.

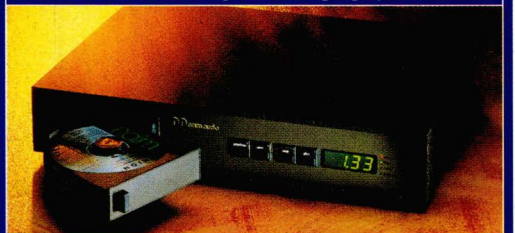
Audio outputs are derived from a seven-pole analogue filter, and supplied from a claimed 2.1V, sub-10-Ohm impedance output.

The player may be upgraded by the addition of an external XPS power supply (£TBA), which will also serve Naim's next-generation flagship CD player, the CDS.

A Philips SAA 7376 servo controller chip is said to run the CDX's transport drive mechanism. In turn this is driven by a microprocessor running proprietary Naim software, which aims to simplify the user interface by providing unusual features such as Track Cancel.

Naim Audio ☎ (01722) 332266

Naim's new HDCD-compatible CD player, the CDX.



# Hi-fi hails Nagra

The name of Nagra has been well known to professional recording engineers for years, thanks to its top-notch tape recorders of yore, and more recently the Nagra-D 24-bit digital machine. Now the company has made its first venture into hi-fi with the PL-P valve preamp and phono stage, priced at £7,450.

Housed in an all-metal casing like Nagra's pro products, the PL-P is driven from nickel-cadmium batteries which are charged by the same mains device as used in the Nagra-D. Internal power supplies use proprietary dual DC-to-DC converters, which are claimed to eliminate deleterious voltage ripples.

The unit is composed of Class A vacuum-tube amplification stages, and incorporates Nagra's unique Modulometer signal level meter, whose semi-logarithmic scale is said to display both peak-programme and volume-unit levels.

A Swiss-made precision rotary switch controls input selection between a moving magnet, moving coil and three line inputs. Phono sockets are side mounted. Signal

levels are controlled by dual potentiometers ganged together with a geared clutch mechanism.

Both capacitance and resistance of the phono stage input may be selected individually. There are two Class A triode valve amplifier sections per channel. Nagra Kudelski (GB) Ltd ☎ (01727) 810002

Nagra's new £7,450 PL-P valve preamp and phono stage.



## Put the pedal to the metal

Arriving to bolster the 'prestige' end of Acoustic Energy's speaker range, all of the magnetically-shielded 500 Series of floorstanding enclosures feature a 130mm-diameter mid-bass drive-unit with die-cast chassis and 'pressed' metal cone.

High frequencies are handled by a 25mm silk-dome tweeter, while the reflex-loaded cabinet is fashioned from 18mm MDF and covered in real-wood veneer — choices are 'Black', 'Antique' and 'Georgian'.

To improve stability there are die-cast-alloy base-plinths with 8mm-long tensile steel spikes, plus factory-fitted mass loading inserts into the bass of the cabinet.

UK retail prices will range from £750 to £1,200. Acoustic Energy ☎ (01285) 654432

Acoustic Energy's 500 Series: priced from £750 to £1,200.



## Rotel's ample proportions

The budget amplifier war heats up with a fresh entry to the fray by Rotel, in the shape of its RA921 integrated amp, priced at £99.95.

Pitched against the AMC 3020 and NAD 310 at the cheapest end of the market, the RA921 claims to offer a power output of 20 Watts per channel, backed up by a "substantial" power supply.

There are four inputs, including one for moving-magnet phono, plus a tape loop. A pair of 'limited-range' tone controls complete the complement of controls.

Rotel has also announced a new stereo power amp, the

## It's show time!

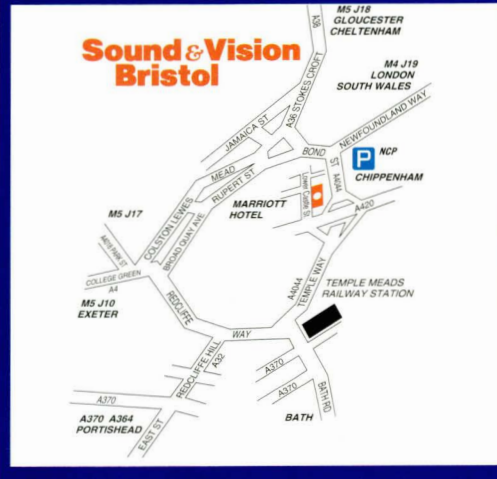
By the time this issue hits the streets, only eight days will remain before 1998's Sound & Vision Bristol show, to be held in the city's Marriott hotel on Lower Castle Street.

Organisers claim that over 68 brands have booked space at the show, which will be held from February 20th to 22nd. (It's open from 11.00am to 6.00pm on the Friday, 10.00am to 5.00pm thereafter.)

Top hi-fi attractions, it is said, will include first hearing of the long-awaited Arcam Alpha 9 24-bit CD player, Naim's new CDX CD player, three new electrostatic speakers from Quad and the debut of Meridian's 'Euro-spec' DVD player.

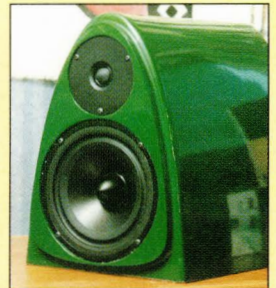
Tickets cost £5.00 for adults, £3.00 for students, and there is a 10 per cent discount on all products sold at the show.

☎ (01222) 228565 or ☎ (01865) 760844



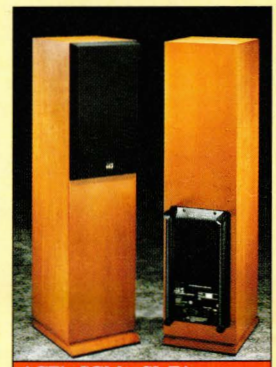
## In brief

Alpha-Dot is a new security marking system, using pinhead-sized labels printed with a personal identification code assigned to individual users. Its maker, Alpha Scientific Ltd, claims police forces have been supplied with equipment to identify Alpha-Dot markers on stolen goods and thereby return them to their rightful owners. They are applied from a "lip-stick-sized" dispenser, and pack prices start at £24.95. ☎ (0345) 573329



Horizon Audio's Eiger.

New from Horizon Audio of Exeter: the Eiger speaker is ridged like a Toblerone and moulded in one piece from Polycrystalline. It employs a "patented" bass-loading system in which standing waves are created at 'every' frequency from two Hertz to 10kHz, thus increasing Q factor and yielding "an exceptionally smooth frequency response" and "wonderfully deep bass", according to the maker. Sensitivity is claimed to be 88dB/Wm; power handling 100 Watts RMS. ☎ (01392) 499078



ATC's SCM20SL TA.

ATC has launched an active version of its award-winning SCM20T speaker. The £3,750 SCM20SL TA will be offered in a range of real-wood veneers. ☎ (01285) 760561

Sales of LP records are increasing, claims music retailer Tower Records. The company's store in Camden, London, reports vinyl taking a 15 per cent share

The latest lightweight champ contender: Rotel's RA921.





# THERE ARE SPEAKERS, AND THERE ARE GREAT ORATORS...

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**Hi-Fi World** JUNE 1997

"... the Jamos prove capable of wide open soundstaging, wonderfully free-breathing dynamics and a winning combination of glorious bass power with smoothly-integrated midband ambience and sweet, clear treble."

**What Hi-Fi?** APRIL 1997 ★★★★★

"For the Classical listener, however, it can offer something that few other box loudspeakers

can: that insight into the music that we all desire but all too rarely experience."

**GRAMOPHONE** FEBRUARY 1997

"It is a true audiophile component that will bring out the best in high-quality partnering equipment."

**EUROPEAN LOUDSPEAKER OF THE YEAR, EISA AWARDS 1997-98**

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# ◀ Wharfedale, Quad consolidate

Wharfedale and Quad, recently integrated under the IAG banner (see *Update*, HFC 171), set out their amply stocked stall at the recent WCES in Las Vegas.

The hot tickets for their show were the first new electrostatic designs from Quad in 15 years (both larger and smaller than the existing ESL-63), alongside the first fruit of Wharfedale's four-year investigation into flat-panel speakers: an NXT module designed for multi-room and AV.

Meanwhile retro-fi fans will be keen to hear of IAG's plans to re-launch Leak, the highly-respected but long-neglected electronics brand.

Quad's new ESL-988 and ESL-989 electrostatics claim greater structural rigidity and tighter tolerances than their predecessor, an upgraded power supply and a switch to expand dynamic range when humidity is low.

Also new from Quad were prototypes of the 99 Series electronics, due mid-1998, which, like the current 77 Series, are equipped with the Quadlink data bus, optional two-way remote handset and midi-width casework. To kick off there will be a CD player, preamp, FM tuner and both one- and two-channel power amps. The 909 'high power' two-channel amp and a Dolby-Digital-ready home cinema processor will follow.

Less headline-grabbing but still notable from Wharfedale were a range of powered subwoofers and a limited-edition version of the 16-year-old Diamond series

speaker. The latter has been developed from the current Diamond 7.2 model and features Wharfedale's 'exclusive' homopolymer sandwich bass-mid cone.

Three new series of conventional speakers continue in the 'precious stones' theme. There are two five-strong ranges: Sapphire (budget) and Opal (reflex-ported). While the four members of the Emerald range feature 'craftsman-built' real-wood-veneered cabinets.

The Airedale brand unveiled the five-strong York range of speakers incorporating new drive-units and three models with auxiliary bass radiators (ABRs).

Wharfedale's first range of electronics came under the spotlight, including the AVR-405 AV receiver (pictured). IAG ☎ (01480) 447700

Wharfedale's launch into electronics: the AVR-405.



## New smooth Contour

If it ain't broke, don't fix it — as the saying goes. But Danish loudspeaker manufacturer Dynaudio has thrown caution to the wind by revising the popular Contour 1.3 stand-mount to mark II status.

Like all Dynaudio speakers the Contour 1.3 deploys the company's own drive-units. In the mkII version there's a new woofer whose 75mm-diameter aluminium voice-coil is the result of 'years' of painstaking development. The tweeter is now Dynaudio's Esotec D-260 unit which claims to avoid compression.

The dividing network is said to be of first-order character, and to comprise glued-down 'audiophile-grade' components. Impedance, claims Dynaudio, is flat above 200Hz.

The cabinet benefits from a modified bass-reflex port, which aims to reduce port noise. Contour 1.3mkII retails for £1,200.

Dynaudio ☎ (01732) 451938



## Serious surrounds

KEF has announced a new home cinema speaker system built to the Home THX standard of LucasFilm. Its enclosure complement comprises the TDM 23C centre-channel, the TDM 23F left, centre, right, the TDM 34DS dipole surround and the TDM 45B 300 Watts active sub. The package price is £3,094. Stablemate Celestion, meanwhile, has unveiled home cinema speakers to match its 'A' series hi-fi speakers (A1, Best Buy HFC 164). On offer are the A4c centre-channel (£499.95), A5r dipole surround (£599.95 per pair) and the 200 Watts A6s active subwoofer (£799.95).

KEF ☎ (01622) 672261 • Celestion ☎ (01622) 687442



KEF's new THX system waits to take up active duties in discerning home cinemas throughout the land. Wharfedale's launch into electronics: the AVR-405.

## Is this the future of high-end audio?

The first DVD-based music carrier was launched at the Las Vegas WCES. Called 24/96 Digital Audio Disc, the new format is a subset of the existing DVD Video standard. It allows a two channel 24-bit word length recording with a sampling rate of 96kHz. Four 24/96 DAD titles have been launched by Classic Records under the title of Master Tape Sound. A further eight titles — including back catalogue from Virgin America — will be launched this year.

The new 24/96 DAD titles can be played on any of the DVD Video players that have been sold to date. However, few of these machines can resolve a true 96kHz sampling rate with a 24-bit word length. American high-end digitalmeisters Muse Electronics and Resolution Audio —

imported by Audiofreaks — are both launching two-box players with the information processing power to resolve the true 24/96 DAD. Both companies were involved in developing the 24/96 DAD digital preparation system used by Classic Records for mastering 24/96 DAD. The two-box players are expected to retail for about £6,500, with integrated models expected later for £5,000 or less.

Trivia fans please note: the name Digital Audio Disc is not new. It has resurfaced after a 17-year slumber. Back in the early '80s DAD was a working title for what became the Compact Disc!

Audiofreaks ☎ (0181) 948 4153

Vivante (DAD software) ☎ (0181) 891 4195

## In brief

of business, thanks to the local trendies' love of collectors' box sets and albums by The Verve, DJ Shadow, DJ Food etc.

Blenheim Exhibitions has announced the return of the 'Live' show at Earl's Court. Designated a 'home electronic, home entertainment' show, Live 98 will be held at London's Earl's Court exhibition centre from September 24th to 28th.

### Dealer News

Phonography is a new hi-fi shop in Ringwood, Hants. It claims to offer two demonstration rooms and hold agencies for Arcam, Naim and Rega among others. Proprietors of Peterborough dealerships The Hi-Fi Company and The Listen Inn of Northampton have acquired London hi-fi showroom KJ West One. The latter, which has been trading since 1967, will undergo "something of a refit". ☎ (0171) 486 8262

### Errata

We regret that due to an administrative error, we omitted to print Recommended selling tags on the AVI S2000MI, Densen Beat B100, Electrocompaniet ECI-2, Musical Fidelity X-Pre/X-A50, Myrrad MI-120, and Talk Electronics Storm 2 amps in last month's group test. Also, the price of the Technics SU-A900mkII amplifier is £399 not £499 as printed. We apologise for any inconvenience caused.

### ALBUMS PLAYED IN THE HI-FI CHOICE OFFICE THIS MONTH

Bentley Rhythm Ace
Bentley Rhythm Ace
Hootie And The Blowfish
Cracked Rear View
The Lemonheads
Car Button Cloth
Fat Boy Slim
Better Living Through Chemistry
Can
Egy Banyasi
King Crimson
Night Watchman
Bill Evans
Undercurrent
Albert Ayer
Spiritual Unity
Antonio Forcione
Acoustic Revenge
Joseph Spence
Livin' on the Hallelujah Side
Brand New Heavies
Shelter
Coldcut
Journeys By DJ

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# Def in Vegas

HFC photographer **Chris Richardson** reports on the weird, wonderful and downright expensive stuff seen at the Las Vegas WCES.

**I**t's early January in Las Vegas, and I'm standing in the *Fi* magazine trade reception. Over at the social leper's table (the one with the ashtray) there's a guy with what looks like a rattlesnake coiled around his neck. His Harley Davidson T-shirt rides the overhang of his gut, and rainbow-mirrored sunglasses cover eyes which, in better light, might have noticed the gathered media hacks recoiling in horror.

In fact, this guy (from Electra Glide Research) holds a length of silver ribbon mains cable, in which *uninsulated* silver strands are separated by non-conductive spacers along the wire's one-metre length. Black webbing covers the whole thing, which measures three inches in diameter. A biker to the bone, he calls it the 'Fat Boy' and it's a snip at just \$2,000 (£1,250).

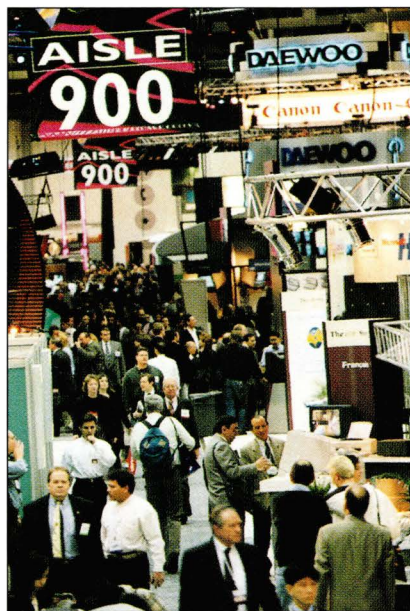
## Hotel California

Despite its best efforts, the hi-fi industry has trouble keeping excess out of the way of music, and never more so than at the annual Winter Consumer Electronics Show (WCES) in Las Vegas. There you'll still find folks who trust in the apparently bottomless pockets of audio fanatics.

More than 1,900 exhibiting companies showcased their wares in five exhibition facilities, and in excess of 90,000 foot-sore visitors ran the full gamut of 'Consumer Technology' products: mobile computing, digital television, custom home theatre systems, car audio, satellite navigation, 900MHz video telephony, wireless phones, multi-channel audio, flat-panel plasma TV monitors, DVD, digital satellite and everything else in between.

## Crazy gear starts here

Amid the nice black boxes and finely-veneered speakers at the Hilton exhibition centre, Audio Design Associates showed the Olympus III (picture 1): a 24-carat, gold-plated, vacuum-tubed digital surround-sound amplifier. Equipped for Dolby's Pro-Logic and Digital, it packs 10 surround sound modes and six audio channels into its solid-brass chassis, and is silver-wired by



hand. It is strangely retro-looking, with six 'magic-eye' preamp valves, and costs a cool \$35,000 (£21,875).

The US shift towards five-channel surround-sound is being vigorously supported not only by hardware manufacturers, but also by record companies — over 10 per cent of current music releases in the US have some form of Dolby encoding.

With that in mind, numerous British speaker manufacturers see a new market emerging in specialist enclosures. These will be aimed at audiophiles who need top-quality two-channel hi-fi, but have succumbed to the 5.1-channel

marketing onslaught. Ruark Loudspeakers was one brand exhibiting at the 'high end' Alexis Park exhibition facility. Marketing director, Stephen Cross, commented: "With the swing towards five channels it will be interesting to see if [the high-end exhibition] remains the same size next year."

Ruark itself is treading the high-end high wire by giving UK distribution to the US-made AudioPrism Mana (pic. 2), an exquisitely-crafted monaural valve power amp, rated at 100 Watts in ultra linear mode. It retails at \$10,000 (£6,250) per pair — at present Ruark's order books are empty...

## A highly-polished sound

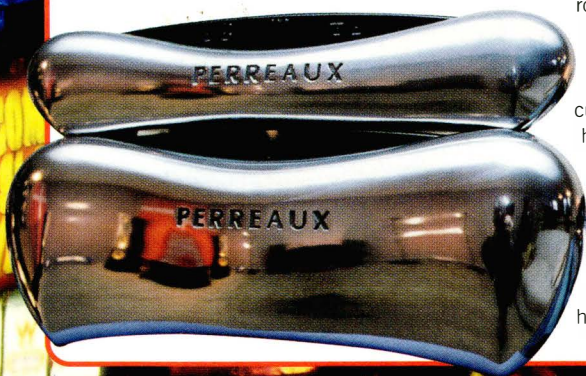
Hidden away in a poky room at the Alexis Park was Duncan Perreaux, famous all over the world for manufacturing serious amps, but still seeking an outlet in the UK. New this year were Perreaux Reference 'Classic' and Reference 'P', one/two/six channel amplifiers and a Dolby-Digital-ready processor with interchangeable front panels.

The 'Classic' option comprises a curvaceous, high-purity cast-aluminium option which will turn your amp into the rear end of a '57 Cadillac; alternatively, if you so desire, you can imitate a Ferrari by opting for the bright-red or black-chrome alternative. The 'P' version is a laser-cut, 10mm-thick slab of aluminium plate, from which 'flying wing' handles protrude at the front, these lending an air of quiet conservatism to a stylistic execution more in keeping with mainstream audio cosmetics. The power and preamp 'Classic' (as illustrated, pic. 3) will set you back \$7,800 (£4,875), for 250 Watts per channel of exquisite sound.

## Some gadgets on the side

If I had lost my way between the Caesar's Palace and Flamingo hotels on the Las Vegas Strip, I could have turned for help to a hand-held Magellan EC-10X World Phone, which would have used US military Global Positioning Satellites (GPS) to place me within 10 metres of the nearest slot machine or baccarat table.

Alas, even gadgetry on this level couldn't help the stretch-limo chauffeur of 'Global Satellite Inc' shut off his car alarm. And it almost seems cute that our Hell's Angel cable purveyor offered me the opportunity to place both hands around his impressive bicep. "Feel that," he drawled with a deep Texan twang. "Ah got another interconnect as thick as that. Ah call it the Anaconda!" That was \$4,000 (£2,500), and I wondered what would go bang first when an unsuspecting creature stepped on it accidentally. A new perspective on the phrase 'Southern Fried', methinks!



# Breakfast in America

Alan Sircom assembles a European-based system of Best Buy and Recommended components, and ends up with a rival to the American dream.

**W**henever we advise readers who are setting up their first system, we rarely suggest they assemble a grab-bag of Best Buy and Recommended components. While our famous swing-tags mark out individual products which excel among their peers, there's no guarantee that a random combination of CD player, amp and speaker will result in harmonious performance.

The art of system building is rather like blending a fine whisky: knowing how to take a number of elements and play to each individual's strengths. But there are so many fine CD players, amps and speakers on the market today, we figured it was time to assemble some of the latest likely contenders, to find out whether their whole would be greater

than the sum of their parts.

Enter the new Arcam Alpha 8SE CD player, which receives a Best Buy on p65 of this issue; the Densen Beat B-100mkII, Recommended last month; and the B&W CDM1SE, an update of the award-winning CDM1 and due to prove its mettle in next month's *Hi-Fi Choice* speaker test.

We reviewed the original Arcam Alpha 8 in issue 163; 13 months later comes its HDCD-equipped sibling, with circuits which are retrofittable to all existing Alpha 7 and 8 players. There has been a great deal of discussion about this new model in the chat area of our Web site (see p88), if only because Arcam's 24-bit equipped Alpha 9 CD flagship has been so long in coming. It is still gestating, but was shown at the Las



Vegas WCES during January, and is due for launch 'soon' according to Arcam.

In the Danish Densen Beat B-100 amp, it is the main circuit board which has been upgraded to mkII status: now it features numerous surface-mount components and an improved power supply. The amp sports a 360VA transformer, 40,000µF of reservoir capacitance and two discrete power supplies per side. The power output has remained unchanged at 66W into an eight Ohm load, according to our lab measurements.

Still awaiting *Choice's* confirmation of its worth is the B&W CDM1SE, though if the standard CDM1 is anything to go by (Recommended, *HFC* 160), our in-depth tests will be little more than a formality. The Pentagram-designed, EISA-Award-winning CDM1 was a tribute to understated product design and elegant cabinetwork, from which the SE version does nothing to detract. It is one of the few speakers that allows for a modicum of room tuning, thanks to removable bungs in the front-firing ports. The latest changes are said to include a 'dispersion modifier' (or phase plug) replacing the dust cap in the 165mm Kevlar bass driver, and a crossover network split into two separate circuit boards.

As befits a system hand-picked from the pages of *Hi-Fi Choice*, this system deserves good cables, stands and tables. Naturally, given B&W's distribution of Kudos speaker

stands, the Best Buy S50 and Recommended S100 models make a perfect foil for the CDM1SEs, especially when part-filled with SoundBytes or similar mass-loading material. For interconnections I found Cable Talk Studio 2 and Linn Analogue to be the products of choice; for speaker hook-up it was down to Kimber 4TC or Cable Talk 3.1 — all solid *Hi-Fi Choice* Recommended kit — to complement the electronics' characteristics. Equipment supports have to be Mana Acoustics all the way with this rig.

**Sound quality**

Three components in the signal chain: each has a clear sonic signature, but as a team they work together like ants. The Arcam is smooth, yet detailed and transparent. The Densen Beat is equally detailed yet dynamic, and lives up to its pacy name. The B&W, meanwhile, is as well-mannered and orderly as a small monitor speaker should be. It's detailed, too.

On the face of it, not necessarily a recipe for success, but in this case our outfit repre-

sented a remarkably successful amalgamation, and a perfect example of how complementary sonic characteristics make the best of good hi-fi components. The CDM1SE speakers tame the Densen's more lively caprices, yet not to the extent of undermining the Beat's dynamics, or clouding the clarity of the Arcam.

Surprise surprise, this rig is also very detailed. It turns its hand to any style of music with ease, giving a 'studio' feel to every kind of music from All Saints to the Mormon Tabernacle Choir. But forget about poorly-recorded bootlegs — this kit does no favours to all those 40-year-old Beatles and Stones out-takes.

There is a palpable sense of musicians playing, especially with the B&W's bung removed: solo acoustic instruments, massed orchestras and choirs, Hendrix at his guitar-mutilating apogee. Audiophiles, especially Americans, love to 'listen into' the mix of a recording, and this system allows that perfectly — with a bit of extra life breathed in by the Densen.

Some might argue that the B&W's excellent sense of control could come across as refinement and restraint. But I strongly recommend this system, especially for those who crave the easy-going sound of American high-end without the prissy manners and stratospheric price tags.

Arcam ☎ (01223) 203203

Densen ☎ (01582) 561227 (UK number, links direct to Denmark at UK rate)

B&W ☎ (01903) 750750

**THE SYSTEM**

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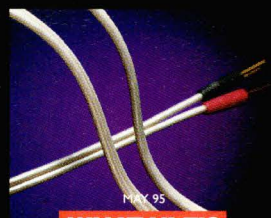
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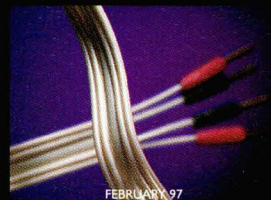
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# Ear Waxings

Can't get to hear the dream phono cartridge you want to buy?

**Jason Kennedy** finds out whether high-end needles sound the same in different turntables.

**"A**nalogue rules!" as Beavis and Butt-head might say. To be more specific, music rules, but it doesn't sound like music until the waveform you hear becomes analogous to that of the recording. And I use the word analogous advisedly. In the good old, bad old days of the LP, there was no need to convert things from analogue to digital and back again. Life was simple, high-fidelity source components were expensive and everyone was happy — well, at least those with fat wallets!

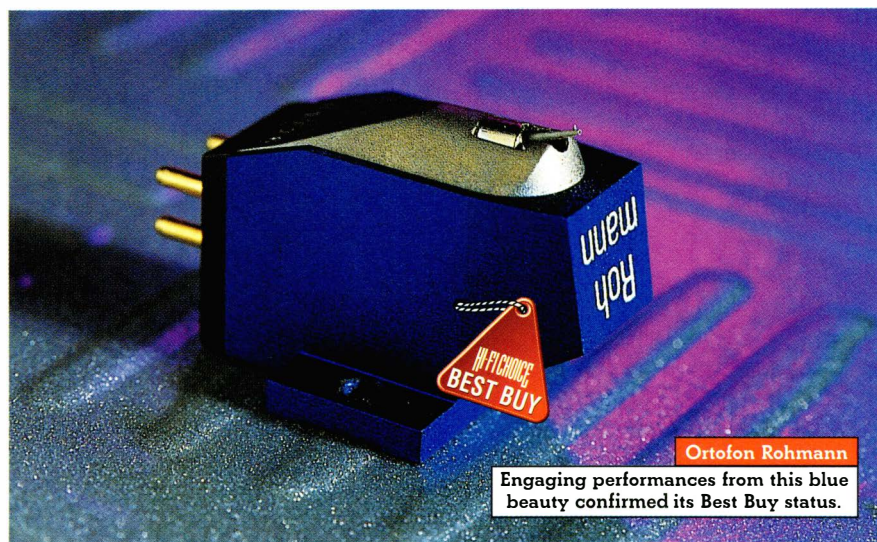
Now that good-quality digital source components and discs are so cheap, inflation has made decent analogue equipment like cartridges seem dear. Moreover, because of their expense, they are rare beasts, and not at all easy to audition for prospective buyers. So I set myself the task of providing a second opinion on the high-end cartridges reviewed last month (*HFC 175*) by our Consultant Ed, Paul Messenger.

## Diamonds are forever

I was fascinated to see whether the same pecking order would result if they were auditioned in the context of an altogether different hi-fi system. (To my chagrin, the Dynavector Te Kaitora had resumed its tour of potential customers.) I spent a day negotiating the remaining six needles into the tender care of an SME Model 20A turntable with model V Goldarm, and squirting the signals thence through DNM 3C/PA3 amps (*Statements*, p40) and JBL 4312mkII speakers (*Ear Waxings*, *HFC 175* p11). This is what I heard...

I started by comparing the £525 Goldring Excel VX with a Denon DL304 (£200). PM struggled to enthuse about the VX, mainly because it was the cheapest model. But by my criteria, the VX performed admirably, offering more grunt, timbral resolution and bass than the cheaper design. It opened up a grungy Zappa LP, transforming the soundstage from a swamp into a concert hall.

To assess the wooden-bodied Grado Reference (£995) I employed the services of a Musical Fidelity X-LP, since the DNM 3C does not have a moving-magnet phono stage, only moving-coil. The results were dynamic to say the least, albeit tainted a little by surface noise. When the going got tough during an Archie Shepp workout, the Grado didn't sound as secure as some but there was plenty



**Ortofon Rohmann**  
Engaging performances from this blue beauty confirmed its Best Buy status.

of power on tap. With a more exalted MM stage to hand, I suspect the goal posts would have shifted even further.

## This mortal moving-coil

The first serious coil on the headshell was Ortofon's blue beauty, the £1,000 Rohmann, which added some real purpose to the proceedings. Performances became far more engaging and the intensity of the musicians really broke through. Although it's not quite as dynamic as the Grado, its all-round capability makes the most of myriad musical styles, and clearly warrants the Best Buy.

With Clearaudio's heavyweight Signature (£1,495), the stakes are upped quite considerably, and now I understand why Paul enquired about the highly-priced Insider model from the range. It maybe not be as atmospheric as the van den Hul Frog (£1,500), and was inclined to highlight surface noise, but its bass power really sets it apart. It transmits the conviction and intensity of musicianship as well as the very best cartridges, even managing to make Frank Zappa sound younger, though it didn't transform a 'bronze age' drum sound.

The none-too-frog-like (but admittedly green) van den Hul Frog offers a more refined but only slightly less substantial version of events. It suited my set-up extremely well, bringing out timbral and temporal subtlety with considerable aplomb. It had an ability to resolve low levels while giving lead instruments their full weight, and it was amazing

to hear the way it teased out the nuances of Eric Clapton's playing on Roger Waters' *Pros And Cons Of Hitchhiking* album.

## Carbon dating

Wilson benesch's lightweight Carbon (£1,572.50) is no stranger to my record collection, having given sterling service *chez* Kennedy for over a year. As Paul noted, its main strength is a miraculous midband, with subtlety and dynamics. It was a little inclined to sound bright with the DNM, but with a Michell Iso HR phono stage you get a more even balance, which might have pushed it higher in Paul's estimation. It's quick and energetic without being insecure, and in the context of the Wb tonearm, it's hard to beat.

The final needle was the stylish Lyra Parnassus DCt (£1,895) an expensive and beautifully-finished moving-coil. Initially I was stunned by its speed and resolution, but over an extended listening period I joined Paul in his irritation at the over-insistent portrayal of high frequencies. You could tame this peaky balance by damping the headshell, along the lines of the Townshend Rock's silicone-fluid-filled troughs for example, but I would deem the Lyra too unforgiving for general recommendation.

So, there was close correlation between my findings and Paul's, which would tend to suggest that a cartridge's character is stronger than a turntable's. I hope this helps some analogue addicts to take the next step up the hi-fi tree! ▲

# Paul Miller's Oasis of Sanity

High efficiency speakers can make a modest amp sound very loud. However, Paul Miller is not convinced they are a hi-fi panacea!

**L**ast month in this column I discussed the sometimes misleading nature of amplifier power-output specifications, and how two amps with nominally identical output can generate dramatically different sound levels.

As promised, this month I will move the spotlight one link further down the chain; to the end of it, in fact — speakers. In particular, I want to address the issue of loudspeaker sensitivity. By way of an example, I will consider two loudspeaker designs from opposite extremes of the spectrum. Both were reviewed in *HFC 174*: the AVI Positron and the Kelly Transducers KT3.

When supplied with an electrical input of 2.83V from an amplifier, the latter speaker can generate a weighted average sound pressure level of 96.3dBA/1m. By contrast, the AVI Positron will only sustain 84.6dBA/1m under precisely the same conditions.

We can clearly demonstrate that, for a given electrical input, the Kelly is going to deliver nearly four times the acoustical output of the AVI Positron. I will refrain from making any sort of value judgement about the very generalised claims made for the sonic superiority of high-sensitivity speakers, as I believe these are difficult to *prove* and, indeed, are hard to pin down in practice.

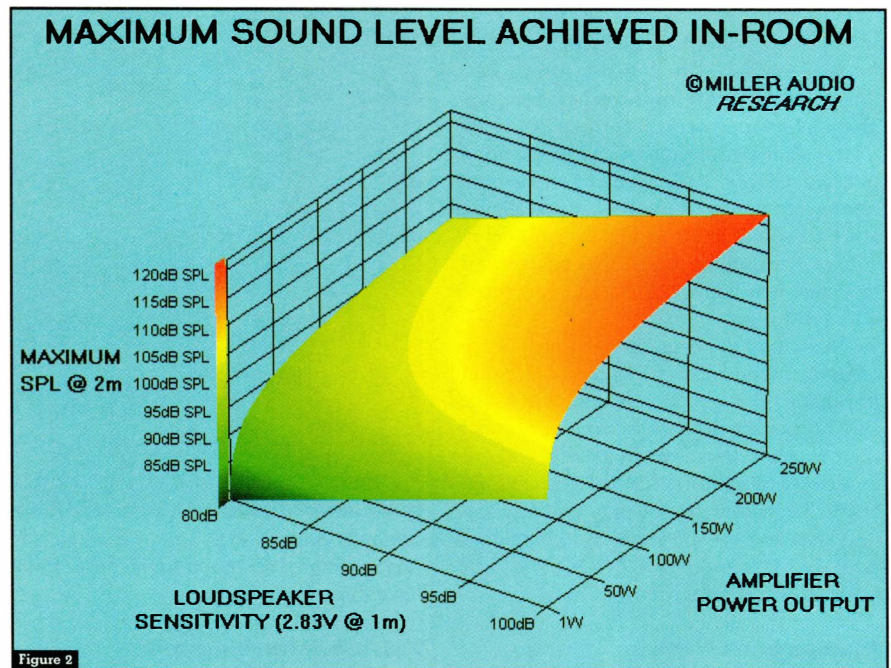


Figure 2

## FIGURE 1: WHY REAL MUSIC IS SO DEMANDING FOR HI-FI

Here we see an excerpt from Mahler's 5th Symphony (Denon COCO-9737), which I used in *HFC 172* to illustrate the dynamic

nature of real musical signals. For those who own this recording, I have highlighted the instruments most readily audible during the tumultuous introduction. And any readers referring back to issue 172 should note that, in this instance, the vertical scale is logarithmic (dB) rather than linear (Vrms).

This month's plot shows that the level of music reproduced by the Kelly Transducers KT3, represented in red, rises 11-12dB above AVI's Positron, in black. If AVI's speaker was to match the Kelly for output, then it would require an input of 10.9V rather than 2.83V.

I'm working in volts here, not Watts. This is for the simple reason that each speaker has a different load impedance, and neither behaves like a simple eight-Ohm resistor. If they did, then via Ohm's law we could extrapolate that the Kelly requires a one Watt input (2.83V across eight Ohms) and the AVI 14.9 Watts (10.9V across eight Ohms) to achieve the same sound pressure level.

This ratio is maintained



Kelly Transducers KT3

HI-FI CHOICE

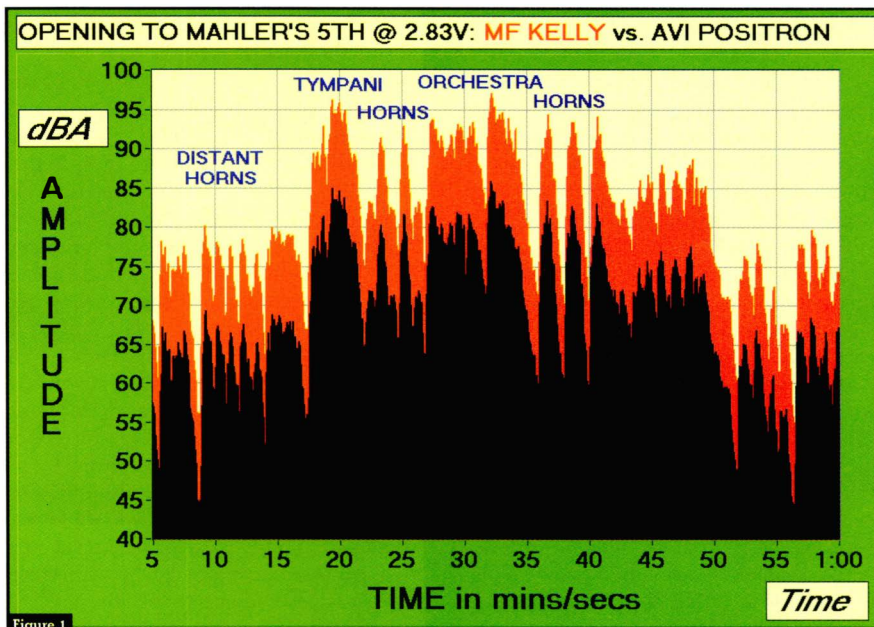


Figure 1



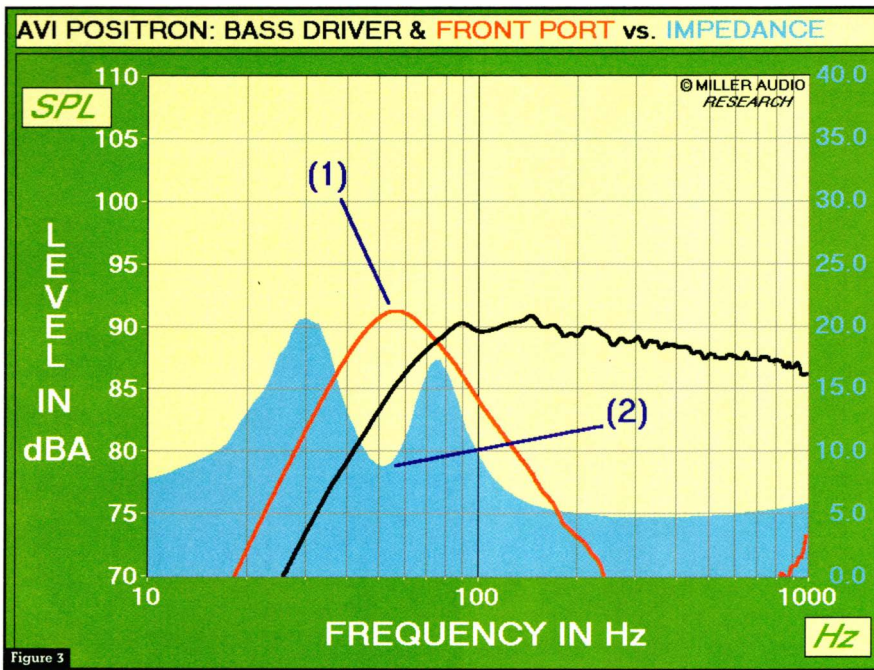


Figure 3

fairly closely up to the maximum in-room levels of both speakers (113dBA and 102dBA respectively), thus demonstrating, all other things being equal, that the MF has about 11dB of extra dynamic range over the AVI.

**FIGURE 2: HOW TO WORK OUT A SYSTEM'S LOUDNESS POTENTIAL**

This chart enables readers to estimate the maximum loudness capability of their own amplifier/speaker combinations, assuming a room of 'average' dimensions and acoustical properties, and a listening position at least two metres from the speakers.

Simply plot the notional 1m/1Watt (2.83V/8 Ohm) sensitivity of your speakers against the maximum (8 Ohm) power output of your amplifier, and read off the maximum sound pressure level (SPL) from the coloured scale. Green represents a modest <100dB maximum SPL; red represents the real concert-hall levels into which (unless you want to damage your hearing) you should not stray on a long-term basis every day.

The yellow band represents an output of between 103-105dB, which is a healthy maximum for 'the 'average' hi-fi loudspeaker. You can see from the plot that a low-ish 85dB sensitivity speaker will require around 220Watts to achieve this level, while one rated at 88dB, will require around 125Watts.

The computer program used to create this plot takes account of various factors which help to simulate the in-room environment, and allow for the heating effect of excessive power inputs. Nevertheless, from the shape of the curve it's possible to see that a doubling in amplifier power only prompts a 3dB increase in SPL from the speaker.

It's easy to see that, in reality, choosing a more sensitive speaker is a much better idea than choosing a monster amplifier, if high SPLs are the goal. In practical terms this means the Kelly will achieve something like 'real-life' orchestral levels with a 150 Watts amplifier, whereas the Positron would require, say, 2.4 kWatts (off our scale). In practice, the thermal limits of the speaker

voice-coils and crossover network will prevent it from handling more than 200 Watts before gross distortion results.

**FIGURE 3: WHAT THE AMPLIFIER SEES IN SPEAKERS**

I've already suggested that our two speaker examples are a long way from exhibiting the characteristics of textbook eight-Ohm resistors. However, both have very different frequency responses, distortion profiles and dispersion characteristics. It would be taking a liberty to suggest that the Kelly, for example, is a great-sounding speaker just because it is very sensitive.

The converse is true for the AVI Positron. Reduced sensitivity is often the price paid for the design of a neutral loudspeaker. The Positron's load, for example, is a low 7.6 Ohms average, but it does not present any wild swings in impedance (blue curve,



right-hand axis) or phase angle, for the amplifier to negotiate. Moreover, the reflex port has been accurately tuned to 55Hz (1), very close to its 51Hz impedance dip (2), and it remains free of any spurious resonances that might colour the midband, for example.

**FIGURE 4: ARE WE LISTENING TO AMPS OR SPEAKERS?**

Compared to the AVI, the Kelly presents a very different face both to the world — and, importantly, to the amplifier. On the one hand, the main port output at 38Hz (3) is on-target, with the pronounced driver null (4) and dip in impedance (5), but the average load value is 6.1 Ohms and the minimum a low 3.5 Ohms. Therefore, the load is tougher and the swings greater, but the Kelly is demanding a lower output from the amplifier.

This brings us to another crucial question. Are we simply listening to differences in our amplifier's performance 'envelope'? With one speaker it is delivering just a few Watts; the other, less sensitive design calls for tens or hundreds of Watts.

Numerous factors come to bear on the sound quality of a given loudspeaker. It is a complicated matter. For example, our (early) sample of the Kelly harboured a strong internal resonance that revealed itself on the bass driver's response (6), the front port output (7) and even the impedance trend (8). Very lightweight cones with high-efficiency motor systems are necessarily quite 'lively' and, therefore, require very special attention. You never get something for nothing, and while high-sensitivity speakers certainly permit the generation of high dynamic range and 'concert hall' levels in the home, they are by no means a panacea for all hi-fi ills.

*Do you have a subject matter for the Oasis?*

*Please contact P.Miller via E-mail on 100576.3021@compuserve.com*

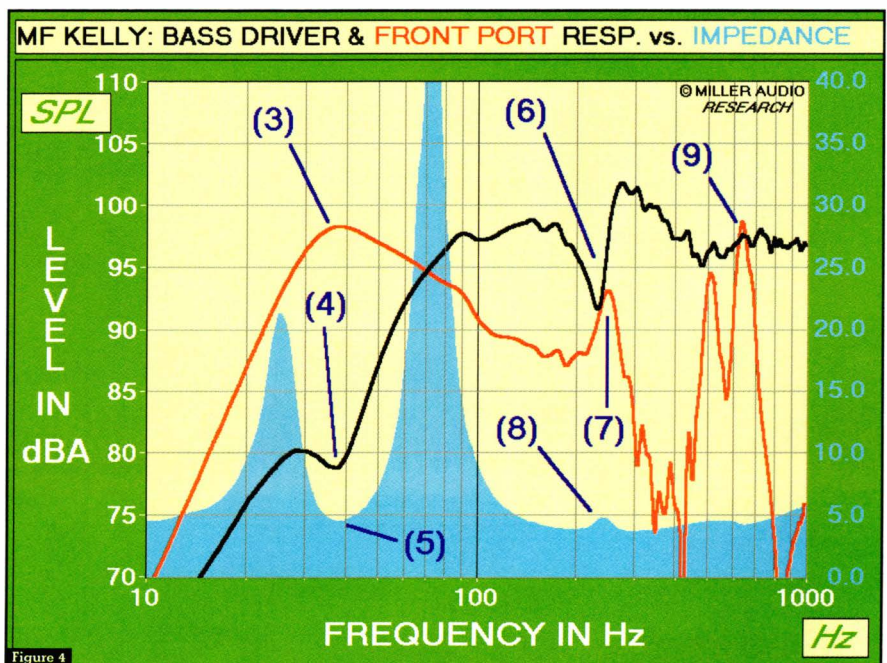


Figure 4

All the best  
from Ken Ishiwata



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# The Jimmy Hughes Experience

Jimmy Hughes explains why he added high frequencies to his hi-fi system, then took them away again. There's nowt so queer as hi-fi folk!

**S**ince the very earliest days of audio, experts have considered it important that the frequency bandwidth of a reproduced signal (ie the lowest lows and the highest highs), should be at least equal to the frequency response of the human ear. This implies a minimum desirable range of 20 to 20,000 cycles per second (20 Hz to 20 kHz as it's known.)

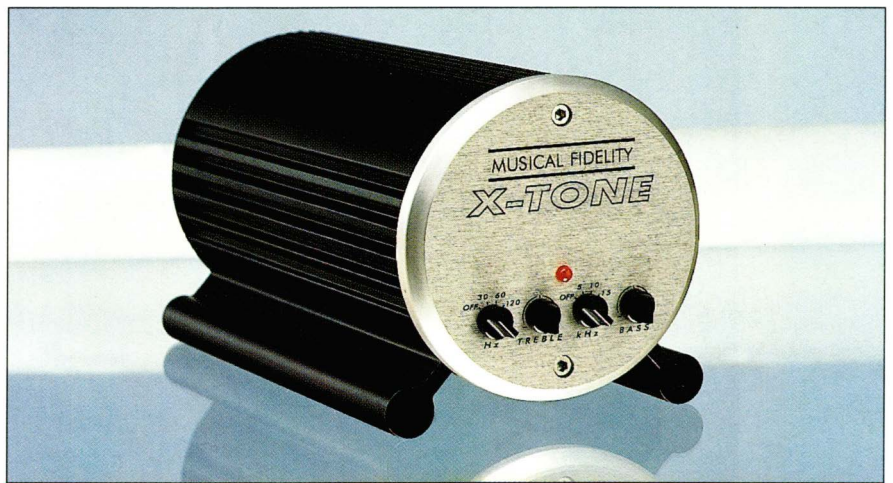
An early complaint about CD was that its high-frequency bandwidth only extends a little above 20kHz before a sharp 'brick-wall' filter chops off any higher frequencies. Although most of us the wrong side of 15 are likely to hear nothing above 18 kHz, some authorities have begun to suggest that even if we can't actually hear the uppermost frequencies in music, we can detect changes in sound quality when those ultra-high notes are filtered out.

One of the biggest improvements I made to my system was to install two cheap, horn-loaded, Motorola piezo tweeters alongside my main speakers. These operate above 12kHz or thereabouts, but are severely attenuated, so their contribution is very small. Indeed, if you play the whole speaker system and put your ear close to these 'super-tweeters', it's virtually impossible to tell if they're actually working, even if you switch them in and out! Back in the listening seat, however, the difference is obvious.

With the super-tweeters in action, the sound has greater focus and immediacy, with tighter bass and better stereo imaging. They seem to improve clarity, detail and bass firmness in ways that are hard to credit subjectively, given how little they seem to contribute and the frequency range they cover. And it's vital not to have them too loud; paradoxically, their effect seems bigger the less you use them!

## Set the tone

For about a year now I have used the X-Tone module from Musical Fidelity, set to give a slight cut above 15kHz, with the control set typically at the 10 or 11 o'clock position. I find this helps to clean up the sound, improving focus and separation. I often prefer to add a little extra treble cut, particularly when listening to older analogue recordings on CD, to give the sound more fullness and body, without losing brilliance or attack.



Discover the unexpected delights of tone control manipulation with a carefully placed X.

Surely there is some conflict, I can hear you suggest, between the use of super tweeters to boost high-frequency output, and restricting it with a tone control. In my observation, however, it's almost as if the loudspeakers need the capability, independent of any particular piece of music, to reproduce the full frequency spectrum. Hence the need for good subwoofers and fast tweeters. Yet paradoxically, the benefits of having such speakers are still apparent even when listening to music with a limited bandwidth.

The audible benefits of a good subwoofer, for example, are evident on the reproduction of music that seems to contain no extreme bass. I enjoy demonstrating the musical effectiveness of the sub by playing the slow movement of Vivaldi's *Concerto for Two Mandolins*, which features just the two solo instruments playing quietly. No bass there, surely? Yet the soundstage collapses without the subs switched in. The same kind of effect occurs with the super-tweeters. Even when playing material taken from old limited-bandwidth '78s, I can detect a the difference made by the super-tweets.

## Old filtered gold

The tone control particularly is of benefit to many older recordings, which are not always best served by wide bandwidth. For example, the series of Vaughan Williams symphonies — recorded in mono, for Decca, in the 1950s by Sir Adrian Boult — sound thin

on CD. Yet the original LPs, especially the Fourth Symphony, sound excellent.

Intriguingly, if I listen with some treble cut above 12kHz (to mimic the upper frequency response of contemporary pick-up cartridges?), the sound firms up and becomes much more solidly focused. Tape hiss is reduced, yet there's no loss of brilliance.

If you're thinking of using the MF X-Tone, it's important to insert it at the correct link in the signal chain. If you're reducing bandwidth (cutting treble and/or bass) it's best to insert the device as far down the line as possible — say between preamp and power amp. That way, noise or stray harmonics/distortion from the preamp will also be attenuated. Conversely, if you want to liven up the sound with some boost, you'll find it pays to place the tone control early in the chain — before the preamp if possible.

Perhaps this rather perverse desire to limit the extreme high-frequency response of my system is a reflection of its inadequacies. Were it more accomplished, perhaps I'd feel no need to make these modifications. Yet I've heard state-of-the-art kit with exactly the same problems. Despite the care that has been lavished upon such pieces, I always find myself wanting to reduce the extreme upper frequencies. All this for me, whose upper frequency hearing response is less extended than it was 10 or 15 years ago. For every new hi-fi mystery we explain, another one takes its place... ▲

# Active Audio AA-88

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AA-88

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AM  
FM

For years music systems have remained the same. Colours, features and styling have become stale, trapped in a void free of fresh ideas and feeling. Music changes, people change, History dictates that we should in-turn follow suit, but the Audio Industry has chosen the safe path substituting fresh ideas for black boxes !

## Active Audio changes all that!

The AA-88 incorporates a high quality pitch control compact disc player, fully programmable Mini Disc Recorder, FM Tuner, stereo integrated hi-fi amplifier and an eleven input DJ mixer along with Vestax's un-surpassed design and audio engineering. The mixer output section allows you to send your music to other systems if you need more than your on-board power output, giving the AA-88 more than domestic appeal.

Let Active Audio with it's fusion of audio elements and Future Retro design convey your feelings about your music, break away from the black box !

# Personal Messages

Captain Cone, **Paul Messenger**, explains that all is not what it seems when it comes to loudspeaker group tests.

**R**eviewing a group of loudspeakers is a simple process of plugging in box after box and listening to your favourite music, right? Wrong. Inherent to the process is a crucial difficulty: the speaker under assessment is, ultimately, the slave of the signal it is fed. Change the CD player or turntable, plug in a fresh amp, and chances are the ranking order of test candidates will change.

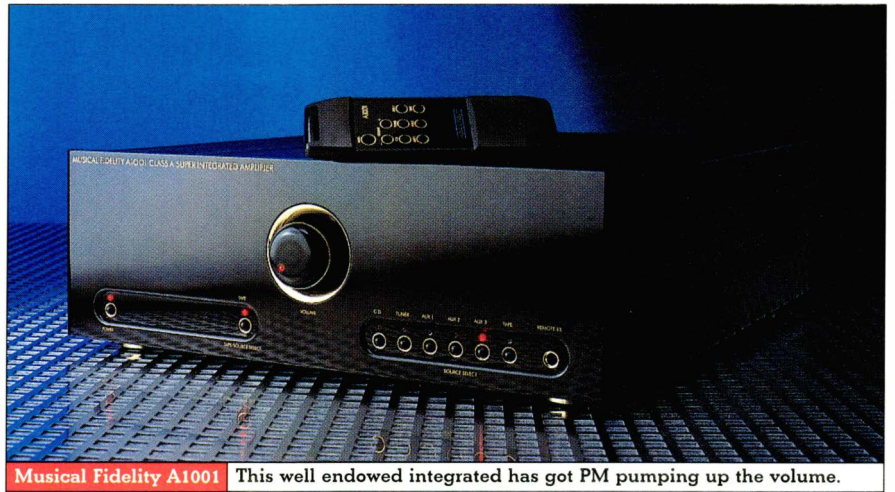
For this very reason, we have undertaken over the last year or so to extend the scope of *Hi-Fi Choice* loudspeaker reviews. While our time-honoured, unsighted listening tests are still propelled by my venerable Linn/Naim rig, nowadays we include extra listening tests using CD players and amps of a different flavour. One knotty problem remains: the criteria by which an 'alternative' system may be selected.

Initially we chose CD player and amp combinations to match the aspirations of speakers being tested. Budget electronics with budget speakers; mid-price with mid-price; and so on. A sensible enough approach at first sight, but it does rather fall foul of the paradox identified in the first paragraph. And there is a further implication: the better the speaker, the more likely it is to show up any deficiencies of the driving components.

The plot thickens further. There's really no such thing as a 'representative' budget system. Such components are by definition significantly compromised, so their performance depends substantially on the balance of trade-offs conceded by their designers. (For this reason, one-make systems often have a head start over mix'n'match combos.)

### Try another flavour

Having experimented with like speakers and electronics, I decided to look instead for sources and amplifiers which offered impeccable hi-fi performance but an alter-



**Musical Fidelity A1001** This well endowed integrated has got PM pumping up the volume.

native flavour to my regular Naim kit. For the last speaker group test (*HFC 174*) I tried three very reputable CD players (Acoustic Precision Eikos, XTC CDP-1, Marantz CD-17 KI Signature) fed through Krell's EISA-Award-winning KAV 300i amplifier. Very satisfactory results all round. However, no sooner had I finished the reviews than the XTC and Marantz CD players were whisked away, leaving me with just the Eikos and Krell. And only a few more days elapsed before the Krell's number was called from the edge of the hi-fi boating pool. I was pondering alternatives when serendipity intervened in the guise of Musical Fidelity proprietor Antony Michaelson. Tucked away in the boot of his car was the enormous A1001 amplifier (*Statements, HFC 172*).

It's pure coincidence that the A1001 arrived just as the Krell was leaving, but the two amps have a lot in common. Both amps are line-level-only integrated designs; are physically large and pack a great deal of punch; and are style-setters in the current trend towards high-price, high-performance integrated models. It is coincidence that both carry exactly the same £2,500 price tag.

The Krell has the cosmetic advantage, and is significantly more compact, but the Musical Fidelity seems better suited to my purposes. Its sound quality differs significantly from the Krell (or, for that matter, the Naim collection), but arguably it's as valid as either, and certainly fights its own corner very effectively. In midband neutrality and naturalness, the other two stand in Musical Fidelity's shade; though its top end is less euphonic than Krell, and less incisive than Naim.

### Powered flight

The A1001 offers a rare combination of very decent sound quality with massive power delivery. It's a sad fact of audiophile life that low-power amps tend to sound better than high-power ones. Naturally, this situation favours higher sensitivity loudspeakers. But low-sensitivity speakers do exist, and the 300 Watts or so offered by this Musical Fidelity should be more than enough to wake up even the most recalcitrant transducer.

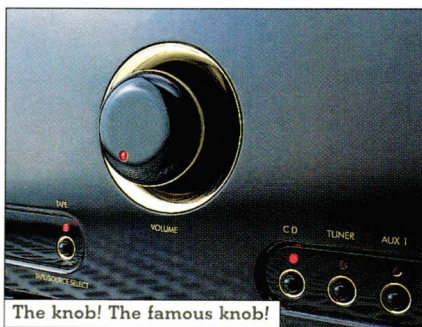
The 70 Watt/eight Ohms-rated Naim NAP135s are adequate for most speakers. Theory would predict this power output correlating to a healthy 106dB sound pressure level with 'typical' 88dB/W speakers; though in this case theory and practice don't always coincide. However, the A1001's theoretical extra 6dB of headroom should prove useful with some of the 82-84dB/Watt designs.

(Antony Michaelson would argue that such prodigious power output, when coupled with high-efficiency speakers, also permits the generation of chair-shaking 'concert' listening levels in the domestic listening room. See also Paul Miller's feature on p16. -Ed.)

To what extent theory translates into reality will have to wait. A largish stand-mount design called Xanadu, from a new brand called Audio Spectrum, carries a hefty price-tag (around £1,595 including stands), but uses classy SEAS drivers in a very good-looking enclosure. Sensitivity is low, but power handling and transparency are excellent. Will this model put the case for the defence of low-efficiency designs? Watch this space! ▲

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The knob! The famous knob!



# The best things in life cost quite a bit, actually.

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 Cardiff Audio Excellence 01222 228565  
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 Chester Audio Excellence 01244 345576  
 Croydon Spaldings 0181 654 1231

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Norwich Martins Hi Fi 01603 627010  
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 Oxford Radford Hi Fi 01865 511241  
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 Rhos-on-Sea Electrotrader 01492 548932  
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# Write on!

TELL US YOUR VIEWS ON HI-FI AND MUSIC. THE BEST LETTER EVERY MONTH WINS AN M-S POLO-SHIRT!

## LETTER OF THE MONTH

### Competition shocks

For some reason that is not apparent, *Hi-Fi Choice* restricts its competition entries to persons living in the UK.

It seems only fair that anyone who buys a magazine should be eligible to enter any competition that is featured in that publication. As your magazine is sold in countries outside the UK, it is reasonable to conclude that your sales figures are used to attract the advertising in the magazine.

I fully realise that there are mains voltage and frequency differences in foreign countries to be considered, and that some countries may place an import tax on luxury goods.

However, surely every competition in a magazine that I buy, should be open for me to enter. I believe that a contract exists between the publisher and myself and that I am entitled to no more or less than any other customer. If my query is considered interesting enough to feature in your magazine, then my entries should find their place in your competitions. And yes, I will gladly pay the courier!

*Thomas Fox, Kinnegad, Ireland*

*Simon Davies, Publisher, replies... Hi-Fi Choice is published in the UK and, as such, is governed by UK law as it relates to the competitions we run and the prizes we offer. Any countries outside the UK have their own legal guidelines for competitions that may not be the same as our own. Furthermore, as you point out, many overseas countries have a different mains electricity supply to our own. This can create problems in obtaining the appropriate version of the equipment offered as a prize. Finally, if a manufacturer does not have an agent in an overseas market and a fault develops, then obtaining service could prove difficult.*

### Quad revisited

My local hi-fi specialist shop informed me that Quad was taken over about two years ago and that its service department was no longer effective, but that recently there had been a management buy-out of the Quad company.

Can you confirm this and can you state whether the company is still upholding the traditional standards of Quad service for its older equipment? Or is there any other company that you can recommend?

*Iain le Duc, Chippenham*

*Quad is now owned by IAG (as reported in HFC 171) and its service department is alive and well. It can be contacted on ☎ (01480) 452561. CR*

### Global issues

Great to see *Hi-Fi Choice* on the Net. I have been an on/off reader for a while and a subscriber to *What Hi-Fi?* for a few years.

While both mags are good (although I'm a bit disappointed that *What Hi-Fi?* has gone a bit downmarket with too much focus on midi systems), your decision to finally get on the Web has now resulted in me

dropping my *What Hi-Fi?* subscription and subscribing instead to *Hi-Fi Choice*.

As some general feedback on your magazine, you need to remain as independent of the manufacturers as possible, as this is the reason most international subscribers buy your mag.

Also, I would very much like to see some more reviews of hi-fi equipment that's available elsewhere in the world.

Keep up the good work.

*Michael Parker, Darwin, Australia*



Precision: keep the phase linear.

### Get connected

I've been following the 'phase linear' discussion (as exemplified by the various Pioneer Precision and Eikos products) in *Hi-Fi Choice* with a lot of interest. I'm still trying to upgrade, but I need to get the finances sorted out first!

One thing in which I think your readers might be interested: a list of Web links on phase-linearity and various other topics. Perhaps you could have a corner of a page somewhere for these interesting sources of information — they are after all free, and very often straight from the horse's mouth.

Three to get you going, all related to the Precision range and the Acoustic Precision set-ups, are: Electrofluidics ([www.blue-chip.com/efx/](http://www.blue-chip.com/efx/)), EJ Jordan web page ([### OUR ADDRESS](http://www.inter-</a></p></div><div data-bbox=)

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☎ 0171-917 5512.

✉ [editor.hifichoice@dennis.co.uk](mailto:editor.hifichoice@dennis.co.uk)

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

[ads.co.uk/ejjordan/index.htm](http://ads.co.uk/ejjordan/index.htm)) and Michell Engineering ([www.wavenet.co.uk/werner/michell/welcome.html](http://www.wavenet.co.uk/werner/michell/welcome.html)).

Also, how about taking the Precision system you reviewed last month (HFC 174) and adding a REL sub? Because of the price however, try not to use the £3k Stadium II this time. What's it like with something a little more in its price range, such as a Q100E, Strata or Storm for example? At least I could dream of owning this some day!

*Chris Totten via the Internet*

*There is the possibility of a sub-woofer review in the spring. In the meantime watch Ultra Vivian Scene, as we believe David Vivian will be trying some subs with a pair of Eikos FR1s, and may well audition some of the models you mention. UK*

## Chemise!

The best letter every month wins a stylish polo-shirt from Mordaunt-Short, purveyors of fine loudspeakers. Available in black with a discreet sleeve logo. One 'large' size fits all.



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L O U D S P E A K E R S

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# UNLIKE MOST SPEAKER COMPANIES, WE BUILD SPEAKERS. WE DON'T BUY THEM.

My, my. Things nowadays are not always what they're cracked up to be. We're almost positive it all started with the egg-free egg. Yum. Then came caffeine-free coffee, with the taste gone, too. In a matter of days, the conscience-free politician followed, who within moments was justly run over by his own badge-engineered car. And now, here comes the ultimate horror: The Dynaudio-free Dynaudio speaker.

No way! Just kidding! In fact, it's just the other way around; 90% of all other high-end manufacturers do not painstakingly develop and build their own speakers at all. Instead, their designers tend to use our justly famous Esotar and Esotec tweeters, only to sell them to you, the truth-loving English public, as their own most expensive creations. We, being true

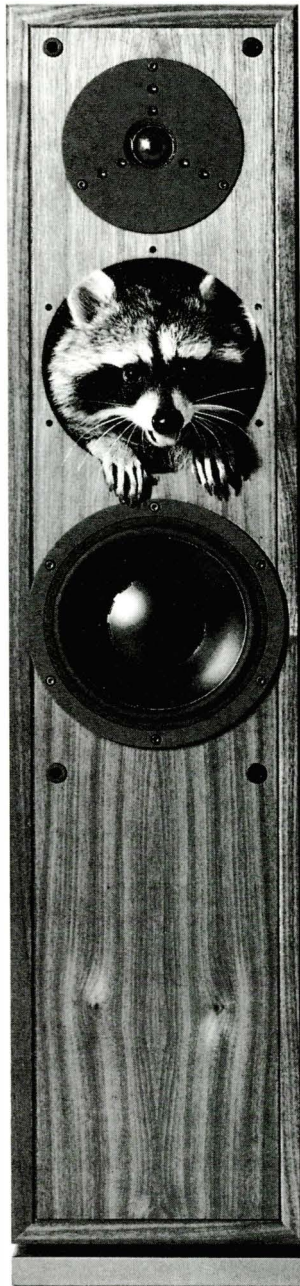
Danes, still believe in a 100% in-house production.

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# Write on!



It's handbags at dawn for a MiniDisc maven.

## A bit miffed

I logged onto your Web site to see what I could find on MiniDisc systems and found nothing. Your search facilities are useless.... if I knew all the details you ask for, then I would log on to the manufacturer's site, or phone and ask them for a brochure.

You should de-register me as I shall not bother visiting again. Name and address withheld

*The bag is full of power today!*

## Gap in the market

Thanks for putting your magazine on the Net; I find it very enjoyable to browse through the online comments and reviews. I am a subscriber to *Hi-Fi Choice* anyway, so a confirmed hi-fi addict, but it is still great to be able to get a fix during lunch breaks at work.

You ask for suggestions on your site, so here is mine. Take a look at the Audio Reviews site (<http://www.audioreview.com/>). It is the best I have seen, and has a very active market-place section with many bargains. The only drawback is that it is mostly US-based. Perhaps an opportunity for you to fill? Julian Dortort, Reading, Berks

*An interesting suggestion... sv*

## Dynamic? He thinks not

I read with interest the article about budget amplifiers (November 1997). However, I have a major quibble with the method by which results are

reported in your tests.

Why do you infer that a poor quality power-supply regulation figure (represented by dynamic power output) is superior to good-quality regulation? If a high-end Krell, Pass, Levinson, or almost any pure Class A amplifier were included in this test, they would fare rather badly in the dynamic power output test. Strange? I think so. Most competent designers acknowledge that a varying voltage supply has a negative affect on sound quality.

If you don't believe me then have one of your technicians modify an amp from the test so that its power supply is as stiff as possible. Then do a comparative listening test and you will rapidly see the folly of such figures. Dynamic power output is a measure of how BAD an amplifier is, not how good.

Trevor Wilson, Hurstville, NSW, Australia

*We don't know where you got the idea that dynamic power output is a measurement of power supply regulation. As you will see if you read last month's Oasis of Sanity (HFC 175), it's a measure of power output up to one per cent distortion under realistic, music-like conditions.*

*You are correct in suggesting that stiffer power supplies result in better sound quality, however — all other things being equal of course! »*

## Talk don't come cheap

I believe that *Hi-Fi Choice* is an excellent magazine, and I have been a regular reader since January 1996. However, it is still missing something, namely a complete directory of manufacturers' and distributors' postal addresses.

I know you already list telephone/fax numbers and Web sites, but contacting hi-fi manufacturers world-wide, many times a week, or even a day, by phone or fax, gets rather expensive. It can also be very hard for me to contact some British companies if you quote the product without the address.

I am aware it may not be possible to print all the addresses in each issue, but maybe you could print them once a year in your Buyers Guide.

Amaury Vaernewyck, Antwerp, Belgium

*While we print full addresses of every product in a group test, space does not allow us to print them with every entry in the Directory. If you do need to contact so many companies I'd suggest you use e-mail; addresses can be found on our Web site and many others.*

*Regrettably, due to our ever-expanding Directory, and space restrictions, our Manufacturer's Contact list (p130) has been honed down to phone numbers alone. But your idea for an annual address-listing may well come to fruition. sv*

## Money well saved?

I have a Philips CDR 870 on order from my dealer, which I have been advised has just come in, and at a pretty good price of £379. In the meantime, however, I have just seen your January issue and noted the reviewer's serious reservations regarding jitter etc. I am not sure when this article was written, some time ago I assume, but do you know if the current items have been improved?

Also if the problems you mentioned have been cured, is there any way of telling whether the unit is at the latest spec?

You may have saved me an expensive mistake as a certain 'other' magazine said the CDR 870 was the best thing since sliced bread and worth the money just for the CD player alone!

Nigel Pont via the internet



Philips CDR 870: update pending.

*We are still waiting to hear from Philips on the current status of any modifications it is making to the CDR 870, in the light of our critical review in HFC 174 and a similar write up in Hi-Fi News — to date the only titles to have identified the jitter problem. When we have tested a pukka production sample of a revised version of the CDR 870, HFC readers will be the very first to know! sv*

## Seconds out

After converting to your magazine from a considerably more junior competitor (*What Hi-Fi?*) and having read various others, I have decided yours is the best.

But most of my system is secondhand, which has allowed me a greater choice of hi-fi, and access to more exotic kit. I have a Cambridge Audio Discmagic/Dacmagic/Digiflex interconnect, Aiwa AD-F450, Toshiba V855 VCR, Exposure Super V/XI/XII pre-power, Acoustic Energy AE100s on Atacama SE24s with (original) Audioquest Jade Cable, Cable Talk Reference and Wireworld Atlantis. Total value: £4,450.

Money well spent, you may think, as it creates an effortless and beautiful sound with a dynamic character, rare at the price. But I actually paid £1,700, and not one piece of kit is in less than mint condition nor less than three years old, except for the Audioquest Jade.

So why don't you have some articles on the second-hand market place?

Rob Brown, via the internet

*Why don't we spend much time on the secondhand market? Pure economics: magazines survive on advertising, not copy sales, and only Exchange & Mart levels of classified advertising are self-supporting. If we devoted more space to second-hand hi-fi more people would be buying it and you would have more trouble finding your bargains! sv*

# THE REAL DEAL

After the success of our recently-launched Hi-Fi Dealer Of The Year Award, **Stan Vincent** explains the numerous benefits of acquiring audiophilia from a specialist stockist. All with a little help from our readers...

**H**ands up who's made the journey from hypermarket hell to hi-fi heaven? You have to undergo the former to truly appreciate the latter.

Buying hi-fi isn't hard, but it does require an investment of time — and courage — by the purchaser. Time, because you have to become aware of your sonic preferences before you can find the system that suits. Courage, because unless you're a seasoned veteran, you'll have to place your ears in the care of a third party. All good hi-fi dealers should encourage you to spend as much of the former — and need as little of the latter — as possible. And that's why *Hi-Fi Choice*, together with sponsors Marantz and Tannoy, conceived an award to honour the best places in Britain to buy high-fidelity kit.

Readers who picked up last month's issue will know that the winner of our 1997 Award was the Prestwich, North Manchester branch of Richer Sounds. Manager John Clayton can be seen on this page receiving his winner's certificate.

The result of this contest was decided purely on the basis of votes cast by *Hi-Fi Choice* readers, and when assembled after all the closing dates, they made a fascinating scrapbook of the attributes that a specialist outlet should possess. So here, with a lot of help from my friends, is a guide to the kind of qualities you should seek when choosing a dealer for the first time.

## The human touch

A specialist dealer's high standard of service is the first and perhaps most important facet of the breed. A quality retailer should treat you like a human being, not a sales statistic, right from the word go. And this should extend from the time of purchase right into the future when you get your gear home and, eventually, want to upgrade it. Here are some of our reader's comments about their local dealers.

"Service — plain, simple, old-fashioned service excellence, that's all," wrote Mr PJ about the Hi-Fi Studios in Sunnyfields, Doncaster. "Cheerful [sales assistant] Brandon's greatest gift is his 'high fidelity' to customers," said Mr BC of London's Cornflake Shop. "They managed to reduce



It's hard to beat the Richer outlets for range.

the waiting time for my speakers from four to six weeks to two weeks," qualifies Mr NF's thumbs-up for Sevenoaks Hi-Fi & Video in Kingston, Surrey. "On-site visit, changed amplifier immediately, contacted manufacturer, stayed in touch, constantly concerned and helpful," was how Mr JE described Practical Hi-Fi of Warrington.

Obviously, a key part of a hi-fi dealer's service is stocking a wide range of equipment and having both the facilities and time to demonstrate it properly. And here, we are pleased to report, standards are high all over the country. "Great demo room, professional yet friendly atmosphere," commented Mr JC on David Orton Audio Visual in Stevenage. "Keen to mix'n'match separates until I was completely happy," said Mr RB of J&A Cameras, Videos & Hi-Fi of Devon. "On a very busy Saturday afternoon they found time to listen, demonstrate and explain individually," confirmed Mr PT in his comment on Richer Sounds' Leeds branch.

Providing such facilities and allowing them to be used extensively by potential customers is not a cheap undertaking for a specialist hi-fi retailer. For every customer who buys a product following an audition, there must be at least five who just walk away. This is why the price of equipment in

the specialist's window is unlikely to be the cheapest you'll see. There's no such thing as a free dem — you pay for it in profit margin. But isn't it nicer to choose something in comfortable surroundings at leisure, rather than under pressure?

As well as demonstration facilities, you're also drawing on the unbiased advice and deep product knowledge that hi-fi sales staff should possess — and do, on the evidence of the following quotes. "I asked a few hi-fi questions and received great advice plus a hi-fi demo — no pushy sales

## HI-FI DEALER OF THE YEAR

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**TANNOY**



John Clayton (second right), manager of Richer Sounds' Prestwich branch in North Manchester, receives his *Hi-Fi Choice* Dealer of the Year 1997 certificate from *Hi-Fi Choice* publisher Simon Davies (second left). Julian Richer, Chairman of Richer Sounds (left) and John Hill from Marantz (right) look on.

John Clayton won a holiday in New York as his prize. So too did the sender of one voting form nominating the store, David Hewitt of Gisburn, Lancs. "Cheerful, non-patronising, extremely helpful staff," he said of the store's sales team. "Courteous manner; gives advice to match one's pocket!" was David's accolade for John.

talk," said Mr JB about Doug Brady Hi-Fi in Otley, W. Yorks. "He would never sell you a turkey," opines Mr NT about Griffin Audio in Birmingham. "Approachable, competent, friendly, with sound hi-fi knowledge but without the hard sell." comments Mr MC on Richer Sounds' branch near London Bridge station in London. While Mr LH cites Acoustica of Chester "for knowledgability not superciliousness, enthusiasm without pushiness and commitment free of dogmatism." And in these topsy-turvy days when we all thought vinyl had packed its bags and headed off into the sunset, it's a relief to have outlets like Grahams Hi-Fi in London, whose customer Mr CT praises the shop's "deep technical knowledge of turntable/arm/cartridge systems..."

Most hi-fi buyers have some sort of spending limit, but it's all too easy to be pushed over it by that must-have piece of kit. Not at Richer Sounds in Leeds, though, where "staff are always helpful and polite — never push you over your budget," according to Mr RS.

### How many Watts do you want?

Many people have been put off hi-fi shops by that nightmarish sketch from *Not The Nine O'Clock News* during the 1980s, in which a novice customer was patronised mercilessly. But the truth of the matter is that hi-fi shops are there to help you decide what to buy. Hi-fi retailers like Richer Sounds in Newcastle, for example, give "totally unbiased wise advice, even at expense of their profits!" as far as Mr JP is concerned; while Mr PZ values Billy Vee Sound Systems in South East London "for making my choice easier... and for [the dealer's] honesty and professionalism."

Hi-fi dealers don't just exist to serve first-time customers. They should want those greenhorns coming back again and again for more! A good dealer will do anything to keep clients, by offering inducements such as this novel scheme from Audio T of Gants Hill, as reported by Mr JW: "upgrading within one month of purchase — I moved from a Marantz CD-67 to a CD-63mkII KI Signature." Meanwhile down at Audio Excellence in Swansea, "helpful staff make every visit enjoyable... good advice helped to make my upgrading this year fun and trouble-free," said Mr AW. Back in Harrow, Middx., Mr RB cherishes Harrow Audio "for their exceptional personalised response and attention to detail in supplying my replacement system."

It's a fact of hi-fi life that even the best components won't fulfil their promise if they have not been installed correctly. That's why the best dealers offer a home-installation service. Audio Illusion of Northumberland, Mr JH tells us, "travelled 400 miles to set up kit." But it's equally vital that your dealer holds in stock, not just the main hi-fi components themselves, but also the little finishing touches that make a rig sound just right. "I always find some-



A good dealer will let you relax and listen at your leisure, some even have great coffee as well!

thing to improve the sound of my system," says Mr JS of Infidelity of Kingston. "They've got the greatest sexy gadgets," chortles Mr PM about Mays Electrical of Leicester.

From our postbag it was quite clear that many readers view their dealers as more than just box-shifters. "I feel at home there, unlike in most arrogant hi-fi shops... they talk to you, not down to you," says Mr PW on English Audio of Hereford. Here's another in the same vein from Mr RK: "When I bought my first CD player at the age of 15, (Acoustic Arts of Watford) treated me like an adult." "He takes time to see you as a friend, not just a blank cheque-book!" said Mr AM of Musical Approach in Stafford.

There's no doubt that some retailers establish a very close rapport with their clients, swapping tips on the latest music for example. Sales staff at Lintone Audio of Gateshead, Tyne & Wear "even find the time to discuss recent recordings considered worth a listen," says Mr RW. While Audio Excellence are "the only dealers in Preston who seem to like music more than they like hi-fi!" according to Mr JM of Preston on Audio Excellence.

Even an extended, pressure-free demonstration can leave folks in the dark about which rig will suit them best. Again, the good dealer will work out a client's preferences and prejudices — like Music Matters of Bearwood, West Midlands, where Ms SM reckons they offer "excellent knowledge, superb selection... make sure you get the sound you want." Over at Moorgate Acoustics in Sheffield, Mr BI praised the firm's "ability to demonstrate advantages of a costlier system than I had considered, which has been very rewarding in the long-term."

But if you can't make up your mind at the end of a demonstration, perhaps you

need to try some components at home where you'll feel more comfortable listening. "They are happy to help, spend time with customers and loan equipment at home." Mr SR on Sevenoaks in Oxford.

In your haste to get the gear home and plug it in, don't forget to enquire what kind of guarantee is on offer. The longer the better — and you shouldn't have to pay for it! The British Audio Dealers' Association (BADA) goes one step further by offering a bonding scheme, whereby one shop's warranty and repair obligations will be honoured by other stockists nearby, in the event of closure or going out of business. By no means do BADA's 130 members have a monopoly on the best dealerships, but they do embody the spirit of good practice enunciated above, timid first-timers can use the hotline number — ☎ (0171) 226 4044 — to find a local BADA member. ▲



# Help!

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## Query of the month Brought to you in association with TDK

### Bits of the puzzle

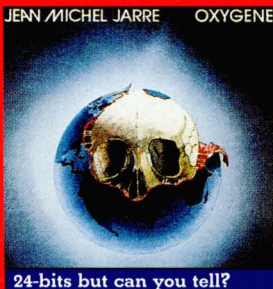
I have been replacing my original CD versions of Jean-Michel Jarre albums with the new Sony Music 96kHz, 24-bit remastered releases. To my ears they exhibit hugely improved transparency and detail when compared with the old ones. Since 24-bit technology has been used, does this mean that the CDs themselves are encoded in 24-bit format, but somehow are read by regular CD players in 16 bits? The album sleeve details mention readiness for DVD 24-bit reproduction.

If the new CDs are 16-bit, but benefit from mastering improvements, will the DVD format require another album release to accommodate 24-bit? Will they need to release a number of albums on a single high-density single disc?

Another question, about MiniDisc: would there be much improvement if I were to use an off-board D-to-A converter from my Sony MDS-JE500 MiniDisc deck, bearing in mind the use of ATRAC compression?

Paul J Coghlin, Sudbury, Suffolk

JEAN MICHEL JARRE OXYGENE



24-bits but can you tell?

We'll address your points in order. With regard to the remastered albums, we actually printed an article on page 34 of last month's issue. The short answer is that no currently available CD carries greater resolution than 16 bits or sampling frequency greater than 44.1kHz. Any time you see '24-bit, 96kHz' blurb on ordinary CD packaging, it's a rather sneaky piece of marketing.

What's happening is that the record companies are preparing for the age of Digital Versatile Disc (DVD) by making ready a maximum-resolution 24-bit, 96kHz master recording, which can be 'downconverted' for conventional CD or, as you suspect correctly, rendered at higher resolution for playback via DVD — which will indeed require a separate (and very different) disc to be pressed.

It is debatable whether an outboard DAC would improve the sound of your MiniDisc recorder. It depends greatly on the quality of the DAC in the player as it stands. However, you might gain a greater improvement by buying a new MD recorder incorporating the latest version of ATRAC, MD's data-reduction system. For the full story, read our test on MD recorders in next month's issue!

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!



### Rapid change

My current system consists of a NAD 312 amp, Philips CD 732 CD player, Sony TC-W435 cassette deck and JBL XE2 speakers. I want to buy a power amplifier to partner the 312, on a budget of £250; and I have £300 to spend on some new loudspeakers. What models would you suggest, and is it worthwhile adding a power amplifier instead of changing the NAD 312? And which interconnects and speaker cables should I try?

Edun Enayet, Lille, France

We can't see exactly what you're trying to achieve with these changes. Do you want more dynamics and grunt, or are you seeking greater resolution? Given that you won't get a lot more of the latter with the front end you're using, I'll presume that energy is the desired quantity. Your JBLs are quite capable of giving more of this, but you'll need a bit more power to achieve it. Rather than adding a power amp we suspect you'd be better served by replacing the NAD. Our suggestions for its replacement would be: Audio Analogue Puccini, Magnum IA 170, Marantz PM-66 KI Signature and the Cyrus SL.



Audio Analogue Puccini

An energetic partner to JBL XE2 speakers.

### Loopzilla

My system comprises Rotel RA930AXII amp, Denon DCD-315 CD player, Aiwa AD-F450 tape deck, KEF Coda 9 speakers, Yamaha DSP-E390 AV processor, KEF Model 90C dialogue speaker and KEF Coda 7 for rear effects.

I am thinking of buying a new amp and CD player, for which I have a budget of up to £800. Important factors are upgradability and, if possible, two tape loops on the amp.

I am considering the Marantz PM-66 KI Sig and the CD-631IKI Sig CD player, or the Pioneer Precision equivalent (A300R and PD-S505). However, I have read that the Cyrus Straight Line is good. What do you think, and do you have any other suggestions?  
Julian Dexter, via the Internet

Both the 'designer' amps you mention have two tape loops, but the Cyrus appears to have just the one. This doesn't narrow the field too much, so the next question is which amp will best match the Coda 9, which is of average sensitivity and quite easy to drive, and thus requires reasonable power reserves in the amp.

The decision will come down to taste and the unpredictable subtleties of system matching. Lug your Coda 9s down to the hi-fi store and do some listening! For our opinion on the Pioneer/Marantz contest, see the Instant Systems review in HFC 174.

### Boyfriend in a coma

My boyfriend is building me a budget hi-fi system, and is presently considering the B&W DM302 speakers; Rotel RA931 amp or RC970/RB971 pre/power amps, or the NAD 312/314 integrated amps; the Sony CDP-XE310 or XE510 CD players; Target speaker stands; plus a set of Tara interconnects and speaker wires.

I am not sure if any of the shortlisted amplifiers can drive the speakers he is planning to buy, and I think the system could be better. I heard the Tannoy Mercury M1s and liked them, but how does this speaker compare to the B&W DM302? I live in the US and he is thinking of spending \$1,500.

Claire Sands, via the Internet

We were not impressed by the Rotel RA931, but the RB971 puts in a better performance, unless the music gets complex. The NAD models are both good, although the NAD 312 is the real musical star of the duo, and the spiritual heir to the throne of the NAD 3020/302. The harman/kardon HK610 is also a very good integrated, although it can be too lively-sounding for some.

As for CD players, we were not too impressed by the Sony CDP-XE510 (too bland), and we have yet to test the XE310.

At this price level our top tips would be the Teac CDP-3450SE (articulate, good with budget amps due to light bass); the Kenwood DP-3080 (bold and punchy, can be aggressive); and the Denon DCD-635 (not much to look at, but every bit as musical as the NAD).

Speakers are the most subjective element of the whole system building game. The B&W DM302 and Tannoy M1 are pretty evenly matched (although the latter has yet to undergo formal Choice testing). If you can stretch to the Tannoy M2, you're in for a real treat.

Target stands are fine, like most of the Tara Labs cables we've tested — especially Quantum CD interconnect. Insist that the Tannoy speakers are mounted upon open-frame, four-pillar stands, and the B&Ws on single-column sand-filled stands, both of which should be 24 inches high, correctly levelled and connected to the speakers with spikes — not Blu-tack!



Teac CDP-3450SE

Well suited to budget system duties.

### Size matters

I am ready to buy a new system for a large room (10m x 5m). I am thinking of a Marantz PM-66 KI Signature, Tannoy Mercury M3 and an as-yet-undecided model of multi-disc CD player. Eventually, I would also like to add a CD recorder. Any suggestions? I have never had such a large room like this before.

Ron Fenton, via the HFC Web site

The PM-66 KI-Sig/Tannoy M3 combo will work well; so too would the same amp with more expensive Dali 606 speakers. As a breed, most multi-disc CD players are best avoided for sound quality, since they waste the potential of a good amp and speakers for the sake of a little extra convenience. Honourable exceptions to the 'avoid-multi-disc' rule are players such as Arcam's Alpha MCD, Anthem's CD1 or one of Trichord's Digital Jukeboxes. Unless there is a fundamental reason why you cannot use a single-disc CD player, go for an Arcam Alpha 7 or 8SE, or the Marantz CD-63KI Signature. With some decent cables you'll have more fun. Try a Pioneer PDR-04 CD recorder.

### Downsizing troubles

I have the following system: Acoustic Precision Eikos CD, Michell Argo HR preamplifier, a pair of Michell Alecto monobloks powering a set of Acoustic Precision FR1 speakers, and a pair of highly-modified Jamo Concert 7s. Unfortunately the Alectos were only on loan and now must be returned; and I have to replace them either with a very cheap pair of second-hand Alectos or another design, as purchase of a new house has necessitated Draconian budget-slashing. My taste in music is very varied but errs away from classical.

Tim Wells, via the HFC Web site

Regrettably there are few amps apart from Alectos that sound like Alectos. You could try the Alecto stereo, or the ECA Lectern. You could also try using the Pioneer A-300R Precision as a power amplifier, but you won't get the same level of bass grunt.

Otherwise, you'll just have to save up and wait for a pair of Alecto monobloks to appear on the second-hand market, or wait a little bit longer for the new

Acoustic Precision amplifier to hit the streets.



ECA Vista/Lectern pre/power

Not quite in Alecto class but pretty close.

### Re-wire ready

I intend to redecorate and possibly rebuild the lower floor of my house. This grants the additional opportunity to undertake some electrical rewiring. What should I do to ensure that the mains power supply to my system is optimum? I've heard of audiophiles installing a separate ring main (or multiple separate ring mains) for hi-fi equipment. I'm prepared to spend the time and money to get this sorted out while I have the opportunity.

So how many rings do I need for the lower floor? What type of cable should I use, if any is somehow more effective than standard mains cable, for rewiring and adding new ring mains? Can you give some hints on the best wall-plugs, sockets, leads, etc; and what parts of the system are best kept on different rings/wall sockets or multiblocks to get the ultimate sound? Aidan Dixon, Gateshead

Before answering any part of this query, may we remind all readers that mains voltages can kill, and we would never recommend that anyone tampers with mains power supplies unless they know exactly what they are doing. Our recommendation is that any work of this nature is undertaken only by an approved electrical contractor.

Further to that caveat, it has been a while since we last undertook a detailed investigation into the vagaries of mains power supply for hi-fi equipment. But we would recommend as a first move, Mr Dixon, that you contact Russ Andrews Accessories, a firm specialising in hi-fi accessories, including many tweaked mains-supply components, such as copper earth spikes and special switchless MK sockets. Call ☎ (01539) 823247 for a copy of the catalogue.

We haven't heard of anyone installing more than one dedicated spur for hi-fi use, but possibly it might be of benefit to keep any digital electronics segregated from non-digital.

The kind of cables used to connect between mains sockets and mains distribution boards are the subject of European legislation and standards — only an approved electrical contractor could advise you here, we're afraid!



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### Gift horse trials

I have been given a pair of Mordaunt-Short MS20i speakers. How do you rate them? Also, could you advise me on the best budget-priced amp and CD I should buy to make the speakers sing? I listen mainly to pop and jazz selections.

Gerry Sabado, via the Internet

Lower-priced Mordaunt-Short speakers like the MS20i are always good, solid performers. When we tested them back in October 1994, they received a Best Buy swing-tag for their midband performance and classy cosmetic presentation. Their bass and treble portrayal did not match the midband, but by no means disgraced the design at its price level. They have a moderate 87dB sensitivity, and an easy six-Ohm-plus impedance which permits them to operate satisfactorily with most budget amplifiers.

Moreover, they are not so revealing that they require a high-end CD player, so why not try the Denon DCD-635 CD player with a harman/kardon HK610 integrated amplifier, by way of partnering electronics? Hook these two together with a pair of Ixos 104 interconnect cables, a bi-wired run of Gale XL315 or Ixos 603, and a pair of sand-filled Atacama SE24 speaker stands. Then you'll have a Hi-Fi Choice Best Buy system with a generous helping of style!



### Grace or power

I have Marantz CD-63II KI Signature CD player and Marantz ST-53 tuner sources, connected through DPA Slink Two and Audioquest Turquoise interconnect cables to a DPA DSP200S preamp and two DPA200S power amplifiers. The pre and power amps are connected with Kimber PBJ interconnect, while Kimber 8VS loudspeaker cable strings out to ProAc Tablette 50 loudspeakers on Goldring MBS 24 sand-filled stands.

In a narrow room measuring 16x9 feet, using only one amp initially, this system lacked only a little bass extension. I tried reducing the speaker-wall distance to about 0.3m, but this made the bass boom. With a second power amplifier the sound lost delicacy. Should I bi-amp with the amplifiers in stereo mode? Jorge Fernandes, Lisbon, Portugal

The Tablette 50s are superb, but have a very definite threshold of loudness and bass definition. You can get more bass out of the speakers, but only at the expense of mid-band clarity as you have experienced. A second power amplifier should improve clarity, but you cannot adjust for incorrectly positioned speakers.

Return the speakers to their original position and deploy more expensive stands (Target R1 is an obvious choice), then use a REL Strata II subwoofer to fill in the bottom end.

Your CD player and lack of good-quality equipment tables are denying the delicacy you seek. Try a more upmarket CD player like the Marantz CD-17 KI Signature, the latest Meridian 506 or even the Acoustic Precision Eikos. Choose equipment isolation platforms from Mana, RATA or Townshend Audio.

### Needle talk

I have upgraded my system by changing an old Manticore Mantra turntable for a Michell Gyrodec with Orbe platter and Origin Live RB300 Arm, and by replacing my ailing Cambridge P55 amplifier with a Musical Fidelity A220 (the audition of which was prompted by your review in HFC 168). I have kept my old speakers — Monitor Audio MA352 on their own stands — but I have changed the speaker cable from Cable Talk 3 to Ixos 603.

What would be a sensible shortlist of cartridges to complement my system? My current Roksan Corus Black is good, but not as comfortable in the Gyrodec/Origin Live as it was in the old Mantra/Linn. It sounds a little flat, and emphasises upper bass and midrange. Would I achieve better results with a moving-coil (m-c) 'needle' like the Ortofon MC15, Sumiko BPS or Denon DL304? R. Dane, via the Internet

All of the m-c cartridges you mention, with the possible exception of the Ortofon, would be well suited to the Gyrodec. But as step-ups can be pretty expensive it might be an idea to consider a good moving-magnet such as Grado's Prestige Gold, Reson's Recca or one of the Nottingham Analogue Tracers.

### Kelly's Heroes meet the X-Files

My current system comprises Systemdek IIX900/Rega RB250/Arcam P77mg record player, Marantz CD-63II KI Signature CD player and Musical Fidelity E100 Elektra amp. Speakers are Musical Fidelity MC2 on Epos open-frame stands. Speaker cable is Audioquest Indigo 2, with Cable Talk Monitor 2 between amp and CD. The electronics are supported by a Mana five-tier stand.

The speakers appear to be the weak link in the chain. I've heard impressive things about the Kelly Transducers KT3, so would it be worthwhile to partner these with a pair of Musical Fidelity X-A50 monobloks to give my existing amp more power and control? I'm not too sure about the cartridge, either.

Would you recommend any alternative courses of action on a budget of £1,500? My musical tastes vary from The Verve to Mozart.

D. Chopra, London E13

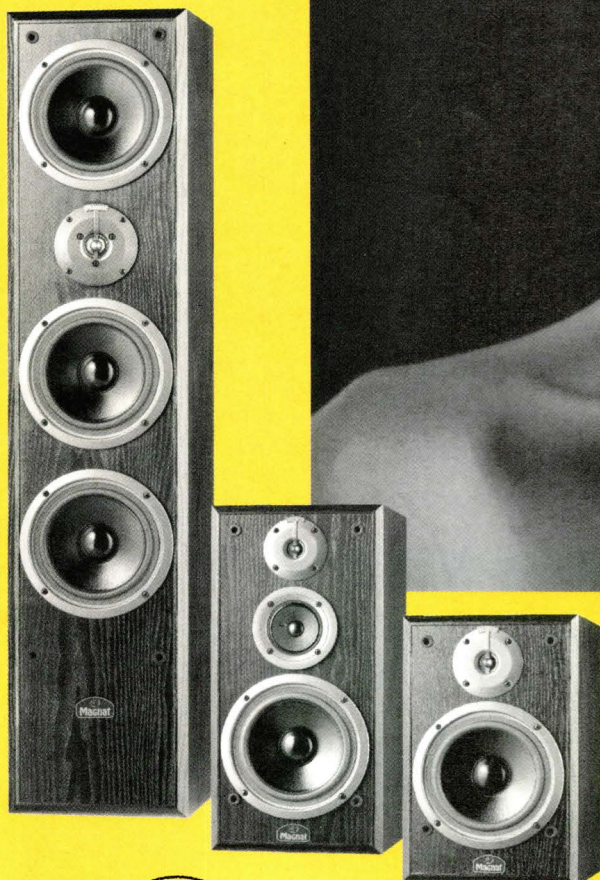
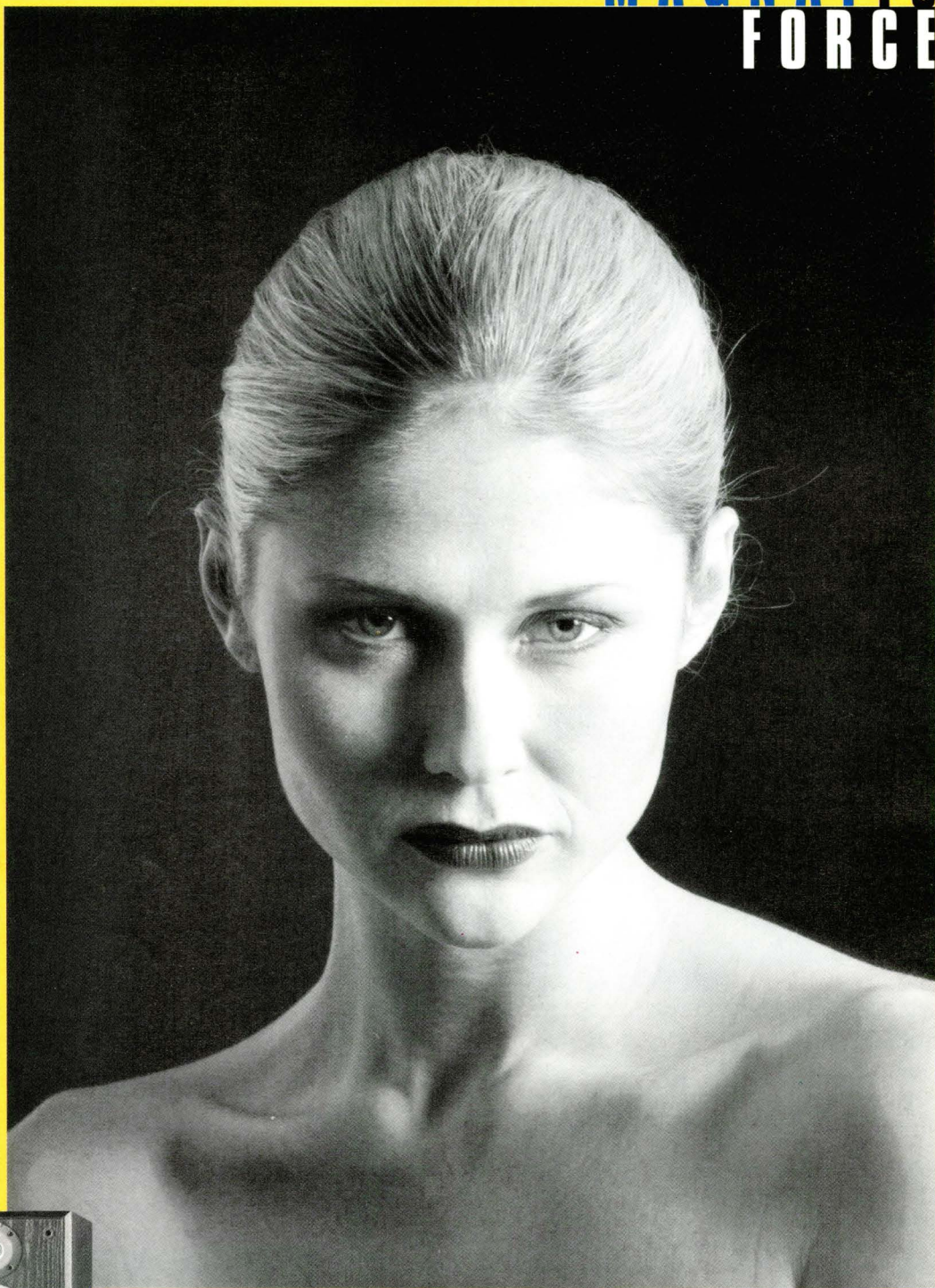
You might indeed find the Kellys right up your street, though they won't sound much like your MC2s. Make sure you try them on the end of your E100 to make sure they'll suit. Despite their high sensitivity they present quite an awkward load to an amp — the X-A50 should cope with them pretty well, as long as you don't want to play flat out all day.

While you're auditioning it would be worth your while



tracking down a pair of JBL 4312mkII: these recently revamped studio monitors are not a lot bigger than your MC2s, but offer a degree of resolution that's rare at their price of £1,000. Decent cartridges to consider include the Denon DL304, Dynavector 10X4II and Grado Prestige Gold.

# MAGNETIC FORCE



Magnat in Cologne, Germany have been developing high quality speaker systems for thirty years. In addition to creating new technologies, the engineers at our R&D base have also maintained a continuous commitment to finding new ways of making high end technology affordable. The approach is similar to that taken in the car industry, where the engineers transfer developments from Formula 1 racing to applications for normal, street legal automobiles.

The VICTORY Series is an excellent example of successful technology transfer. One of the most impressive highlights is the VICTORY tweeter: the polycarbonate

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### LP12 competition

The time has come to revamp my CD source to place it at least on a par with my Linn Sondek LP12. Having toured the hi-fi shops, however, and consulted with various 'experts', I'm confused about the best option to choose. My current player is a Denon DCD-1700, which has performed sterling service for eight years, but now I have the sneaking suspicion it should be upgraded or replaced, even though it was a reasonable player in its day, built substantially. Would the transport mechanism be worn out after eight years?

I've been offered an outboard DAC, but I get the impression from dealers that these units are out of favour, and it's difficult to find a shop stocking more than two models, so proper comparisons are difficult.

Another option appears to be an internal chip upgrade; but apparently this would involve sending my player back to Denon to have its internals remixed.

The final option, and perhaps the most obvious, is to replace it completely: either in stages (DAC first, then a complementary transport system at a later stage); or just a one-box replacement under £1,000.

Graham Liptrot, Epsom, Surrey

*Although your various upgrade options look interesting, we'd be inclined towards the final option: a new unit. Players have been improving steadily in the 15 years that have elapsed since CD's inception, and over the last five years significant improvements have been noted. We are not sure, though, whether £1,000 will purchase you a player good enough to compete with the LP12, which is today quite an expensive turntable. You may have to stretch your budget a little if you want to achieve parity between your digital and analogue sources.*

*On page 62 of this month's issue begins a test of 12 players, among which are several we would recommend you audition; in particular we'd urge you to hear the Marantz CD-17 KI Signature, Meridian 506 and Helios Model 2.*

### All roads lead to A1

My Celestion A1s need an amp and CD to match. Upgradability, headphone plug and one-brand looks are a plus. Some of my ideas include: Marantz PM-17 amplifier and CD-17 KI Signature CD player; Arcam Alpha 9/Alpha 9P bi-amping and Arcam Alpha 8 CD player; NAD 114 pre and two NAD 214 power amps (plus which CD?); Cyrus SL and XPA bi-amps and 0AD3Q CD; Electrocompaniet amp (plus which CD?).

Stefano Predelli, via the HFC Web site

*Among the quintet of options listed, the first and last seem best, particularly the first. The Marantz duo is a great pairing and will suit the A1s perfectly. The Electrocompaniet will also work well, but has no headphone socket. I can't think of a more perfect partner for the ECI-2 than the new Meridian 506 (see review on p79). Neither of these systems are particularly upgradable, however, but they work extremely well in and of themselves, so the upgrade bug may not bite so soon.*

*Of the other alternatives you mention, we do not feel they have the requisite get-up-and-go to make the A1s sing as they should. Few other one-brand alternatives spring to mind, although when Densen brings out a CD player, this could be a worthwhile option, as could the new Alpha 8SE CD player (p65 this issue) hooked up to the new (and as yet untested) Alpha 10 integrated amp.*

Arcam Alpha 8SE

Try one of these for a bit of get up and go.



### Random match

I have a Marantz CD-63II KI Signature CD player and a Cyrus III/XPA amplifier bi-amping Linn Keilidh speakers (with stands). But while my system consists of well-regarded items they just don't sound right together. The tonal balance is always good, and simple music sounds clear and detailed. But music with a fast bass line or dense mix just sounds lifeless, and lacking in vocal clarity. I believe I need to change the speakers — would you agree?

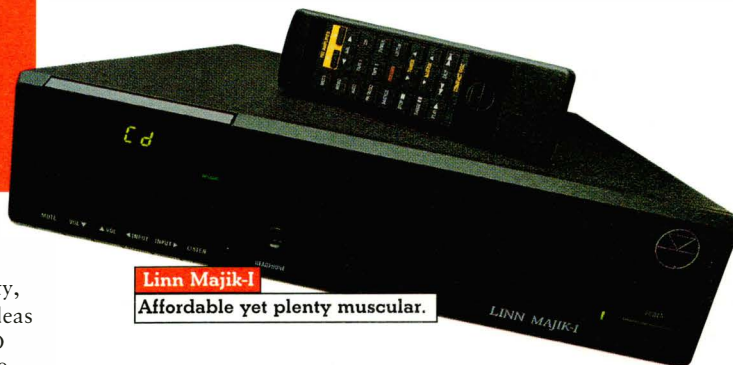
Cabling is Cable Talk 3 bi-wire and Ixos 104 interconnects, and the room is quite small (3.5x5m). Are these factors a great restriction on the sound?

Andy Holman, via the Internet

*Mis-match is a word that springs to mind. Your trio of well-regarded items do not sit together well. There's no simple answer to your problem: you need to change at least one component in your system. The cabling is not innate to the problem, though it would not hurt to acquire better wires in the process.*

*We suspect the bright and breezy Cyrus amplifier is too insubstantial to drive the Keilidhs effectively. You should consider changing either amp or speaker. If the former, try something like a Densen Beat B100mkII, Exposure XX Super, Linn Majik, Musical Fidelity A2 (better yet A220, though you may need to add a better CD player shortly), Naim Nait 3 or Talk Electronics Storm 1. You could also try the new (but as yet untested) Arcam Alpha 10.*

*As for speakers, the choice is almost endless, but the Mission 753 Freedom springs to mind. However, we strongly believe that you should decide on a solution only after transporting your entire system (and your favourite CDs) to your nearest specialist hi-fi dealer, and spend time working out a realistic solution.*



Linn Majik-1  
Affordable yet plenty muscular.

### How close can you get?

My system comprises: Marantz CD-16, two 40-Watt class A mono amps, and Klipsch La Scala speakers. Can I use a passive preamp like the Audio Synthesis Passion (I need about 2m interconnects from the preamp to the amps), or should I take a tube preamp like the Conrad-Johnson PV-10A? Or do you suggest something better? The amps sound extremely dynamic and fast.

Berni Stephanus, Basle, Switzerland

*Unfortunately, unless you can use shorter interconnects, we'd shy away from passive preamplifiers. The greater the length of cable, the more its inherent capacitance can cause a noticeable degree of treble roll-off. If you cannot get the cables down to 1m or less, go for the excellent c-j preamp.*

*If you can use shorter runs of cable you could do down the passive route. However, to prevent the frequency response from becoming dramatically curtailed at extremes, passive preamps need to be partnered with power amplifiers with a relatively high-impedance, low-capacitance input. You should check with the manufacturer of both passive preamplifier and power amplifier to see if the two are compatible.*

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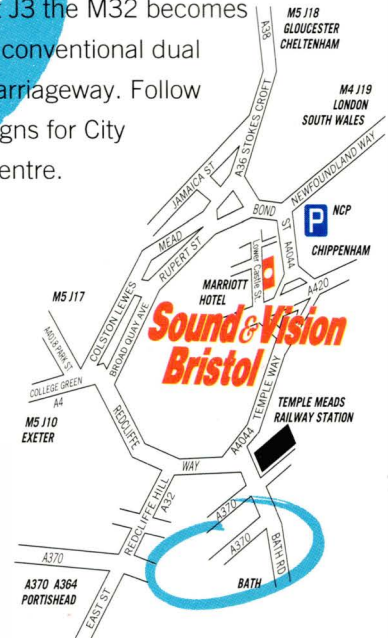
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**Fitzgerald to Shadow**

I have a NAD 3030 of indeterminate age — complete with VU meters! — plus Rotel RCD865 CD player, AR EB101 record deck with Linn cartridge, and JPW Gold Monitors on low-cost Partington stands with Furukawa FS 2T14 speaker cable. The listening room is small, and my musical tastes range from Ella Fitzgerald to DJ Shadow.

I am looking to upgrade the amplifier and CD player. I quite like the warmish sound this rig produces, but I find that the CD player is lacking in lower registers, and sometimes gets messy with busy tracks. The amplifier occasionally seems a little slow, with a slight wallowing quality in the bass.

Any new amp should be equipped for phono playback by default or option. I have a budget of about £1,100 for both items, assuming I upgrade my speakers later in the year. But would I be better off replacing all three in one go, reducing my budget for each component accordingly?

Finally, do you have any suggestions for a replacement cartridge for my deck?

Steve Bennett, West Hyde, Cheshire

*There's a limit to how much improvement you will gain, by changing the source and amp without replacing the speakers at the same time. We'd suggest you visit a few of your local dealers and listen to electronics brands such as Pioneer, Arcam, Marantz, Rotel and Musical Fidelity. Try them with some of the following speakers: Castle Isis, Heybrook Heylios, Mission 750LE and NHT Superone — or Tannoy Mercury M2.*

*A £50+ Ortofon, Grado or Goldring moving-magnet cartridge will greatly improve the sound of your records.*



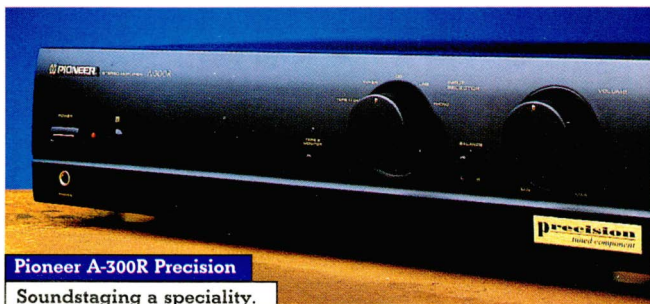
**NHT Superone**  
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**Chain testing**

I want to discover the weak link in my system. I have a Musical Fidelity E10 amp, Sony CDP-761E CD player, NHT Superzero speakers (attached to the wall at ear level and toed-in), and M&K VX-7B subwoofers using Data Louis speaker cables. My room is 12.5ft by 10.6ft. I listen mainly to pop and jazz, and I want more detail and better soundstaging, even at low volumes.

Edwin, Taipei, Taiwan

*Both the amp and the speakers are limiting the ultimate potential of the system, but in many ways it looks well balanced. More efficient speakers are the best way to get better results at low listening levels, but this kind of enclosure is usually larger than that of your NHT. If a bigger box would be unacceptable, try a more subtle amp — the Pioneer A-300R Precision. This should go a long way towards sorting out your soundstaging problems.*



**Pioneer A-300R Precision**  
Soundstaging a speciality.

**Cupboard capers**

I have a Linn Sondek LP12 turntable without Lingo power supply. How would it be improved if I deployed Linn's Trampolin and Cirkus options? (I realise I will have to undertake the Lingo upgrade, but not until funds allow. And what about Naim's Armageddon power-supply?)

The equipment is housed in a broom-cupboard, with cables running into the lounge. Apart from the speakers, there are no hi-fi components in the listening room.

Andrew Millner via the Internet



**Mana six-tier amp stand**  
An LP12 is nought without one.

*We are in two minds on the Cirkus upgrade. It brings the LP12 more in line with the Linn CD sound, but the deck loses some of the charm that has made it so popular over the years. Cirkus effects a more fundamental change than the Lingo power supply. Users of Naim Armageddon PSUs seem to prefer the pre-Cirkus sound. If you only have a handful of 45s (like most LP12 owners), the*

*Armageddon's lack of speed adjustment is not an issue.*

*On the subject of turntable support, while your deck's current resting place confers a good degree of immunity from unwanted structural or airborne vibrations, whatever supports a Linn affects its sound to a degree. Trampolin reduces this considerably, but Trampolin feet are notoriously easy to break — so be careful.*

*We would recommend keeping the standard baseboard (or Linn's new non-Trampolin baseboard, which sounds even better) and rest the deck on a Mana isolation support.*

**Real, deep, punchy**

I am the proud, happy owner of a Rotel RCD965BX CD player and a Technics RS-AZZ cassette deck. My room is a rectangular, 4mx3m shape with a wooden floor. I listen to many kinds of music, ranging from classical to hard rock. What I seek is bass: real, deep, punchy bass, without boom or boxiness. I need an amplifier and loudspeakers; would the Rotel RA-970BX and B&W DM602 satisfy my needs and complement each other? What other systems would you recommend? I have about £1,000 to spend.

Idris Can Kok, Istanbul, Turkey

*Unless you want a Rotel amp to match your CD player, I'd recommend you set your sights a notch higher, on an Audio Analogue Puccini amplifier and a pair of Dali 606 floorstanding speakers. This should give you all the smoothness you will need for classical music, with the punch required for rock. If you are a real bass freak, you might also want to consider investing in a REL Q-100e subwoofer some time later. When you do, remember to exercise restraint when setting up the output level!*



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# HINTS AND TIPS

## DON'T GO CHANGING...

**BEFORE YOU GO A-TWEAKIN' AND A-SWITCHIN', BEAR IN MIND THESE WORDS OF WISDOM FROM JIMMY HUGHES.**

**T**hose who constantly modify or 'tweak' their hi-fi systems would be wise not to discount an oft-neglected procedure: every time you make a change, evaluate it in the context of past upgrades and improvements. The relationship between different hi-fi components is not set in stone — it can be altered profoundly when other aspects of a system are altered.

For example, suppose you replace your speaker cables with wires which, at the time, appear to sound much better. A month or so later, you replace your amplifier. It would be logical to assume that, because your new speaker cables sounded better with the old amp, they will offer the same benefits in conjunction with the new one, too. However, in the arcane world of hi-fi this might not be the case. It could well turn out that the old speaker cables sound preferable with the new amp.

I speak from experience here. As I make changes to my system, sometimes I retrace my steps, only to find that last month's 'Big Improvement' seems to make things worse today. The reason for this is difficult to establish. Perhaps my Big Improvement was actually nothing of the kind — I deluded myself into thinking it was. Maybe some other change has altered the status quo. Could it be that the upgraded component has, somehow, deteriorated with use?

Straightforward science explains some of this. Upgraded speaker cables may improve sound because their electrical capacitance is different. The very same property may prove less beneficial with a different amplifier. It's perfectly logical and predictable that the

ranking order between new and old speaker cables would be different with different amplifiers. I only get confused when component 'upgrades' cause a reduction in sound quality which is much harder to explain rationally.

Unlike politicians, hi-fi enthusiasts needn't pretend that the path of life is straight and uncomplicated. Of course there are twists and turns, and the occasional dead-end. But I can't help worrying when a tweak that once seemed a huge step forward, suddenly makes no difference at all; or worse, actually results in poorer sound. In hi-fi, I have learned, you can't take anything for granted. Adjust one factor in the system and you run the risk of altering relationships between other components. Change one member of a soccer team and the whole squad changes, too.

Recently I inserted the beloved Meridian 518 digital audio processor into the signal chain between my regular Pioneer PD-75 CD transport and an Audio Synthesis DAX Decade DAC. On first reviewing the Meridian back in 1996, I liked it so much I ended up buying one. In the latest configuration, however, its presence degraded the sound. Is nothing sacred?

The moral of this month's tale is to take nothing for granted in hi-fi, especially when evaluating different components in your system. It is difficult, if not impossible, to re-evaluate every previous tweak and upgrade every time you alter something in the system, but from time to time you should check the benefit of changes you have made — if only to confirm the wisdom of earlier decisions!



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# Miles ahead

Alan Sircom goes the full distance with Theta's first integrated CD player.

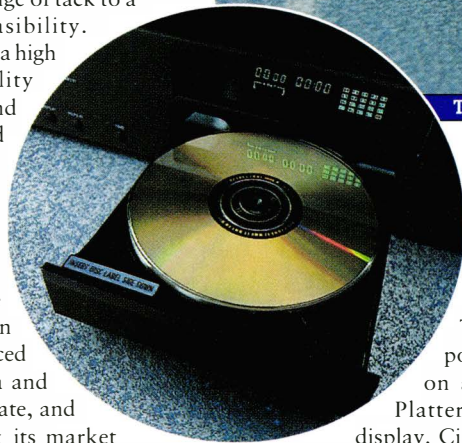
**T**heta has long been a champion of two-box CD players. It can claim with impunity to have been the first to produce a separate digital-to-analogue converter. Since then, Theta has remained resolutely opposed to integrated players — until the arrival of Miles, its new player in just such a vein.

Some ascribe this change of tack to a simple question of feasibility. Nowadays, the public has a high perception of the quality available from a high-end integrated CD player; and thus Theta can introduce a streamlined product like Miles without sacrificing any of its hard-won reputation for excellence. Cynics might argue that reduced interest in two-box players has forced the likes of Krell, Wadia and Mark Levinson to integrate, and Theta is simply keeping its market alive. I suspect there's an element of truth in both arguments.

Miles is available in two distinct versions: the balanced-output version at £2,895, and the single-ended version which costs £400 less. The price differential is not just for effect, as the XLR version of Miles is no pseudo-balanced affair. It uses two of Theta's own hybrid 1/18-bit digital converters per channel, as opposed to one per channel in the single-ended model. The former is said to give cleaner and more accurate results in conjunction with true balanced electronics. My listening seemed to confirm this.

With single-source systems, Miles can be plugged straight into a power amp. To make this possible, Theta has adopted the unique solution of an analogue volume control, where most manufacturers use a digital attenuator. While an analogue pot might introduce a little extra noise by comparison with a digital volume control, it should offer greater low-level resolution.

Theta makes a big show of its programmable digital filter. The company claims, with some justification, that Miles is the only player in its class to be equipped thus. It opens up a range of upgrade options (cleaving to a cornerstone Theta philosophy) but also permits an extensive degree of fine-tuning. Theta claims Miles's digital processing



Theta Miles Pioneer Stable Platter, jitter reduction, phase linearity...

section is 'perfect' in phase and frequency. Another proprietary inclusion is the jitter reduction system.

The player's transport section is based on a Pioneer Stable Platter mechanism and display. Circuits ancillary to these, however, have been heavily redesigned by Theta. Best of all, the whole caboodle is wrapped up in a thick (but understated) matt-black solid front panel, deployed by US high-end companies so well. The chrome-winged 'T' logo is a bit garish, but the rest of the design is major-league elegance — a textbook example of how to make a CD player look like three-grand's-worth.

I used Miles in both balanced and single-ended modes, trying it with and without a preamp in series. I was fortunate to have on hand a Resolution Audio CD50 of similar price and specification — read my review of it in next month's issue.

Making up the rest of the system were a Meridian 502/557 pre/power combo, a pair of Rehdeko RK115a speakers and a REL Q-100e subwoofer (used occasionally). Cables were Cable Talk balanced, DNM and Nordost SBM Reference.

As usual, I allowed a few days for Miles to play CDs on repeat, to ensure the unit was fully warmed up prior to critical listening.

## Kind of blue

The popular, less-than-complementary view of digital audio has been sadly clouded by budget CD players, but in reality digits don't have to sound deleterious. Theta's Miles is a living testament to that assertion. If you find

most digital audio components sound sharp, brash, and lacking both substance and gravitas at the bottom end, Miles is the answer to your prayers. By contrast, if the cleanliness of digital treble does it for you, Miles isn't far off either. Only devotees of steely and unnatural sound will be disappointed.

A great sense of warmth and richness pervades the sound of Miles. And that's warmth and richness in the right sense, not an overblown stab at creating '50s valve sound from a '90s CD player. This is a genuine attempt to dig up the full-bodied sound of CD so often overlooked by designers wrapped up in the sound of digital. Perhaps it is a slightly euphonic approach, but so is the sound of many a high-end product, and they are none the worse for it. If the sound is euphonicly enhanced, the trick has been performed with a deft hand. Miles develops an excellent soundstage for times when you feel like a hi-fi buff, but it also throws a mean party when you feel like getting in touch with your funky side.

Miles and I became close friends late one night with nothing more than a copy of The Eels' *Beautiful Freak* between us. At low levels, with the balanced CD player running straight into my power amp, I became entranced with the sheer sophistication of the sound. Each musician seemed just that little bit more committed, that shade more understandable. Vocals took on greater meaning. The same thing happened to almost every disc I played, from *Let Us Play* by Coldcut and *Undercurrent* by Bill Evans, to Robert Johnson's *Complete Recordings*.

Every time I played a disc, I had to play another... and another. In fact, only one question remained at the end of the review, and it was this: why call a CD player 'Miles'? Surreal name — real product! ▲

*Absolute Sounds* ☎ (0181) 947 5047

# Clear the decks

DNM's amplifiers are expensive and fashioned from the most unlikely materials. Imagine **Jason Kennedy's** surprise, then, as the 3C/PA3 pre-power amps brought his record collection back to life...

**F**or most of us, compromise is a fact of life. We tread a middle path between what is practical and what is desirable. However, for Dennis Morecroft, the man whose initials form the acronymical hi-fi brand DNM, compromise seems unacceptable. He's the kind of guy who drives to work in a Caterham sports car — performance no object, comfort incidental. The very same ethos is clearly manifest in his Swiss-built amplifiers, which exemplify hi-fi at its unprocessed, rough-woven extremes.

On a superficial appraisal, the DNM range does not appear to offer good value for money. For the tidy sum of £5,000 you get the basic 3C Primus preamp and PA3 power amp, both encased in translucent black acrylic, and accompanied by a prosaic out-board power supply. It's the antithesis of Krell, say, or Mark Levinson. The amps weigh very little and in sound they have a vanishingly light touch — it's hard to imagine them ever being described as authoritative.

DNM's system-building philosophy is as rigorously eclectic as Naim's. There are DIN sockets for source and pre/power connections, and the DNM kit is completely non-metallic. Even the screws are plastic. Thus it would be a brave listener who broke away from the company's own preferred solid-core cables, and speaker output sockets themselves are equally unusual. On the power amp there are six two-millimetre sockets per channel — tri-wiring, anyone? For the purpose of this evaluation, I used runs of triple-deck Reson speaker cable. The whole affair is a riposte to those who criticise the limited current capacity of DNM's speaker



The Primus power supply is fancy free.

cable. But for users like me with single-wire terminals, it all ends up with the unusual circumstance of three amp connections being spliced into one at the speaker.

### What you see through is what you get

The 3C preamp is described as the basic version by virtue of being supplied with the Primus starter power supply. More exalted performance is said to be available when one invests in the Twin or Six supplies, at premiums of £1,350 and £2,500 respectively. The PA3 can also be purchased as a PA3S for £3,750: you receive the unconventional honour of half as much power, 22 Watts rather than 45! Clearly, DNM believes less is more.

However, upgrades are on the agenda: any of DNM's acrylic-cased amps can be brought up to the latest spec, with all models up to three years old commanding a trade-in value only £50 less than retail price.

While features are not exactly abundant on the 3C, it's better equipped than DNMs of yore. There are five line inputs of variable sensitivity, complemented by a moving-coil (m-c) phono stage and a tape output. The front panel looks straightforward, but keeps the novice guessing with dual-mono volume controls and a contrary power telltale that lights when the amp is standing-by.

Operating two volume knobs is only marginally less irritating than you'd imagine. Even if physically separate devices are intrinsic to the design, couldn't some kind of rub-



Not a regular cable socket in sight!

ber belt be used to gang the two pots together? Roksan managed the same trick with a double-potted preamp several years ago. Perhaps more egregious is the power amp's seemingly excessive sensitivity. With any speaker efficient enough for the PA3, the volume control's number two is as far as you get. Use the Direct input with a CD player of average output level and you'll be lucky to get past notch one.

### The proof of the hair pudding

Would this rig sound so glorious if it was user-friendly? Probably not. It's a rare piece of hi-fi that offers remarkable performance and a smooth ride. Whatever else it delivers, this combo's resolving powers are better developed than those of any component I've enjoyed for a long time (ever?). In essence the musical presentation is understated and devoid of distortion or muddle. It is totally unflappable; no strand of music becomes tangled. Many amps, even exalted designs, present only fundamentals with aplomb, leaving the subtleties to chance.

Sure, these DNM amps leave their mark on music in one way or another, but with such a light touch that every recording sounds different, while most sound incredible.

It's at low and medium volume levels that the DNMs really score, perhaps because the JBL 4312mkII speakers (*Statements*, HFC 175), used for auditioning, presented too tough a load for the DNMs to drive at high





**DNM 3C preamp and PA3 power amp** The idiosyncrasy is more than skin deep in this innovative amplifier, from Switzerland via Brentwood.

levels. Ideal speakers for DNM are the highly efficient and quick-sounding Rehdekos much favoured by Paul Messenger. Only with high-sensitivity, easy-load speakers will the PA3 begin to sing — the same is true of many other power amps. Nonetheless the JBLs did a fine job in this company — I was just as astonished by their abilities as those displayed by the amp.

The Acoustic Precision Eikos CD player was no doubt crucial to some of the exceptional musical performances I enjoyed during my time with the DNM gear. I had a revelatory experience with *Foxtrot* by Genesis — long an album raved about by pals, but one I've liked rather than loved. This time round I was gripped by the time of the second track; by the last note of the epic *Supper's Ready* my prog-rock soul had been well and truly saved.

Musical surprises are this amp's forte. As a background-listening tool it's not an option unless your tastes are extremely

ambient. On trying to read or talk over a record assumed to be bland, I would be interrupted by sounds previously unheard, music once plain, performances formerly kept under wraps. Zappa's *Trying to Grow a Chin* (Läther), The Future Sound of London's *Far-out Son of a Lung* and the *Ramblings of a Madman*, even Tir Na Nog's *Love Lost* took on dynamics and intensity previously only hinted at.

#### **From one piece of plastic to another**

I played plenty of vinyl, of course, and got interesting results with the DNM 3C's built-in m-c phono stage. With an SME Model 20A/Model V turntable and arm, to begin with I used a favourite Dynavector XX-1 cartridge, which was well suited to the phono stage. Mysteriously, though, it stopped working on one channel — a pity, because on replacing it with the Wilson benesch Carbon, the sound became a little bass light and exposed in the treble. (Paul Messenger

noticed a similar characteristic in the cartridge group test last month.)

The Michell Iso HR phono stage, normally resident in my system, gave better results; but as you will read in my *Ear Waxings* column this month (p15), the DNM 3C's m-c stage elevates the fine art of vinyl retrieval to new heights. Just don't expect it to cover up foibles of your record player.

Having waited a long while to try these amps, I was glad not to be disappointed by them. At first they seemed a little subtle; in no respect do they dress to impress, but before I knew it I was hooked on their phenomenal powers of musical resolution. Even in its most basic guise, the DNM 3C/PA3 pairing is among the most capable amplifiers on the market. If your music collection has grown stale, acquire some of these little plastic boxes and hear those records anew. You'll thank Mr Morecroft a thousand times over. ▲

*Virtual Reality* ☎ (01277) 227355

# Altitude slickness

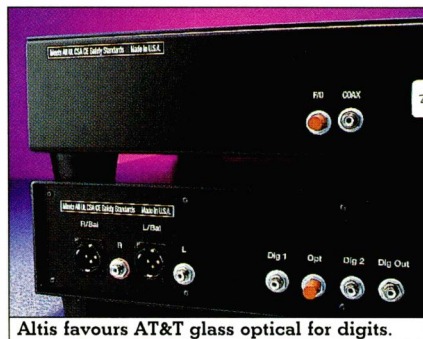
£10,000 is a lot to pay for CD replay. Is the tube-equipped DAC a worthy recompense?

**Jason Kennedy** muses on matters timbral while reviewing a new duo from Altis Audio.

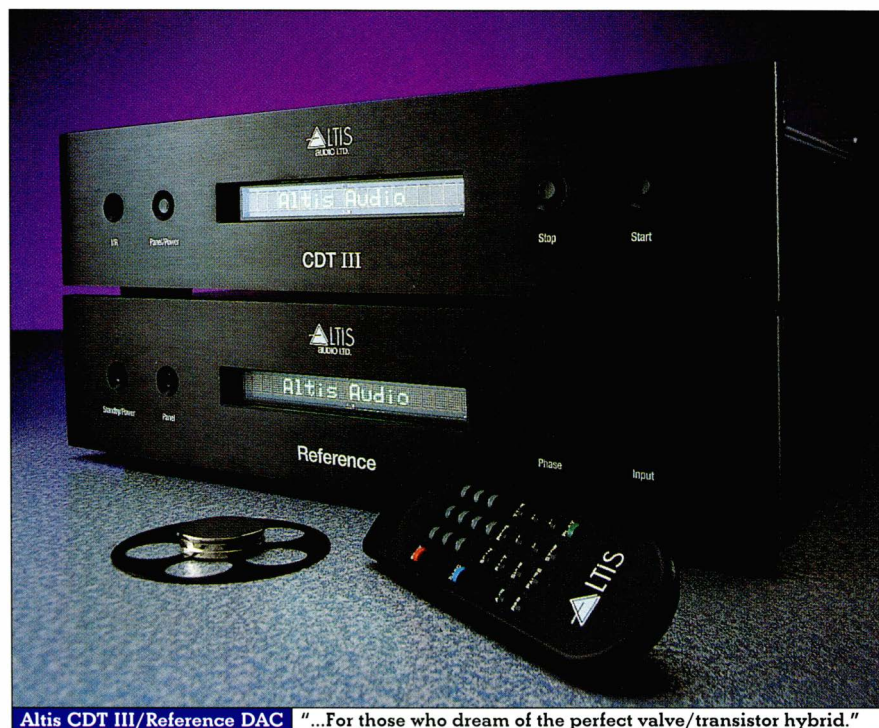
**U**ntil you have visited a show like the Las Vegas WCES, held every year in early January, it's easy to believe that only in the UK are there small and often idiosyncratic hi-fi companies, which produce tiny quantities of lovingly hand-crafted equipment. However, hi-fi enthusiasts the world over have dreams, and many of them turn their dreams into products which they build and sell. A few even make a successful business out of such a venture. One such character, although much more than just a mere enthusiast because of his technical expertise, is Howard Mandel, the force behind Connecticut-based company Altis Audio.

The Altis range comprises three digital audio products: the radically-styled, range-topping Centauri transport; the more conservatively-finished CDT III transport; and the Reference tube processor/DAC. The latter pair were those with which I had the pleasure to spend some time this month, and a most pleasant sojourn it was, too.

With price-tags of £4,995 per unit, this stuff needs to be serious kit, but there's plenty under the bonnet to suggest that it is. I'm told



Altis favours AT&T glass optical for digits.



Altis CDT III/Reference DAC "...For those who dream of the perfect valve/transistor hybrid."

that this rig will be one of the very first CD systems to be compatible with the proposed Super Audio CD (see *HFC* 175), which is one of the new disc formats competing to be the standard for high-definition music replay in the next millennium.

This gear may look plain, but the fluorescent display and Honeywell glass optical digital interface give the game away for those who are acquainted with the high end. Key features include myriad individually-regulated power supplies, relay-operated switches, circuit boards constructed with solder masks over bare copper (which means the tracks themselves are copper), and the aforementioned display, which offers four levels of brightness and claims not to inject noise into the system as many alternatives do.

## A transport of delight

The CDT III uses a Papst motor to drive its top-mounted Philips CD-ROM transport mechanism, with a stainless-steel puck-and-disc arrangement to stop the polycarbonate flying off. The transport will not spin when it is empty, so there should be no risk of dislodging the puck, but dust will settle if the

plastic cover is left off for long periods.

Altis claims the player uses proprietary S/PDIF clock recovery software. In the blurb, it says this permits use of the "clock encoded on each CD, virtually eliminating correlated jitter". Would Tech Ed care to comment?

The Reference DAC has three inputs: two coaxial electrical, one optical to match the transport. The latter is claimed to operate at 350MHz. Pretty quick, huh?

Outputs are the usual phono coaxial and balanced XLR. The UK distributor supplied a couple of alternative optical cables, including one it intends to market, and I was also hoping to benefit from a PAD Dominus powercable, but alas this £1,000-plus salami of a wire didn't arrive before press time. Suffice it to say that Altis is keen on the optical interface, so while normally I would focus attention on the electrical digital output, in this instance I afforded the optical socket more quality time than usual.

Inside the Reference lurks Altis's proprietary DAIR (digital audio input receiver) which is said to reduce incoming jitter to less than 10 picoseconds with other brands of transport, and less than five picoseconds

with its own. Altis claims it uses proprietary filtering and a differential bitstream DAC — quite unusual in multi-bit-oriented US high-end circles. Less radical is the Class A triode tube output stage, an approach much favoured over the pond for its ability to tame digital nasties and enrich the dry sound that vinyl lovers perceive from CD. Unusually, the Reference does not include HDCD decoding.

This equipment is straightforward to use: on the transport, simple start and stop buttons are augmented by a prosaic remote control whose shuffle button acts as a display dimmer. Unfortunately the remote does not operate the DAC, so input, display brightness and phase changes must be engaged on the hoof. Track access is among the slowest I've encountered, and running the CDT III with the display off can be a mystifying process for instant track-change junkies.

Partnering equipment on audition included the DNM 3C/PA3 pre/power amp combo (p40) and JBL 4312mkII speakers (HFC 175); while the Audio Precision Eikos CD player and Trichord's Pulsar DAC/PSU served for comparative purposes, albeit from the perspective of a lower price-point.

### Sound quality

My first impression of the Altis combination was of luxury, a richness in tone of instruments and voices — quite captivating, with classic tube characteristics. If you like to hear the lyrics in obscure songs, or divine whether the violin is an Amati or a Stradivari, tube electronics will give you more help than most. Timbre is a wonderful thing, being the only quality of a sound that truly defines the character of an acoustic instrument or voice. The



Detail of CD-ROM-grade transport mechanism: puck'n'disc hold CD in place during playback.

Altis made a stunning job of both full-scale orchestral pieces, as well as simple solo vocal and guitar pieces like those on Talk Talk's album *Laughing Stock*. There's no shortage of perceived dynamic range from the Reference, although it's not in the league of a Wadia or Helios.

I did perceive a degree of muting or softening in the treble that tends to steal the air and atmosphere from some material. This also blunts leading edges subtly, reducing the sense of timing and impact imparted to the

music. At the other end of the scale the bass lacked real depth. Acoustic bass instruments sounded very convincing, but the Eikos reference CD player extracted more weight from discs. The blame for this cannot be laid wholly at the door of the Altis Reference DAC, since I heard the same effect when the CDT III played through the Pulsar DAC.

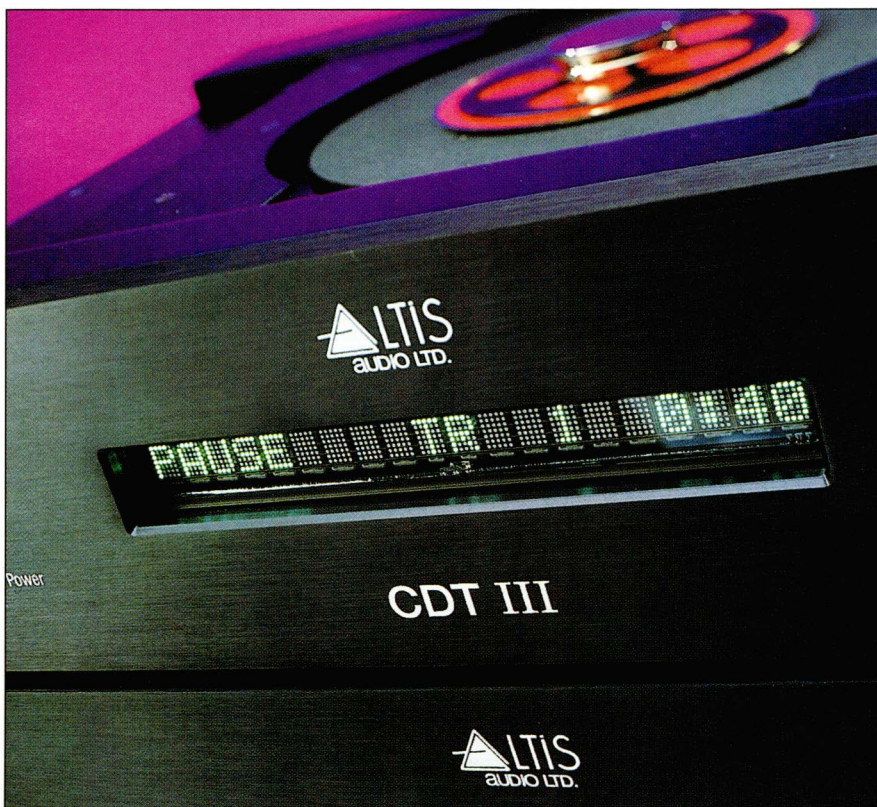
The Altis combination excels at portraying inner detail, the subtle textures that turn a noise into music. When inner detail is missing, so are the inflections and nuances that make sense out of quieter notes in a piece. These, when combined with more obvious fundamental sounds, endow music with the ability to become engrossing and uplifting.

After strenuous A/B comparisons between the optical digital lead and some Eikos electrical coaxial wire, I have to say that I wouldn't elevate the former over the latter. On occasions the electrical route gave more grunt, but then the optical would kick a low note through the system. A good result for optical, but not necessarily a reason to spend an extra £150 on the lead!

### Conclusion

When considered in isolation, away from the necessary but odious comparisons with other components, the Altis combination makes convincing music, especially with acoustic material. Its relaxed yet detailed presentation confers a beguiling listening experience. Perhaps amplification in the classic American mould might suit the combo better than the DNM rig, which is pretty much the antithesis of the Krells and Levinsons with which the Altis system is likely to be demonstrated. In the right system, the CDT III and Reference will fulfil expectations of power and grace for all those who dream of the perfect valve/transistor hybrid. ▲

HEAR ☎ (01232) 319148



Alphanumeric display may be dimmed. Song-shufflers beware: track-to-track access is very slow.

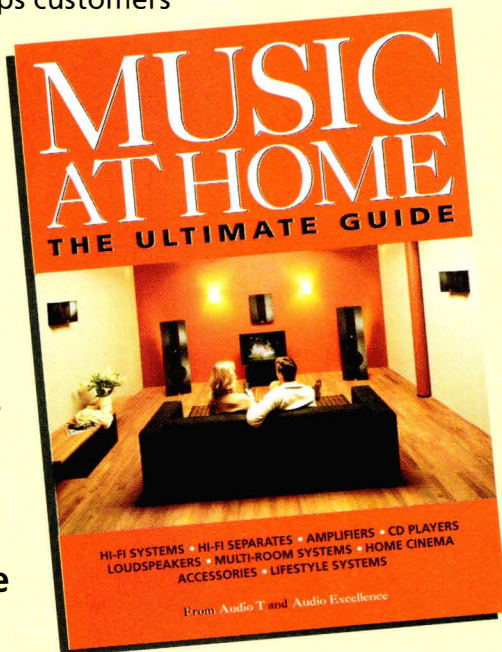
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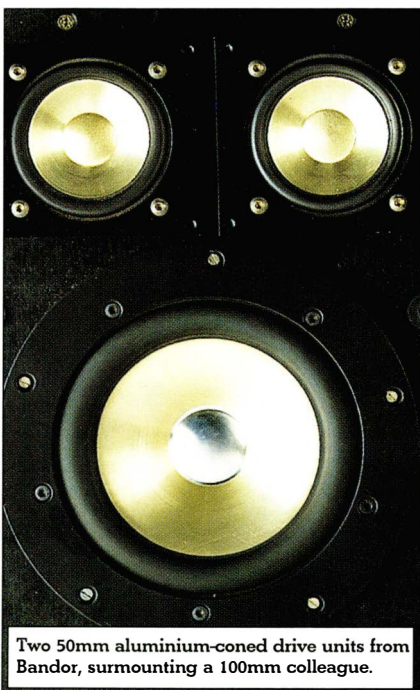
# Raise the Titanic

Does the new Titan Tower T/4 offer the value its weighty box might suggest? **Alan Sircom** tries to balance the scales.

**I**f speakers were priced in the same way as fruit, in £ per pound, the Tower T/4 (from new Essex-based hi-fi company Titan) would be a guaranteed Best Buy. For the money, this is one of the weightiest speakers around, and the tall box feels like a half-ton of nutty slack when you're trying to lift it upstairs. Even in conventional hi-fi terms, the 105cm-tall Tower T/4 offers good material value for its price of £1,175.

The design brief was simple enough. It is a tall, heavy, sealed-box floorstander, incorporating four anodised-aluminium-cone Bandor drive units. At the top of the cabinet sit two 50mm-diameter cones, which are mounted side by side about 10mm proud of the front baffle. These surmount a 100mm unit directly below, while another 100mm unit is installed at the base of the speaker cabinet. At the rear of each speaker is a single set of 4mm terminals. Strangely, given the almost total acceptance of the concept among hi-fi enthusiasts the world over, there is no provision for spikes on the plinth, and neither bi- nor tri-wiring is an option.

The use of anodised-aluminium drivers



Two 50mm aluminium-coned drive units from Bandor, surmounting a 100mm colleague.

does drag down sensitivity to a claimed (low-ish) 86dB/Watt/m. Nominal impedance is suggested to be eight Ohms; listening suggests this a fairly accurate quotation.

The speaker can be driven by virtually any amplifier, up to the manufacturer's recommended 60-Watt power handling figure. If you keep below this power rating, all Titan speakers — from the £399 Mini T/2E to the £3,525 Maxi T/4 — come with a five year guarantee, and each hand-assembled speaker is run in by Titan prior to sale.

In execution, this design is very traditional: it harks back to a time when hi-fi was king of home entertainment systems. The speaker has a full-length detachable grille, and its acres of wood veneer rest upon a chamfered plinth. The latter is mirrored by a plate of identical size and shape on top of the speaker. This gives the unit a '50s look and feel, but the capital protrudes four relatively sharp edges at about the eye-level of the average sprinting eight-year-old.

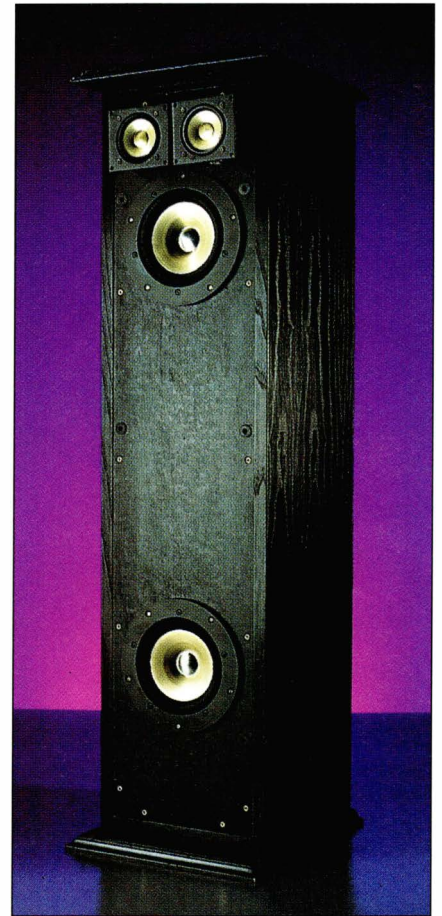
## A Tower of strength?

Such are the high standards nowadays achieved by specialist hi-fi, it is very rare that I can't find something positive to say about a product placed under my scrutiny. It is especially difficult to find oneself in this position when the item in question is the output of such a new company — these speakers are quite obviously someone's labour of love.

Therein lies the problem, I suspect. I believe the Tower T/4 would have benefited from a greater diversity of design opinions. It is all too easy for a solitary designer to follow an idea to its logical conclusion — some of the world's finest loudspeakers have been created this way. It is easy to overlook uneven aspects of a speaker's performance if it excels in other areas; such has been the justification for Quad electrostatics, Rehdekos, Shahinians and virtually every horn-loaded enclosure on the market. However, if an anomalous element of performance is not balanced by an exemplar, the speaker won't attract even a cult audience.

The designer of the Tower T/4 has clearly aimed for speed, bass depth and transparency, and has sacrificed dynamics to do so. This has endowed the speaker with a passing resemblance to the late, much-lamented Townshend Glastonbury. The T/4 shares the latter's silky-smooth mid-band, spit-free treble, speed, and freedom from bass overhang. Unfortunately, at the same time it suffers lumpy upper bass and curtailed high frequencies. A peculiar lack of temporal integration between treble and midrange muddy the waters even further.

These are not the only problems. Despite its low power-handling capability — a con-



Titan Tower T/4 Stands over a metre tall.

sequence of anodised aluminium drivers' relative fragility — the speaker is relatively insensitive, and needs an amp with grunt to drive it. As a result of these parameters, the T/4 exhibits two distinct loudness thresholds: if played too quietly the midband integration begins to collapse; if played too loudly the drivers begin to clip and sound as if they are preparing to self-destruct.

Even its styling does little for the Titan Tower. Despite the retro tastes of today's consumers, I fear the T/4 looks just too much like a '50s-radiogram to compete. It would look less imposing in any colour other than black, though the top-to-toe black grille would still stand out.

Let me leaven my criticism with praise where praise is due: there is the sense of presence which results only from a pair of big speakers, and the claim of in-room low frequency response down to 40Hz is reinforced by deep and tuneful bass. With its non-aggressive treble, this could be a fair choice for a listener seeking a big and slightly old-fashioned speaker. For my part, though, I can't escape the conclusion that this design is too flawed to be recommendable. ▲

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The Virtuoso Gold is hand-made and finished in an attractive cherry veneer.

**T**his month one lucky *Hi-Fi Choice* reader will win a pair of exquisite B\**a* Virtuoso Gold floorstanding horn speakers. Manufactured by Thomas Transducers of Hastings, and sold for £3,395 a pair, the Virtuoso Gold deploys a single full-range Lowther drive-unit. This classic, white-coned device is a living hi-fi legend, and has been a favourite of valve-amp users since the 1950s because of its phenomenal 96dB sensitivity, which makes it incredibly dynamic.

The handmade cabinet is finished in cherry veneer and built from 18mm-thick MDF. Within it there's an internal horn structure, cleverly carved from blocks of polystyrene. These receive a coating which endows fire resistance and stiffness.

Jason Kennedy reviewed the Virtuoso Gold speaker in our June 1997 edition, and wrote of "a speaker that has breathtaking speed and transparency at low frequencies. It also boasts a superb sense of timing and the ability to play bass-heavy material with delightful agility." Just think: for the cost of a stamp and envelope, these speakers could soon be yours. Write in today!

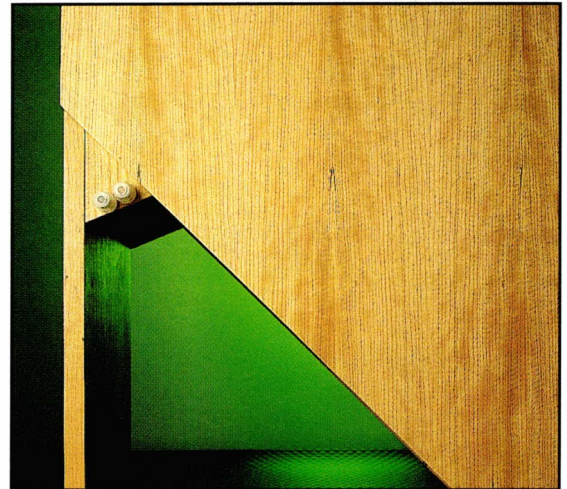


The drive-unit in the Virtuoso Gold is the Lowther PM2C. This is a full-range unit, so it does not employ a dividing network. The solid cherry-wood bulb (pictured centre) acts as a dispersion modifier.

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CHFC 803A

# Ready, Willing and Cable

It's time to throw away that weedy plastic spaghetti – your system needs proper interconnects to give great sound. Here are **Richard Black** (listening test) and **Paul Miller** (lab test) to evaluate 16 hot new wonder-wires!

**C**all me old-fashioned, but I always like to start a cable review by explaining why the subject is worth covering at all. On the face of it, bits of wire aren't too newsworthy. But I've been studying audio cables for many years (hi-fi reviewers can be very, very sad people), and I've come to two conclusions: first, cables are more audible than they 'ought' to be; and second, we don't have much more than a few clues as to why they are audible at all.

Having said all that, there is one unequivocal fact about hi-fi cables, whether of the interconnect or speaker variety: they do sound different. This kind of anecdotal evidence doesn't carry much weight in scientific circles, but for what it's worth, I have witnessed with my own eyes one particularly dedicated audiophile identifying correctly a two-inch section of cable (an adaptor, basically) made with inferior materials.

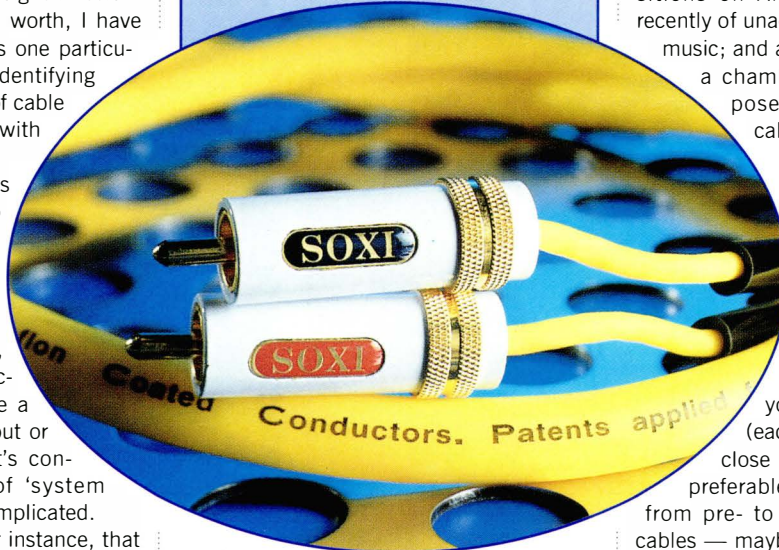
So anyone who possesses a real hi-fi system stands to gain by choosing the right cables — but which are the right models to employ? As usual in hi-fi, there's no definitive answer; in fact, because the electrical characteristics of a cable can have a significant effect on the output or indeed input of whatever it's connected to, the business of 'system matching' gets even more complicated.

It is perfectly possible, for instance, that a cable which ideally matches your CD player to your preamp, will not do such a good job connecting the preamp to the power amp. Also, it is by no means universally true that one brand's interconnect will 'match' the same marque's speaker cable.

Any cable has three basic parameters: resistance, capacitance and inductance. The first is something that can, in principle, be reduced forever, at the expense of making the cable thicker. The latter two are in a

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Cambridge Audio Pacific	£29.95	p50
Chord Company Cobra 2	£49.99	p50
DPA White Slink	£75	p51
Goertz M1 Tourmaline	£98/75m	p51
Insert Audio IC100mkII	£46.95	p52
Ixos Gamma 1002	£39.95	p52
Kimber Kable Hero	£110	p53
Nordost Blue Heaven	£144.95	p53
PAD Elementa	£145/1.5m	p54
Prowire Silver	£59.99	p54
QED Qnect 2	£30	p55
SonicLink Black	£49	p55
Straight Wire Chorus	£39.99	p57
van den Hul D102mkIII	£69.99/8m	p57

*All prices are for a one-metre pair except where quoted.*



rough inverse relation and can only be traded off against each other. In general, very high capacitance in an interconnect can cause treble roll-off; whereas in a speaker cable high inductance can have the same effect.

In most cables and applications, the roll-off is so slight as to be negligible — less than a tenth of a dB at 20kHz. Most interconnects are screened, to keep out interfering electromagnetic fields. These may be in the

audio band (mostly mains hum from nearby wiring) or above it (RF pick-up). Some interconnects do away with screening altogether.

## HOW THE TESTS WERE DONE

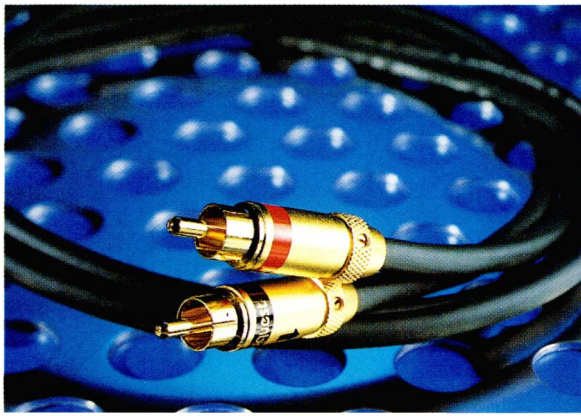
We did the tests using principally an EAR valve-amp-based system, with sources including Micromega and Pioneer CD players, a Moth phono stage and on occasions a Sony DAT recorder. To give some variety, a harman/kardon HK3500 integrated amp took a turn, although it made only a slight difference to any general conclusions.

All sorts of music were tried, with a common thread of Little Feat (LP); solo piano (Ronald Stevenson playing his own compositions on Altarus); a recording made recently of unaccompanied mediaeval vocal music; and a wonderful recent discovery: a chamber opera, *Ambrosio*, composed in 1990 by a Mexican called José Antonio Guzmán.

All interconnects on test were quite short (one metre each, approximately) — of course long runs are seldom needed. However, it is probably worth mentioning that if your system runs to separate pre- and power amplifiers, and especially if you have mono power amps (each of which may be placed close to the speakers), often it is preferable to use long interconnects from pre- to power, and short speaker cables — maybe only half a metre or so. If this approach appeals, check first that your preamp has a low output impedance, and choose a cable whose electrical characteristics are suited to long runs. (This is mentioned in a number of Paul Miller's lab tests.)

People often ask how much quality is lost in a long cable as opposed to a short one. Well, I find that as a rough rule of thumb, the subjective effect of length is the square root of the cable length. A 4m cable has about twice the subjective effect of one 1m long.





**AUDIOQUEST TOPAZ 2**

This modest-looking, olive-green cable is only moderately flexible, evidently due to Audioquest's employment of solid-core conductors made from 'Functionally Perfect' copper. It is configured as a pseudo-balanced cable, in which the screen is terminated, unusually, at the end marked for receiving an applied signal.

Rather than the more common braid, the screen itself is a foil, which should give good protection against RF interference — it certainly works fine at 50Hz. Construction is described as 'Hyperlitz', though it has nothing at all to do with Litz stranding.

The phono-plugs fitted are of good quality, with a split centre pin to ensure decent contact without excessive insertion force.

Three grub screws clamp the cable jacket, making for a very robust assembly. Audioquest seems to have used a fairly lossy dielectric, probably PVC, which also happens to be very microphonic (tap it and you'll hear a sound).

**Sound quality**

This was not a great favourite on auditioning: it seemed to flatten everything, in every sense. Images were flattened front to back and squashed

side to side, dynamics were 'sat upon', and previously open and resonant bass seemed unnaturally dry and constrained. Treble sounded dirty and grainy, and generally there was a feeling of lost information. This basic character applied whether the source was CD or LP, although I'd say the latter fared marginally better. In the context of an

**AUDIOQUEST VERDICT**

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £59.95/0.5M

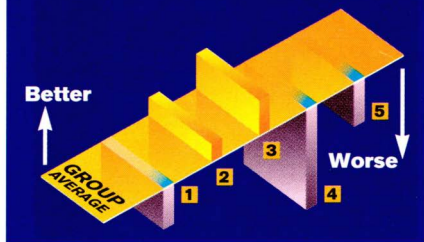
☐ Sounds flattened out, with poor imaging and grainy treble.  
 ☒ A&R Cambridge Ltd, Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB  
 ☎ (01223) 203203

attempt at low coloration, Topaz 2 is less than ideal. But it could be the consummate cable for folks who play bangin' techno on an aggressive-sounding system. *RB*

**THE LAB REPORT**

When Audioquest's Topaz was last reviewed, in issue 131, it was criticised for its asymmetric coaxial construction. The revisions to Topaz specifically address this area of concern, as Audioquest's literature now very clearly states! So, today's Topaz employs a single, symmetrical twisted-pair of solid FP ('Functionally Perfect') copper cores, each insulated and surrounded by a foil screen that's grounded via a drain wire at the cable's source-end. Technically, its capacitance (138pF), resistance (109mOhm) and series inductance (0.8µH) are all up on the original, though not sufficiently to compromise the advantages of its newfound symmetry. *PMI*

1	INDUCTANCE	-28%
2	CAPACITANCE	13%
3	RESISTANCE	25%
4	DIELECTRIC QUALITY	-70%
5	EFFECT ON SIGNAL BANDWIDTH	-30%



**CABLE TALK ADVANCED 2**

This cable is conveniently flexible and fitted with some of the most gorilla-tight phono plugs we've ever seen. In fact, they might be a bit too much of a good thing, and should be inserted and removed with care on cheaper equipment with less robust sockets.

Internally, the cable is a pseudo-balanced type with two thin conductors and screen, inside an awful lot of sheath. The plugs are actually of only modest quality, but

attention to detail shows in the way the earth terminal has been soldered to the body proper, aiding the usual press-fit. The cable clamp looks slightly iffy and the cables should be handled with care, especially given the thin conductors. A rather lossy and moderately microphonic dielectric (insulating sheath) is used.

**Sound quality**

If all that sounds rather luke-warm, the cable itself proved rather less tepid on test. Scoring against it was a degree of roughness in loud passages, but most of my comments were positive. Bass was quite solid and extended: not the best in the test, but perfectly respectable in the context of the price. The treble combined bite and smoothness nicely, so that voices and violins retained their natural character and impact. Even the tricky task of maintaining

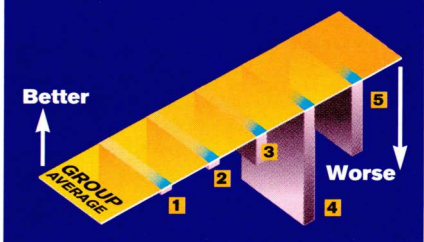
front-to-back imaging was managed well, with the excellent recording of *Ambrosio* revealing at least most of its considerable depth capabilities.

For its modest price, this is a good all-rounder and deserves Recommendation. *RB*

**THE LAB REPORT**

This is a professionally constructed cable: a straightforward, reliable design with minimal pretensions. A single, multi-stranded twisted pair serves for signal and return, while an aluminium-foil screen is terminated at the source-end of the cable via a naked drain wire. A thick but flexible overcoat of PVC clamps the cable tight, reducing microphony, particularly over long cable runs. The twisted pair does not have a large cross-sectional area, however, so the 1m loop resistance is moderately high at 256mOhm. Meanwhile, the unsophisticated dielectric(s) are betrayed by a moderate 150mOhm leakage. A cable for the first-time upgrader. *PMI*

1	INDUCTANCE	-2%
2	CAPACITANCE	-3%
3	RESISTANCE	-20%
4	DIELECTRIC QUALITY	-80%
5	EFFECT ON SIGNAL BANDWIDTH	-50%



**CABLE TALK VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £34.95/1M

☐ Slight roughness in loud music barely detracts from a well-balanced performance with good imaging.  
 ☒ Cable Talk, Unit 12, Farnborough Business Centre, Eelmoor Road, Farnborough, Hants GU14 7XA  
 ☎ (01252) 373434



**CAMBRIDGE AUDIO PACIFIC**

Full marks for practicality in this pair-zipped cable, which is nicely flexible and terminated with some solid plugs (a good snug fit in any socket), which are shaped just right for ease of insertion and removal.

Construction is a basic coaxial, with a single stranded conductor insulated in foamed-polythene dielectric (low loss and moderate microphony), then covered in a foil-and-braid screen. Cable clamping is slightly precarious, the sheath having been stripped back a little too far — be careful. The cable is marked for directionality, although superficially there seems to be no reason for this in the construction.

**Sound quality**

Unfortunately, Pacific's good initial impres-

**CAMBRIDGE VERDICT**

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £29.95

☑ Widely compatible, keenly priced — but lacks subtlety and bass impact.  
 ☒ Richer Sounds, Hankey Place, London SE1 4BB (0500) 333500

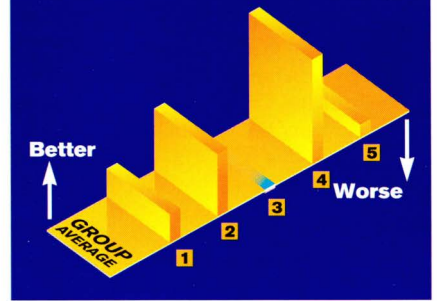
sion didn't really hold up under fire. Starting with some orchestral music, which majored on cellos and double basses, it soon became apparent that bass impact is a weakness. Probably related to this is a sense of confusion that creeps in as things get loud and dramatic, and a slight lack of integration between the strands in a piece of music, be it classical or rock. In fact, none of this is severe and the sins of Pacific are, for the most part, minor; but they do seem rather



**THE LAB REPORT**

This interconnect is more unusual than it looks. At first sight the multi-stranded central (signal) core and surrounding (return) braid give Pacific the appearance of a bog-standard coax. But it's not. In practice, the return screen is composed of two braids, one employing lacquered strands to insulate it from the other. This unusual tri-axial geometry lends Pacific one of the lowest combinations of capacitance (79pF) and inductance (0.45µH) in the group, promoting broad compatibility with different CD players, pre and power amplifiers over short and long cable runs. *PMi*

1	INDUCTANCE	21%
2	CAPACITANCE	44%
3	RESISTANCE	-1%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	10%



**CHORD COMPANY COBRA 2**

Chord Company's Cobra 2, in British Racing Green, is a particularly flexible cable in pseudo-balanced configuration (direction follows the writing, as usual). It's fitted with collet-clamp phono plugs, which grip the sheath securely. They do feel slightly loose on some types of phono socket. The signal conductors are very thin, giving a relatively high loop resistance, and the dielectric is of high quality. Screening efficiency is fine and the cable is particularly insensitive to vibration.

**Sound quality**

Reactions to the Cobra on audition were mixed. It seemed confident and full-bodied in loud music of any kind, presenting a good, solid image with plenty of detail and pretty strong bass. Where it made less of an impression was in passages for few instruments, which sounded somehow dry and on

**CHORD VERDICT**

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £49.99

☑ Good, strong sound with full-bodied music; less happy with smaller forces.  
 ☒ The Chord Company Ltd, 30A Old Sarum Business Park, Portway, Salisbury, Wilts SP4 6EA (01722) 331674

occasion even glassy. Solo vocals were just a little disembodied and lacking in the small details that make a voice unique. Imaging was fair, neither outstanding nor obviously lacking, while treble was certainly extended. During a brief spell spent with the cable connecting phono-amp to preamp, it seemed less dry, so perhaps this cable might be more successful in certain situations and systems than others. For example, it might be just the tonic for a mildly fruity amplifier

or a slightly lively listening room.

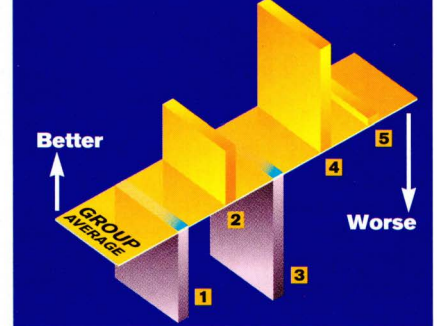
One to try, then, if not an outright recommendation. *RB*



**THE LAB REPORT**

This very flexible cable embodies a blend of properties, not least the distinction of possessing a very 'smelly' green outer insulation! A symmetrical, twisted-pair geometry provides a very low 88pF parallel capacitance without compromising leakage, which hits the measurement end-stops at >350mOhm. However, each multi-stranded OFC conductor is very thin indeed, pushing the cable's loop resistance up to a poor 646mOhm and inductance to 1.05µH/m, encouraging a very broad bandpass at RF frequencies. This could invite some system-dependency, as could Chord's termination of the screen at the cable's destination end. Experiment with directionality for best results. *PMi*

1	INDUCTANCE	-64%
2	CAPACITANCE	39%
3	RESISTANCE	-85%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	6%





**DPA WHITE SLINK**

DPA has been in the cable business longer than many, and has tended to shy away from the most extreme paths of cable tweaker. On the whole, its approach is pretty down-to-earth. White Slink is a pseudo-balanced cable using what appear to be individually-insulated strands in each conductor, terminated in collet-clamp phono plugs. In fact, the collet itself is missing, and there's effectively no clamping, which calls for more care than usual in handling. The plugs are a good fit in any normal phono socket. Dielectric is of high quality, but microphony is no better than moderate.

**Sound quality**

Comments on the sound of White Slink seem at times contradictory, which in itself may

point to a certain fussiness about matching to other equipment or, indeed, to music. On the one hand, the bass was alleged to be "plummy"; on the other, it was "slightly thin". However, these comments relate to very different pieces of music.

Midrange and treble seemed fine, although in some instances, the imaging seemed a little forward.

**DPA VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £75

☐ Bass recedes as the music gets complex; midrange and treble better with quite good detail and imaging.  
 ☒ DPA, Unit 7 Willowbrook Lab Units, Crickhowell Road, St Mellons, Cardiff CF3 0EF  
 ☎ (01222) 795621

**GOERTZ M1 TOURMALINE**

Goertz is the pioneer of flat loudspeaker cable, with two wide conductors face to face. The M2 version of that cable did well in our test last year and now we have an interconnect made of what appears to be essentially the same stuff. Trouble is, while high cable capacitance should have no effect on the response of a good power amplifier, it can cause treble loss in many small-signal applications. For instance, some preamplifiers, or phono stages with an attenuator on the output, could suffer up to 3dB of treble loss at 20kHz when driving only 1m of M1.

Typical CD players should fare much better, but it's hard to see any justification for this kind of design. Anyway, M1 is an unshielded pair of conductors (their close proximity making hum pickup less of a problem than it might be) terminated in strong, tight-fitting phono plugs. The sheath on the

interconnect seems rather tougher than that on the speaker cable. Dielectric losses are low; microphony is rather high.

**Sound quality**

Even though checks were made to ensure equipment connected via M1 was not suffering obvious treble loss, the sound was distinctly soft and lacking in bite — 'pleasant' in the most damning sense of the word. Imaging was fine side-side, though front-back was

**GOERTZ VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £98 for 0.75m

☐ Soft sounding, lacking in bite, with excessive and plummy bass.  
 ☒ Townshend Audio, 7 Bridge Rd, Hampton Court, Surrey KT8 9EU  
 ☎ (0181) 979 2155

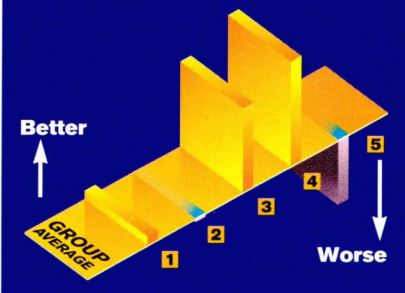


Detail was good if not excellent. Overall it was good but not exciting at the price. *RB*

**THE LAB REPORT**

I last tested this cable back in June '94 (*HFC 131*), and in the intervening period its phono plugs have become somewhat shinier. White Slink employs a twisted-pair of conductors, each comprising seven lacquer-coated strands of 0.4mm oxygen-free copper, which are clamped by a polyethylene extrusion. Leakage remains extremely low at >350MΩ, as does its 39mΩ loop resistance — all achieved without abandoning the advantages of a solid-core construction. Finally, the twisted pair is surrounded by a tin-plated screening braid that's terminated at its source end. Susceptibility to RFI is limited to a very tight band. *PM*

1	INDUCTANCE	7%
2	CAPACITANCE	-1%
3	RESISTANCE	60%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-45%

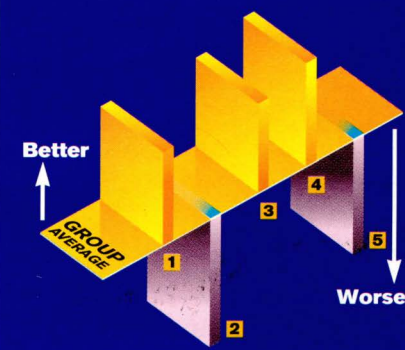


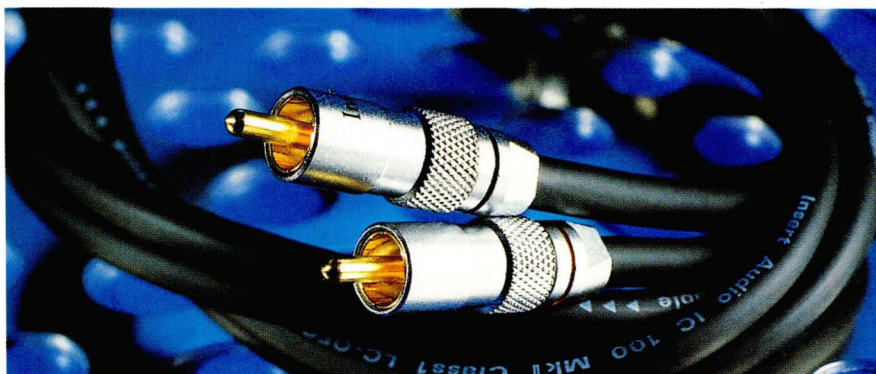
slightly less successful, and bass, probably unbalanced by lost treble, was present to excess and rather plummy with it. *RB*

**THE LAB REPORT**

This interconnect adopts the 'unravalled capacitor' topology of the Goertz speaker cable (see *HFC 168*). Two oxygen-free (OF) copper strips are laid on top of one another, separated by just 0.08mm of a high quality PET dielectric. By the nature of its construction, Goertz cable offers a moderate RF bandpass but its high 760pF/m capacitance may have an *audible* impact on treble performance. For example, driven from a 50kΩ passive pot, even a 1m length will begin rolling off *below* 20kHz. The fabulously low 0.1μH inductance and 39mΩ loop resistance are points in its favour, but long runs of this stuff would not be recommended. *PM*

1	INDUCTANCE	67%
2	CAPACITANCE	-90%
3	RESISTANCE	63%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-80%





**INSERT AUDIO IC100 MKII**

This unpretentious black cable is of flexible and robust design. As a pseudo-balanced type, it has two conductors insulated in low-loss polythene dielectric, with a fibrous filling — which increases dielectric loss but decreases microphony to a very low level — under the screen. Good-quality collet-clamp phono plugs are fitted, and it is rewarding to see that not only have sleeves been used under the collet to ensure a snug fit, but that the screen has been spread all around the circumference of the collet rather than being brought out into a pony tail. This can make an astonishing difference to screening efficiency at the VHF level.

**Sound quality**

The major criticism of IC100 was its ten-

dency to dryness. This is unfortunate, since in almost every other area it attracted many positive comments. In particular, its bass is full and extended, but still somehow rather dry and lacking in communication, as if the harmonics are attenuated.

Voices are clear and well distinguished, but there's still the sense of lost resonance, like a singer with a slight sore throat who can't quite focus the note. Imaging is good

**INSERT VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £46.95

☐ Mostly good sound is let down by pervasive dryness.  
 ☒ Glave Ltd, Unit 7, Wren Industrial Estate, Coldred Road, Maidstone, Kent ME15 9XN (01622) 664070

**IXOS GAMMA 1002**

Ixos makes great play of its 'Gamma geometry'. This supposedly 'revolutionary' design incorporates a third dummy strand, along with the two conductors, in such a manner as to braid them without twisting round each other. The idea is that the third core helps reduce inductance. Indeed it would seem that any type of twisting has a lot to recommend it. Ixos, however, claims that Gamma geometry is 'Patent Applied For'.

The rather unwieldy overall sheath includes both left and right cables, each unshielded and therefore subject to both hum pickup and (admittedly slight) crosstalk. Despite the bulk, the conductors are thin and the phono plugs, beneath their chunky housings, are pretty basic. The 'Teflon-coated conductors' are compromised by the sheath material, giving relatively high dielectric loss and moderate microphony.

**Sound quality**

The sound of the 1002 does little to justify the claims made for its innovative construction, either. Bass is lumpy and ill controlled, though on the whole there is at least plenty of it, while the treble is grainy. A snatch of opera revealed voices that seemed strangely disjointed from the rest of the ensemble, and jazz also sounded lacking in integration. Imaging was no better than fair.

While Ixos cables have done well in past

**IXOS VERDICT**

**SOUND** ★★☆☆☆☆  
**VALUE** ★★★★★☆  
**PRICE** £39.95

☐ Lumpy bass, grainy treble, and poor integration. Nice colour, though!  
 ☒ Ixos, Unit 15, Hayward Industrial Park, Thameside Drive, Birmingham B35 7BT (0121) 749 2240

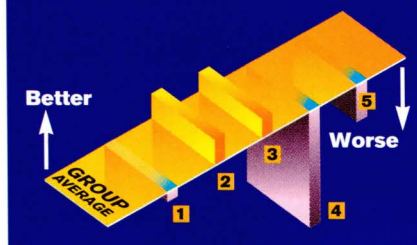


on the whole, if not outstanding, while loud passages are handled with panache, if occasionally a little roughness. *RB*

**THE LAB REPORT**

It is not clear what distinguishes the mkII from the mkI, but the former appears to be a very flexible, symmetrical interconnect. A twisted-pair geometry is established using polyethylene insulated, LC-OF (Linear Crystal Oxygen Free Copper) stranded conductors for signal and return. This holds its resistance to a moderate 126mOhm though the 25MOhm leakage and low Q-factor suggest its dielectric properties are not up to the standard of, say, the similarly-specified QED Q-Nect 2. Capacitance is safe enough at 128pF while the heavy coaxial braid (grounded at the cable's source end) should prove effective against electromagnetic interference (EMI). A safe but unspectacular cable. *PMI*

1	INDUCTANCE	-6%
2	CAPACITANCE	18%
3	RESISTANCE	13%
4	DIELECTRIC QUALITY	-80%
5	EFFECT ON SIGNAL BANDWIDTH	-25%

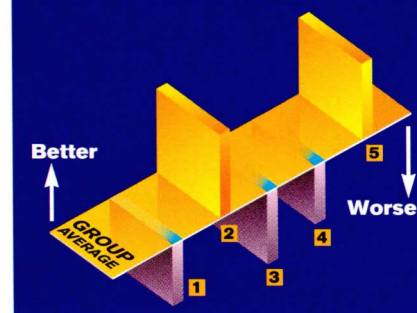


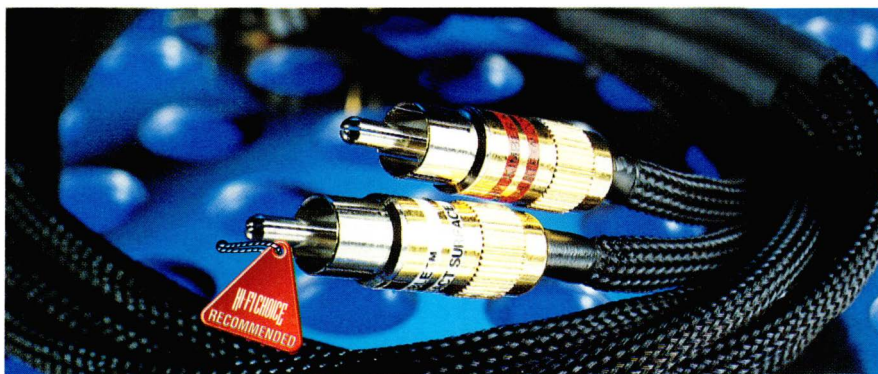
Choice tests, we regret this latest example can't go home with the sort of glowing recommendations that accompanied its less sophisticated forebears. *RB*

**THE LAB REPORT**

This new Ixos cable has been launched with a fanfare. Its so-called 'Gamma geometry' configuration comprises two identical conductors braided together with a third polyethylene (non-conductive) 'dummy' core, in an effort, it is claimed, to reduce the cable's inductance. In practice, however, Ixos's 1002 has a series inductance of 0.9µH/m, which is *higher* than any other, conventional, twisted-pair design in this survey. The conductors themselves are composed of 7x0.13mm silver-plated OF-copper strands within a Teflon dielectric, their limited cross-sectional area resulting in a relatively high 488mOhm resistance. Nevertheless, capacitance is very low at 48pF so '1002 could fare well if used in longer lengths. *PMI*

1	INDUCTANCE	-42%
2	CAPACITANCE	60%
3	RESISTANCE	-50%
4	DIELECTRIC QUALITY	-40%
5	EFFECT ON SIGNAL BANDWIDTH	55%





**KIMBER KABLE HERO**

Kimber was one of the pioneers in the specialist cable movement, and its trademark braided speaker cables are a familiar sight to hi-fi cognoscenti the world over. Evidently that braid is a big hit with its inventors, as it turns up in the new Hero interconnect in a new form called 'GyroQuadratic'. This appellation designates two conductors each for live and return, individually stranded and insulated with Teflon, in a proprietary weave. There's no screen, but Kimber claims its braiding technique is effective against noise pick-up.

Plugs fitted are Kimber's own 'Ultraplate', of modest mechanical construction but with good centre and earth contact. There's no cable clamping, which is less worrying given the thickness of the conductors.

**Sound quality**

This was a qualified success on audition. Bass seemed to be just slightly coloured and things could get a little rough when the music was loud, but treble was always clear, and detail was generally not far short of the best. Side-side imagery was good; front-back slightly less so. It also appeared that this cable prefers non-classical to classical

**KIMBER VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £110

☐ Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed.  
 ☒ Kimber, Edgebank House, Skelsmergh, Kendal, Cumbria LA8 9AS  
 ☎ (01539) 823247

**NORDOST BLUE HEAVEN**

In common with Goertz and Kimber, Nordost seems content to employ the same cable geometry for both speaker and interconnect duties. Never mind the impedance difference between the applications. Actually, Nordost's low-capacitance construction is far better suited to interconnect duty.

Four solid conductors, for each of live and return, are laid side-by-side in a dielectric of Teflon or similar. Its normal low loss is compromised here by the heatshrinking over the cable ends, which are terminated in nifty, sprung, Neutrik phono plugs, which contact ground before signal, ensuring care-free insertion. Assembly seems very robust, but as there's no screening, route with care.

**Sound quality**

Blue Heaven was one of the more successful

cables in this test, excelling particularly in the bass regions, which were strong, clear and well defined without any loss of resonance. If the treble was less persuasive, it was only due to a hint of grain, which at times caused sounds such as orchestral violins and muted jazz trumpet to be slightly veiled. The same effect probably caused a small degree of front-to-back imaging compression. Nevertheless, we welcomed the

**NORDOST VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £144.95

☐ Very good bass and only slightly grainy treble add up to a well-integrated, natural-sounding cable.  
 ☒ Nordost, Unit 7, Aber Park Industrial Estate, Aber Road, Flint, Flintshire, CH6 5EX  
 ☎ (01352) 730251



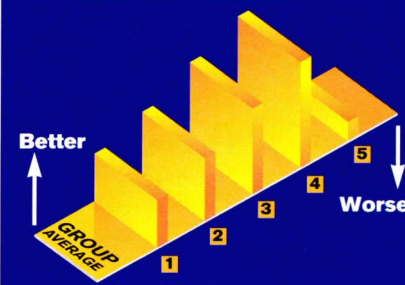
music, with rock and upbeat jazz enjoying a lively presentation.

A bit of a mixed bag, then; but we'd say it's worth a Recommendation. *RB*

**THE LAB REPORT**

Developed on the basis of previous Kimber cables, Hero uses a variant on the standard twisted pair arrangement with *two* insulated conductors for both signal and return. These conductors are woven into a braid that provides an excellent mix of low (78pF) capacitance with an equally low (0.35µH) inductance, while also providing an inherent degree of electromagnetic shielding. The conductors, meanwhile, are composed of mixed-gauge copper strands, surface-treated according to Kimber's specification. The end result is a fabulously low 42mOhm loop resistance, making it the all-round 'compatible cable' of this test. *PMI*

1	INDUCTANCE	34%
2	CAPACITANCE	44%
3	RESISTANCE	60%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	13%

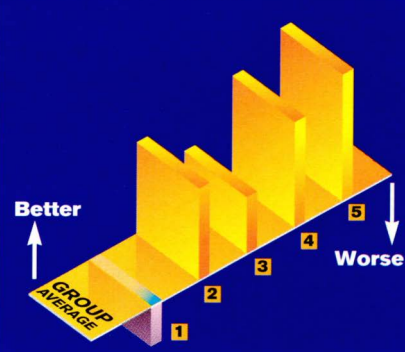


feeling of integration maintained by the Nordost wire with any musical style, and with any signal source. Despite the high price it seems worthy of Recommendation. *RB*

**THE LAB REPORT**

This sample of Nordost's Blue Heaven bears a close resemblance to Chord's older Blue Angel (see *HFC* 131). Both use a multi-stranded, parallel array of silver-plated copper (or is it solid silver?) strands, supported within a flat PTFE extrusion. High-tech stuff, no doubt, though the complete turn-around in measured performance suggests that Blue Heaven uses entirely separate signal and return 'halves' instead of the alternating format of Blue Heaven. So capacitance has dropped from 160pF to just 35pF while its inductance has risen from 0.22µH to 0.8µH. Appearances can be deceptive... *PMI*

1	INDUCTANCE	-28%
2	CAPACITANCE	66%
3	RESISTANCE	40%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	90%





**PURIST AUDIO DESIGNS (PAD) ELEMENTA**

Quite frankly, this cable is a bit of a monster, and it's not quite clear why. Beneath the nylon braid there seems to be a plastic tube concealing something akin to the typical 6mm diameter of most cables. It's not terribly flexible either. Our sample was unusually long at 1.5m, which may not have helped.

The assembly is sealed, but Elementa seems to be a pseudo-balanced cable. Although it uses a good, low-loss dielectric, its capacitance is high enough to indicate caution when combining with a passive pre-amp, where treble loss may become a problem. Fitted plugs are solid and grippy.

**Sound quality**

As with one or two other cables in the test,

Elementa seems very picky about its music. Give it something simple, say a jazz duo or a string quartet, and it can make a good impression, quite natural and open. Give it more ambitious musical material, though, and everything starts falling apart. Bass is muffled and indistinct, treble is dirty — especially when things get loud — and imaging is indistinct.

**PAD VERDICT**

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £145/1.5m

☑ A fat, heavy, frankly rather lazy-sounding cable; best with music for small forces.  
 ☒ High End Audio Recherche, 11 Camden Street, Belfast, BT9 6AT  
 ☎ (01232) 319148

**PROWIRE SILVER**

Prowire is a brand name of Vivanco, the well-known accessories outfit known better for its fine headphones. Silver is the flagship of this new range and is unusual for offering silver-plated conductors at a near-budget price.

It's a pseudo-balanced cable with quite substantial conductors in a Teflon dielectric, screened with a foil-and-braid screen and covered in a thick sheath. All of these factors conspire to make the cable slightly inflexible but certainly good material value for money. The plugs are very chunky and securely fixed, and exert a good grip on normal phono sockets. Only in its moderate level of microphony does this cable fall short of excellence.

**Sound quality**

Though not quite the most accomplished cable in this test, the Prowire still made a very good impression. In common with

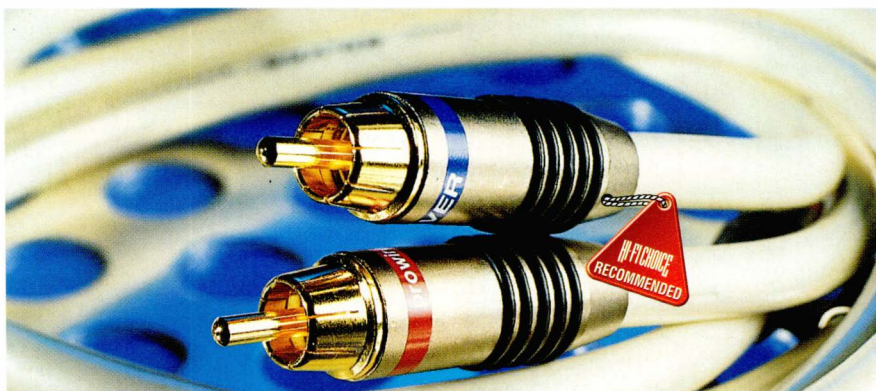
many cables, it imparted just a hint of coloration to the bass, and lacked the last fine degree of detail at higher volume levels. That, however, is nit-picking, as in general it was well balanced, clear and detailed.

Left-to-right imaging was just fine, while back-to-front it was just a shade below 100 per cent. Oddly, percussion in a couple of jazz excerpts sometimes sounded a little dirty and coarse, but this was intermittent and didn't seem to affect any other instru-

**PROWIRE VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £59.99

☑ A good cable in every way, with just the occasional hint of coloration and coarseness.  
 ☒ Vivanco UK Ltd, Maxted Court, Maxted Road, Hemel Hempstead, Herts HP2 7BY  
 ☎ (01442) 403020

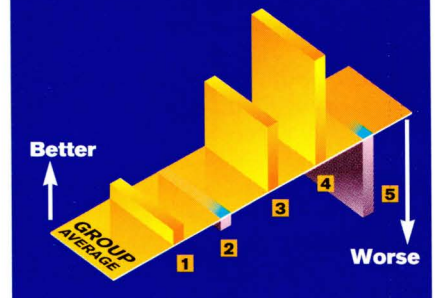


A disappointing result for a purportedly cryogenically treated cable, especially given the rather high price. *RB*

**THE LAB REPORT**

No information was supplied to shed any light on the internal workings of PAD's Elementa interconnect. And since the cable is tightly sealed, all I can report is that resistance is low (71mOhm), inductance is slightly above average (0.53μH/m) and capacitance, at 218pF, is slightly below-average. Nevertheless, that brew provides the *lowest* RF resonant frequency (14.8MHz) in this test, along with a 'filtering' effect third only to the Goertz and Straightwire Chorus. PAD Elementa looks as if it'll be sensitive to both length and system in which it is used. *PMI*

1	INDUCTANCE	10%
2	CAPACITANCE	-8%
3	RESISTANCE	45%
4	DIELECTRIC STABILITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-55%

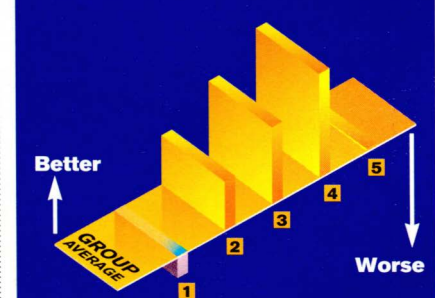


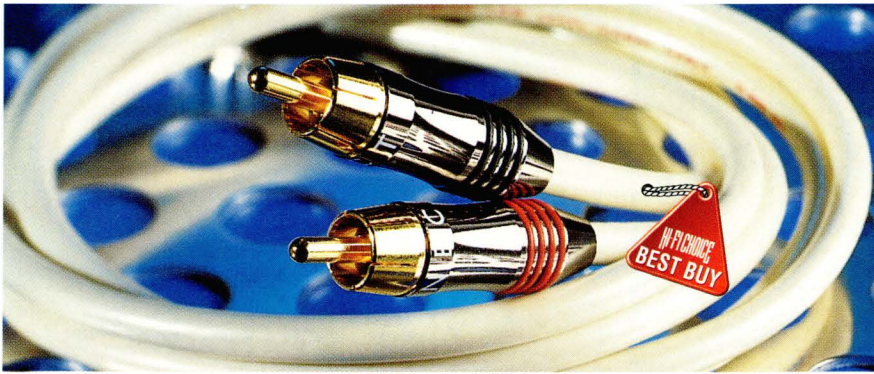
ments noticeably. Vocals, both spoken and sung, were natural, unforced and uncoloured, while violins had bite, sparkle and refinement. A good all-rounder, then, and heartily Recommended. *RB*

**THE LAB REPORT**

The graphics on this cable's packaging suggest quite clearly that it is a solid-core coax, but in practice, it's not. Instead, Prowire Silver is a standard (albeit heavy-duty) twisted pair, comprising two silver-plated, multi-stranded conductors. The good cross-sectional area reduces its 1m loop resistance to 45mOhm and this, together with its low 96pF capacitance, suggests it will be ideal for long pre-power cable runs. Screening is provided by an aluminium foil wrap, surmounted by a braid terminated at the source end, providing good isolation from external noise. Another rugged if unsurprising interconnect. *PMI*

1	INDUCTANCE	-14%
2	CAPACITANCE	35%
3	RESISTANCE	55%
4	DIELECTRIC STABILITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	1%





**QED QNECT 2**

QED has traditionally excelled in the lower-price arena, and this modest cable is no exception. It's a pseudo-balanced type, moderately flexible, and fitted with some smart, practical phono plugs. Inside, the plugs are not outstandingly robust but the cable is quite well secured and grip on sockets is tight. The cable itself uses a low-loss dielectric and is very non-microphonic.

**Sound quality**

Qnect 2 was one of the best-liked cables in the test. Its bass is extended and clean – perhaps not as extended as the very best, but it's a close second. Treble is detailed and clear: it balances bite and refinement admirably, running rings in this respect around several cables costing more than twice as much. In

one opera recording there was some coloration in the midband, but apart from that the balance seemed very good.

To be hyper-critical, at times there seemed apparent a tiny loss in delicacy, of sounds such as a lightly-struck cymbal, but in no way was this intrusive. And when handling traditional cable challengers like

**QED VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★★  
**PRICE** £30

☑ Very well balanced, refined and detailed, this is everything a good cable should be — and excellent value, too.

✉ QED Audio Products, Bridgeway House, Bridgeway Close, Lightwater, Surrey GU18 5XU  
 ☎ (01276) 451166

**SONICLINK BLACK**

SonicLink is one of those wonderfully iconoclastic companies that makes hi-fi fun. Its proprietor, Graham Nalty, has a way of coming up with ideas that no-one else would consider trying, although the resulting range of cables, using practically every kind of conductor and dielectric known to man, is vast and rather baffling.

This example consists of a pair of stranded conductors, hefty by interconnect

standards, with a rubber dielectric and a similar sheath, covered with nylon braid. There's no screen, and the cable may pick up hum if installed anywhere near mains wiring. Microphony is very low. The plugs fitted are of standard quality, but seem robustly mounted and are a good tight fit on sockets.

**Sound quality**

Like one or two other cables in the test, Black tends towards dryness, particularly in the bass. Midrange and treble are clean, and seem generally uncoloured, although there is a small lack of bite in the extreme treble, which slightly smooths off violins, saxophones and the like.

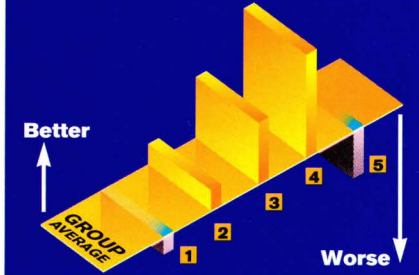
Imaging is good, and there's a pleasing sense of integration between the different strands of an ensemble. Perhaps because of the dry bass, vigorous rock seemed rather less suited to this cable than, say, solo voice

massed choral voices, the Qnect 2 portrayed them beautifully at any volume setting. Qnect 2 fully deserves a Best Buy. *RB*

**THE LAB REPORT**

By adopting a standard twisted-pair of conductors (one for signal, the other for return), QED's Qnect 2 bears obvious comparisons with other cables in this survey. Nevertheless, the substantial cross-sectional area of its OF-purity, stranded copper conductors gives it an edge over both Cable Talk and Insert Audio cables with its 71mOhm loop resistance. This, in turn, is still bettered by DPA White Slink and the Prowire Silver, however. A low-density dielectric is specified which ensures Qnect 2 exhibits little or no leakage (>350MOhm) while its combination braided/alloy foil screen provides excellent immunity from most forms of electromagnetic interference. *PMI*

1	INDUCTANCE	-11%
2	CAPACITANCE	14%
3	RESISTANCE	44%
4	DIELECTRIC STABILITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-32%



**SONICLINK VERDICT**

**SOUND** ★★★★★☆  
**VALUE** ★★★★★★  
**PRICE** £49

☑ Slight dryness in the bass and a hint of treble roll-off don't compromise integration. Seems to like classical music!

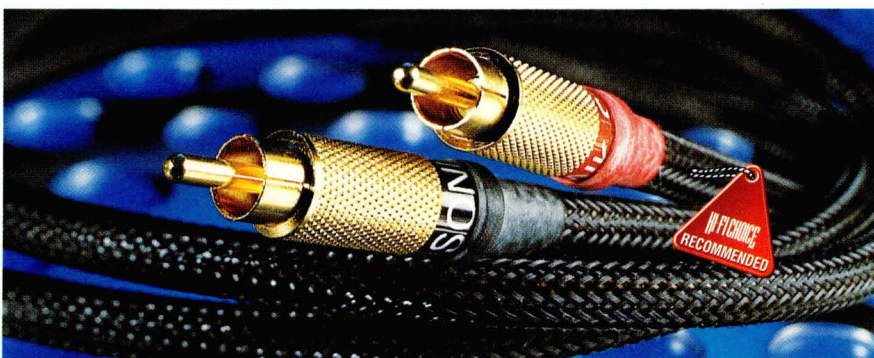
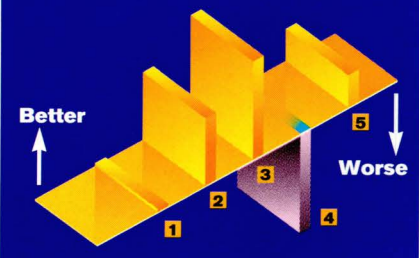
✉ SonicLink, 15 Derwent Business Centre, Clarke Street, Derby DE1 2BU  
 ☎ (01332) 361390

and piano, and drum kits at times lost impact. For some reason, this cable seemed happier connected to a CD player than to the phono box, though the difference was slight. Try it and see; Recommended, anyway. *RB*

**THE LAB REPORT**

Beneath the polyester webbing lending SonicLink Black its name, lies a fairly substantial but unscreened twisted pair of conductors. Each conductor is insulated with silicon-rubber and employs nickel-plated copper strands. SonicLink have exhibited ferro-magnetic materials like nickel for a long time, but the quantity employed in plating is insufficient to cause any untoward increase in the cable's inductance — just 0.6μH/m in this instance. Pure nickel cables from SonicLink have exhibited a far higher inductance. Capacitance remains low at 68pF while the decent cross-sectional conductor area holds the 1m loop resistance to just 230Ohm. This bodes well for runs in excess of 1m. *PMI*

1	INDUCTANCE	1%
2	CAPACITANCE	49%
3	RESISTANCE	70%
4	DIELECTRIC STABILITY	-70%
5	EFFECT ON SIGNAL BANDWIDTH	23%



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Q Magazine, Robert Mills, May 1997



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**STRAIGHTWIRE CHORUS**

Chorus is an attractive, practical, flexible design, with basic but securely-fitted phono plugs. Under the purple sheath, the cable is a simple coaxial type with a thin Teflon dielectric, which gives low loss but unusually high capacitance. This would suggest caution when using this cable in any run longer than about 1m with passive preamps and similar. Microphony is low.

**Sound quality**

In common with the other high-capacitance cables in this test, and possibly due to that parameter, Chorus seems just a little soft in the treble, lacking some bite and extension, particularly with brass instruments. At the other end of the spectrum, though, bass is solid, well rounded and nicely extended,

with good detail on tricky sounds.

When a climax approaches, Chorus passes on the full impact to the amplifier with scarcely a murmur, although there is perhaps a small loss of imaging detail in really dense textures. In fact, front-back imaging seemed if anything slightly better than side-to-side, which is unusual but not damaging. It led to a good sense of being

**STRAIGHTWIRE VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £39.99

☑ A very confident cable with good bass, though perhaps a shade of treble loss.

✉ CSE, Unit 9, Centre Park Holdings, Tockwith, York YO5 8QF  
 ☎ (01423) 359054

**VAN DEN HUL D102 MKIII**

Like SonicLink (and Audio Note, Isoda and a few others), van den Hul has been instrumental in investigating conductors apart from the usual copper and silver. The whole subject of conductor material is still wide open to debate, but van den Hul felt that there was a common and undesirable signature to all metal-conductor cables, so set about constructing cables with carbon-fibre conductors instead.

D102mkIII is one of these; although it is, in fact, a hybrid, mixing carbon fibre with more conventional silver-plated copper. Construction is pseudo-balanced, with Teflon insulation, and collet-clamp phono plugs that are fitted with a rubber sleeve under the collet, to ensure secure cable clamping. Capacitance, dielectric loss and microphony are all low.

This was, by a small but decisive margin,

the best cable in the test — a result all the more creditable given this wire's relatively modest cost. Whether due to the carbon fibre or not, its sound was solid, clear and effortless at all times, with basically nothing to criticise. Bass was extended as far as any and fully resonant, but at the same time under control. Midrange was uncoloured and natural, helping voices sound live and unprocessed, while treble was sweet and detailed, conveying alike the delicate tinkle of small percussion instruments and the

**VAN DEN HUL VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £69.99/0.8m

☑ A cable with everything: good bass, treble, imaging and naturalness

✉ VDH, PO Box 31, Bishop Auckland, DL14 7YX  
 ☎ (01388) 663273

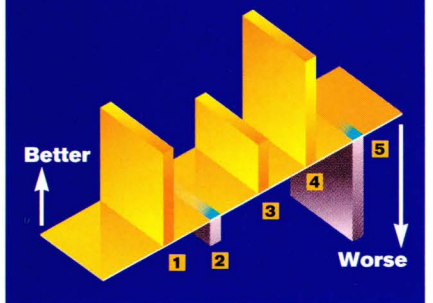


'invited in' to the music. A good performer overall and worthy of Recommendation. *RB*

**THE LAB REPORT**

The real strength of Straightwire's Chorus lies in its material quality. Sure enough, it does adopt a basic coaxial geometry (which is *asymmetric* as regards the signal and return paths) but a decent oxygen-free high-purity copper (OFHC) stranding is specified, along with Teflon insulation. This keeps its loop resistance down to 86mOhm/m and leakage better than 350MOhm, although its parallel capacitance is pushed up to 285pF. Remarkably, the series inductance is just 0.1µH/m, the lowest in this survey. In combination, this brew offers a very broad RF resonance at 30MHz together with an HF 'filtering effect' second only to the Goertz. *PMI*

1	INDUCTANCE	67%
2	CAPACITANCE	-18%
3	RESISTANCE	35%
4	DIELECTRIC STABILITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-70%

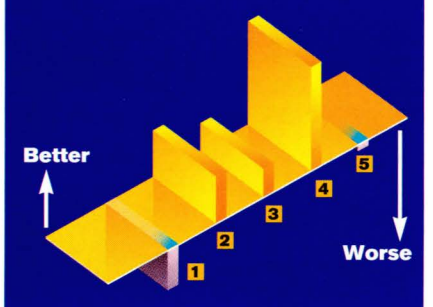


rasp of muted trumpet. In fact, this is pretty much as good as cable gets, and is therefore a Best Buy. *RB*

**THE LAB REPORT**

VdH's 'hybrid' cables are typically very interesting, and the D102mkIII is no exception. This is a symmetrical design, employing a twisted pair of conductors surrounded by a silver-plated copper braid and conductive plastic tape. The tape achieves some small measure of conductivity by virtue of being impregnated with carbon fibre — hence the carbon/metal hybrid. Each conductor is composed of 40 silver-plated copper strands, wrapped in this conducting polymer and then insulated in conventional fashion. There's plenty of metal, so the cable's 1m loop resistance remains a moderate 111mOhm while the mixed-conductors keep capacitance to 100pF. It's an unusual but compatible wire. *PMI*

1	INDUCTANCE	-28%
2	CAPACITANCE	33%
3	RESISTANCE	20%
4	DIELECTRIC STABILITY	75%
5	EFFECT ON SIGNAL BANDWIDTH	-3%



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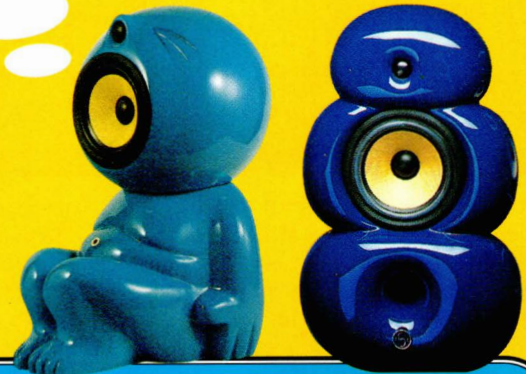
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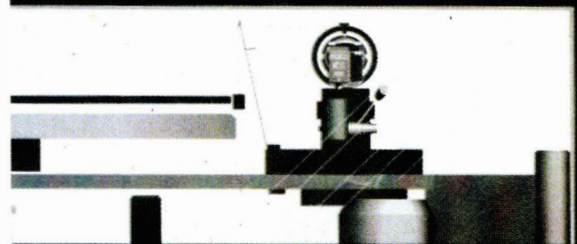
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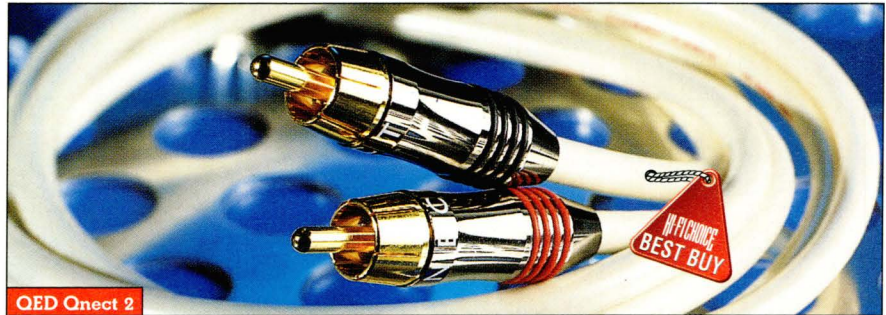
**I**t's 'ever-so-slightly-controversial-view-point' time again, as your hero opines that interconnects are generally less flawed than speaker cables. At any rate, the differences between interconnect cables seem less obvious than those between speaker wires. That said, once these tests got under way, it was not hard to find clear and repeatable differences between the various candidates on parade.

Quite by coincidence, we turned up Recommended examples priced from the least to almost the most expensive. The two cheapest recommendations, **Cable Talk Advanced 2** (£35) and **Straightwire Chorus** (£39.99), both offer a good basic performance, and have a comfortable margin of clear blue water between themselves and the kind of freebie cables that come supplied with most hi-fi separates. Cables such as these should establish a good basis in systems at the lower end of the 'serious' market, say up to about the £2,000 level. Importantly, they're manufactured to a high standard and should be compatible with pretty much any partnering electronics.

**SonicLink Black** (£50) and **Prowire Silver** (£59.99) offer slightly more refinement. Of the two I felt Prowire was more widely compatible, while SonicLink seemed to vary from merely good to excellent depending on programme material. The latter is also unscreened and generally a more 'tweaky' cable, in keeping with the company image (as I hope proprietor Graham Nalty won't mind me saying!). But don't let that put you off trying it — you don't have to wear an anorak to enjoy good sounds!

**Kimber Hero** (£110) and **Nordost Blue Heaven** (£135) are also unscreened and in price are beginning to approach the high end. Both are capable of very fine performances, and at this level I would suggest a home audition is mandatory. Wiring an entire system with a cable such as this is obviously expensive, but using just one pair between your favourite source and preamp, for instance, is more easily justifiable if the results are good — as they certainly can be.

Finally, two Best Buys seem to show the way at budget and moderate prices respectively. **QED Qnect 2** (£30) and **van den Hul D102mkIII** (£70) meet the basic Best Buy criterion: they sound as if they cost a lot more. Both are very solidly assembled, too, and completely compatible. If you want to spend a little, put them on your shortlist; if you want to spend a lot, put them on your shortlist anyway and you might be pleased how much you'll save! **RB**



QED Qnect 2



van den Hul D102mkIII



Cable Talk Advanced 2



Kimber Hero



Nordost Blue Heaven



Prowire Silver



SonicLink Black



Straight Wire Chorus

## UNDERSTANDING THE LAB TEST BARGRAPHS

**INDUCTANCE:** This is related to the current flowing through the cable and its associated magnetic flux. Interconnects with a parallel, spaced geometry tend to have a higher inductance which, in turn, tends to 'sharpen' RF resonances. This may impact on sound quality where RFI is an issue.

**CAPACITANCE:** This is another electrical constant related to the electrical field and charge maintained across the signal and return 'halves' of the interconnect. High capacitance may be linked to poor dielectric quality and/or a very tightly-packed geometry (see final category).

**RESISTANCE:** This is determined by the total cross-sectional area and conductivity of the interconnect's metal core(s). A high-ish resistance may degrade treble quality, especially if earth currents are allowed to circulate between poorly-grounded pieces of equipment.

**DIELECTRIC STABILITY:** This is reflected in the signal leakage that occurs between the signal and return 'halves' of the interconnect and the unwanted, random storage of charge measured as Dielectric Absorption. Poor dielectric properties are linked to impaired bass performance, with insulators like Teflon (PTFE) being preferred over Polyethylene and PVC, for example.

**EFFECT ON SIGNAL BANDWIDTH:** Here, the cable's LCR characteristics are used to determine any modification of the overall frequency response. Long lengths of a high-capacitance interconnect driven from a high impedance source (like a passive pot, for example), encourage a sweeter sound by rolling-off the extreme treble.

*Note: all measurements are normalised to a 1m length.*

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Clearart  
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Practical Hi-Fi  
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Sound & Vision  
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Movement Audio  
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Sevenoaks Hi-Fi  
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**CROSS**  
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Richer Sounds  
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W.M. Coupur  
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Monitor Sound  
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# CD: THE DRUG OF THE NATION

For dynamic digits, look no further. **Alvin Gold** (listening test) and **Paul Miller** (lab test) check out 12 new CD supermodels, and the results are not what you'd expect!

**T**here's been a steady stream of new compact disc players emerging over the last few months. This month, to do battle, we've assembled 12 of the latest models to do battle, which range in price from £450 to £1,300, but there is a clear emphasis on the upper end of the price band. Why are there so many expensive new models? One obvious reason is commercial: the hi-fi market is becoming increasingly polarised, with mid-priced equipment selling in smaller numbers, while more high-end gear has been comparatively buoyant.

Some of the tested new models may look familiar to seasoned readers. This is because a number of them use housings borrowed from existing models. Rest assured, they're all new.

One question frequently arises in discussions about CD players. How much should one spend, within a family of products that often appear to give scanty justification for exalted prices? The truth is that CD players *do* differ from each other in important ways. But it is a false perception that CD players are all much of a muchness.

It is true that CD was once promoted as offering 'perfect sound, forever': an exhortation which, if taken literally, would indeed point punters towards the cheapest players they could find. History has shown that this was a particularly glib piece of marketing speak.

The 'why spend more?' argument also stems from the fact that too many dealers, especially the High Street electronics multiples and out-of-town retail sheds, either don't give product demonstrations — or, more often, offer only meaningless product demos, often in unsuitable conditions, which are psychologically designed to reinforce preconceptions and ensure closure. Closure of the sale, that is.

On the whole, hi-fi's more expensive CD players are seldom sold in this kind of outlet. Most of the better brands try to deal exclusively with specialist dealerships geared towards providing effective service rather than necessarily the lowest price. It's a sad fact of modern life that current EU legislation forbids manufacturers to choose who they sell to — in public at least.

Hi-fi users should not be swayed by low, low price-tags, on CD players or any other hi-fi component. They will be best served by retailers who understand how good hi-fi systems are pieced together, how system components interact, how to provide a meaningful demonstration, and how to deliver appropriate before-and-after sales care. There are many such dealers, but if

you don't know where to find one, check the advertisements in this magazine, or call the BADA hotline on ☎ (0171) 226 4044.

## THE CAST LIST

MODEL.....	PRICE . . .	PAGE
Arcam Alpha 8SE .....	£600 . . .	p65
AVI S2000MC2.....	£899 . . .	p73
Copland CDA-266 .....	£1,199 . . .	p80
Cymbal CDP12 .....	£1,299 . . .	p81
Helios Model 2 .....	£950 . . .	p75
Marantz CD-17 KI Signature ...	£1,100 . . .	p77
Meridian 506 .....	£1,100 . . .	p79
Myriad MCD 500.....	£1,300 . . .	p82
Pioneer PD-S06 .....	£550 . . .	p67
Sony CDP-XA20ES .....	£450 . . .	p69
Teac VRDS-9.....	£700 . . .	p71
XTC CDP-1.....	£1,250 . . .	p83

## HOW THE TESTS WERE DONE

**I**n *Hi-Fi Choice's* unique and most rigorous formalised test procedure, every component is subjected to the following three-step programme of evaluations:

- 1) 'Sighted' hands-on listening by this author, physical examination, and functional testing, involving a wide range of programme material and partnering equipment.
- 2) Two days of unsighted panel auditions in which each player was presented incognito to an experienced listening panel. Each candidate is made to reproduce a standard programme of music. Partnering equipment is chosen for familiarity to the panel, and priced at a level commensurate with the hardware under appraisal. All equipment was thoroughly run-in before the tests began, and all players remained switched on and plugged into the mains until all tests had been completed.

The following pieces of equipment served during the tests:

**Densen Beat II** and **Musical Fidelity A1001** amplifiers, **Tannoy Definition D900** and **Definitive Technology BP2002** floorstanding loudspeakers, and **Nordost Red Dawn** speaker cables and interconnects. We used a **Krell KAV-300cd** CD player at the start of each session, to establish a level of competence by which the test candidates could be judged.

3) A programme of computerised objective tests undertaken in the laboratory of our Technical Editor, Paul Miller. See box on p63 for details.

These are by far the most revealing tests used by any hi-fi magazine. Measurement and listening tests were conducted independently and were not cross referenced before the reports were written.

## WHAT MUSIC DID WE USE?

**Joni Mitchell:** *Cool Water* from *Chalk Mark-In A Rain Storm* on Geffen 924 172-2

**Martin Taylor:** *I Thought About You* from *Two's Company* on Linn Records AKD081

**Alfred Brendel:** *Second Movement (allegro molto)* from Beethoven *Piano Sonata No 31, Op. 110* on Philips 446 701-2

**Wind Soloists of the Orchestra of the Age of Enlightenment:** dir. Anthony Halstead, *Finale (molto allegro)* from Mozart *Serenade in B Flat for 13 Wind Instruments* K361 on BBC Music magazine cover disc Vol VI, No 2.

Various other tracks for hands-on testing.

## THE LISTENING PANEL

Our thanks for the skills and time contributed by our listening panel drawn from the ranks of the hi-fi industry:

**David Inman** (Castle Acoustics), **Roger Batchelor** (Denon), **Keith Haddock** (REL), **Robin Marshall** (Mission), **Russell Kaufmann** (Morel/Densen), **Kevin Edwards** (Cable Talk), **Steve Cross** (Ruark).



Arcam Alpha 8SE p65



Pioneer PD-S06 p67



XTC CDP-1 p83



Teac VRDS-9 p71



Sony CDP-XA20ES p69



Meridian 506 p79



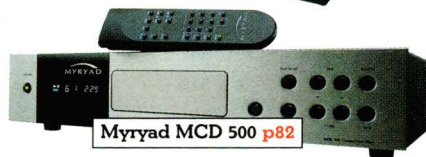
Helios Model 2 p75



AVI S2000MC2 p73



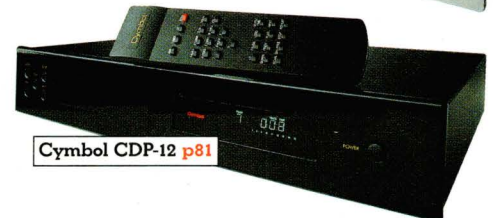
Marantz CD-17 KI Signature p77



Myryad MCD 500 p82



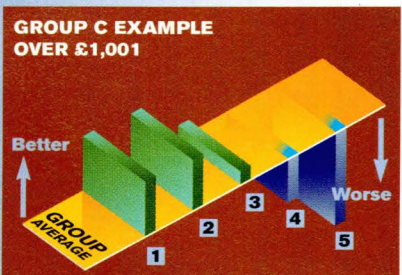
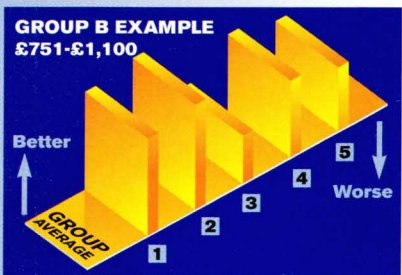
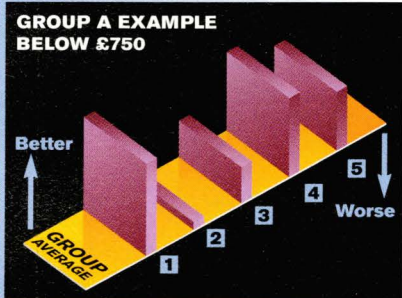
Copland CDA-266 p80



Cymbol CDP-12 p81

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:



UNDERSTANDING OUR BAR-GRAPH MEASUREMENTS

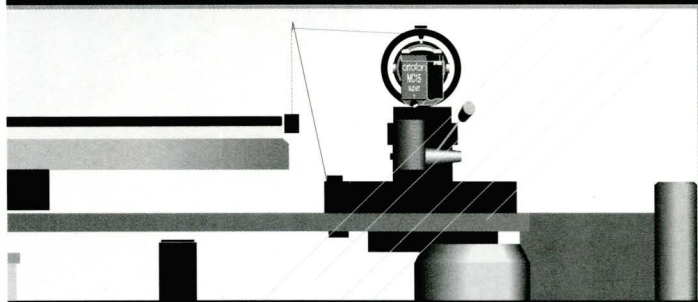
The measurements behind *Hi-Fi Choice's* unique bar-graphs are provided by our Technical Editor, Paul Miller, using both GPIB-controlled measurement hardware and his own, award-winning, PC-based Virtual Instrument software. Each bar-graph value is derived from a weighted statistic of several key measurements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

- 1 Suppression of Digital Images:** This indicates the effectiveness of the player's digital filter in removing 'aliasing' or 'stopband' distortions immediately outside of the audio band.
- 2 Jitter:** Any uncertainty in the timing of the digital code produces digital jitter, which manifests as an insidious form of distortion during digital-to-analogue conversion. The lower the figure the better.
- 3 Practical Dynamic Range:** This is determined by the player's signal-to-noise ratio and to what degree it is compromised by any noise modulation occurring under real signal conditions.
- 4 Harmonic Distortion vs. Level:** This bar chart value is derived from the variation in distortion both with frequency and signal level. The consistency and nature of the distortion also forms part of the equation.
- 5 Linearity:** Linearity is a measure of the player's low-level resolution. For example, if a signal coded at -80dB emerges from the player at -80.5dB then this represents a deviation in its linearity of 0.5dB.

TEST INNOVATOR OF THE YEAR

Our Technical Editor, Paul Miller, has been awarded Test Innovator of the Year by *Test* magazine, the leading European journal of the test and measurement industry. This gong came in recognition of Paul's Jitter Measurement Suite, as used to test CD players for *Hi-Fi Choice*.





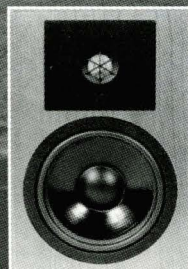
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# Arcam Alpha 8SE



The Alpha 8SE is the first Arcam CD player equipped to decode High Definition Compatible Digital (HDCD) CDs. As such, the '8SE is among several recently-introduced models to specify the Pacific Microsonics PMD100 digital filter and HDCD decoder (see Lab Report). The Sony transport mechanism, motherboard and the case are the same as those used in the Alpha 7 and 8, and the player appears to use the same NPC one-bit PWM bitstream D-to-A converter.

HDCD compatibility is a new string on Arcam's bow, although the filter's good reputation has derived more than partly from its performance with conventional stereo material. Reduced digital jitter is another claim.

The 8SE looks like the standard Alpha 7 and Alpha 8, with its curvy-moulded front panel and a rather wheezy drawer mechanism. The fluorescent display has a rather narrow viewing window, and is a bit too bright — a neutral density filter would have prevented unused indicator segments showing through. However, you can dim the display to a certain extent, or switch it off.

It has a plasticky feel overall, but the unit is well finished, and all features work as advertised. Most gizmos are accessible on

the front panel, making for a 'busy' appearance, but the controls are well organised. There is a compact and user-friendly remote control, but surprisingly for player that seems so well endowed, there is no headphone socket.

Owners of Alpha 7 and Alpha 8 players can upgrade to Alpha 8SE specification by means of a dealer-fitted upgrade kit that costs £299. There may be a trade-in value for Alpha 8 decoder boards, but this must be negotiated with your dealer.

### Sound quality

The Alpha 8SE came across as a clean, open and well-balanced player. "The atmosphere around the piano was good," commented a listener on hearing the Arcam's Brendel/Beethoven rendition. He went on to say: "The soundstage around the players was big and detailed, and timing is good" (Mozart). Another listener thought the Arcam was the "best by a mile — each track sounded better than it has done all day." This was at the end of the day, not the beginning.

Another panellist wrote: "There is detail on the Joni Mitchell track I have never heard before," He went on to praise the trumpet sound and leading-edge detail in the Martin Taylor track, and the texture of the wind instruments in the Mozart. There were criticisms, but they were pretty restrained. Most of them concerned a "thumpy" and "over-

warm" bass.

I concurred with the unsighted panel in liking this player — a lot. It offered consistently fine portrayals of recordings I knew well, but more importantly, its clear, open presentation always made unfamiliar recordings sound more interesting and engaging. With the Arcam, it was very easy to follow quiet background instruments and voices, even when these were battling with louder lines in the mix.

For example, good jazz ensemble recordings embody subtle elements of rhythmic timing, and the Arcam handled these particularly well, propelling piece after piece with a solid beat. Stereo imagery was spacious and well defined, with a fine sense of depth, and even a suggestion of height from one favourite Verdi Requiem recording (on Telarc).

### Conclusions

Explicit detail, good timing and a smooth, easy-going presentation make this HDCD player an excellent all-rounder. Stir into the equation the very reasonable asking price, and you have all the classic ingredients of a Best Buy. Upgradability from other Alpha models is particularly praiseworthy — other manufacturers please take note! AG

### VERDICT

**SOUND** ★★★★★☆  
**VALUE** ★★★★★★  
**PRICE** £600 (TWO YEAR GUARANTEE)

Top-notch, mid-priced, HDCD-compatible player has a fine combination of clarity, refinement and good timing. Easy upgrade option from Arcam's lower-priced models is of particular benefit.

A&R Cambridge Ltd, Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB  
 (01223) 203203

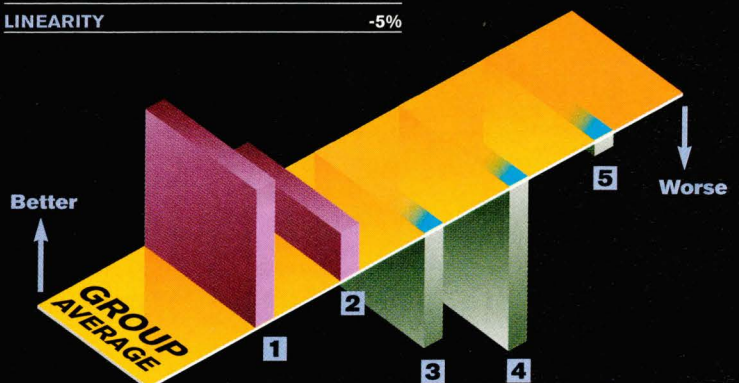
## THE LAB REPORT

Naturally, this player has much in common with the basic Alpha 8, reviewed in *HFC* 163. Justifying the SE suffix is the replacement of the original SM5843 oversampling filter by Pacific Microsonics' PMD100, a notional 'equivalent' that also offers full compatibility with HDCD-encoded software. In the event, it's the SM5864 bitstream DAC and Arcam's analogue filter stage that still dominate the measurements. The peak output level is still very high at 2.6V, for example, rising to a massive 4.9V in HDCD mode. Casual A/B demos could well be skewed in the 8SE's favour.

Features like the high 1 per cent distortion at -60dB remain apparent, as does the just-about-16-bit dynamic range. Jitter, however, has been squeezed to a fabulously low 191psec, so other technical performance factors are now the most significant arbiters of sound quality. The flat response, excellent stereo separation and good clock selection tell us little. Subtle, but important differences, such as the use of *level-shifting* latches to remove RF 'spikes' from the bitstream, may actually hold the key to the sonic contrast between the Alpha 8 and Alpha 8SE. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	54%
2	JITTER	18%
3	PRACTICAL DYNAMIC RANGE	-45%
4	HARMONIC DISTORTION vs LEVEL	-65%
5	LINEARITY	-5%



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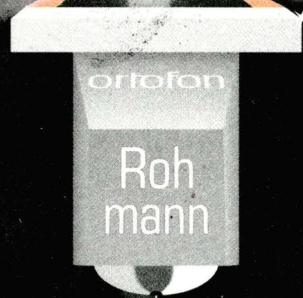
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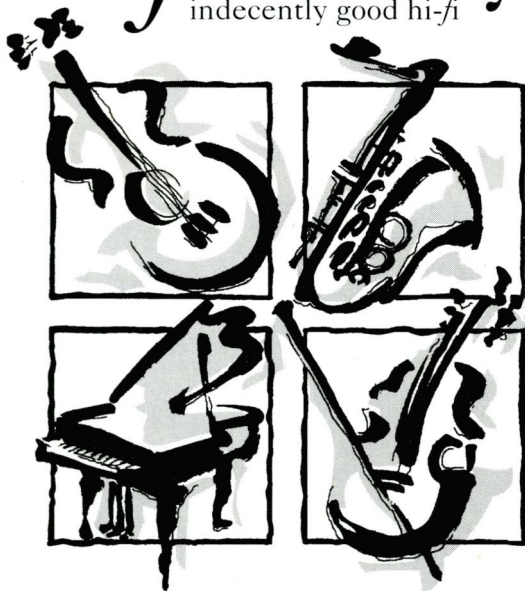


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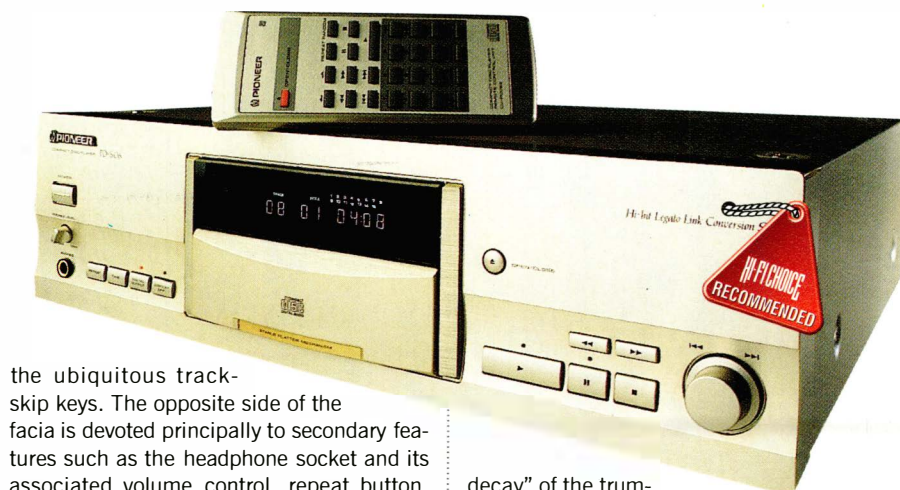


# Pioneer PD-S06

The PD-S06 incorporates a number of proprietary Pioneer technologies that you should expect to encounter in cheaper Pioneer products over the next few months. Prominent among these is a new twist on Pioneer's Legato-Link Conversion digital filter system (which claims to put some analogue warmth back into the 'clinical' sound of CD.) Dubbed 'Hi-Bit Legato Link Conversion S', it attempts to enhance low-level signal resolution by "requantisation of recorded 16-bit data into 24-bit data", according to Pioneer.

Other claimed enhancements include reduced jitter and an improved CD mechanism. Surprisingly, Pioneer has replaced its own best one-bit converters with 20-bit Burr Brown components, making this the first multi-bit Pioneer player for years. The boffins claim that multi-bit converters offer inherently higher resolution at high frequencies, and are less susceptible to jitter.

It's built like a tank, and sports an impressive gold-anodised front panel. The loading tray is centrally mounted below the display. The right-hand side of the fascia includes a full range of transport controls, including a rotary indented switch for track selection, which is a great improvement on



the ubiquitous track-skip keys. The opposite side of the fascia is devoted principally to secondary features such as the headphone socket and its associated volume control, repeat button, plus switches for the display mode (you can turn it off) and digital outputs.

## Sound quality

This unit scored well above average among our listening panellists. For its price, this is enough to earn a formal Recommendation, but closer observation of our listeners' comments reveals that the Pioneer failed to generate massive excitement. Obviously no effort has been spared to knock off any rough edges that might identify the source's digital provenance in a pejorative sense; but in the process, have there been some essential musical sparks extinguished as well?

"A little too laid back... the piano tone is too sweet," ran a typical comment on the Brendel/Beethoven excerpt. One listener thought the same piece sounded "one-dimensional". Another accused the Pioneer of sounding bland and lacking sparkle, saying that "it doesn't do anything terribly badly or particularly well either."

More positive notes praised the "natural

decay" of the trumpet in the James Taylor track, even if the guitar "sounded distant". From another quarter came accolades for this player's "warmth and generous sound-stage... and a nice sense of occasion." References were made to the Pioneer's well-extended bass on various occasions.

I could never escape the soft-edged character, but the almost understated quality of it brought unique rewards. My own listening pointed to consistent, well-defined imaging, which is a recognised Legato Link strength and difficult to assess in a panel-test context, since most listeners sit off axis.

## Conclusion

I would argue that the PD-S06 is too complex, and while polite, it never bites, even though all musical instruments need to show their teeth from time to time. The PD-S06 is built like a potentate's palace, though, and its technology is more than routinely interesting. In any assessment it offers excellent value for the modest asking price. *AG*

## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £550 (ONE YEAR GUARANTEE)

Smooth, enjoyable, but ultimately a soft-centred player. But if other players cause your nerves to jangle, this player's attractive price is one of many features to recommend it.

Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP.  
 (01753) 789500

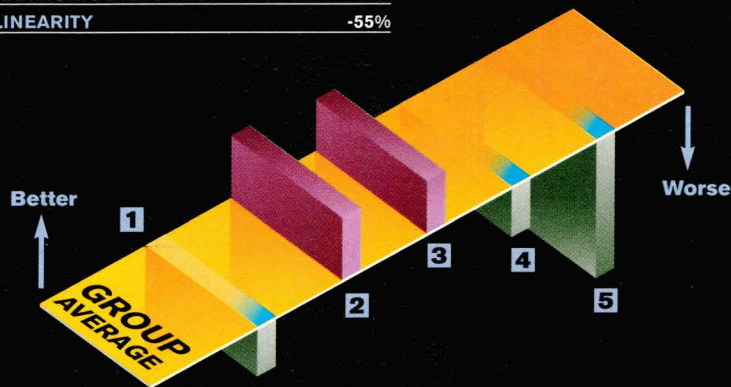
## THE LAB REPORT

This latest instalment in the Legato Link tale does not cause a dramatic loss in the treble response of the player. Indeed, the PD-S06 actually has a mild +0.3dB boost at 20kHz, right at the top of the audio range. In practice, the Legato Link S digital "filter" mathematically invokes odd-order harmonics of existing high-frequency signals, placing them outside of the normal 20-20kHz CD audio range but within the 'curve' of its digital filter up to 44.1kHz. This is intended to replicate some semblance of ultrasonic musical information, though in practice, it's a very crude approximation and one likely to work with unpredictable levels of success in different systems.

On other counts the PD-S06 fares well. The jitter spectrum is not unlike that of Marantz's CD-17 KI-Sig, with some low-rate patterns joined by a spread of data-induced sidebands. Nothing to worry about, though, as the total is just 186psec – a fabulous result. Despite picking up at lower levels, distortion is also incredibly low at just 0.0045-0.01 per cent right across the audio band at -30dB. Similarly, its 'true' dynamic range settles out at a decent 100dB or so, despite its linearity 'bottoming out' at this lowest point. *PMJ*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	-20%
2	JITTER	23%
3	PRACTICAL DYNAMIC RANGE	20%
4	HARMONIC DISTORTION vs LEVEL	-20%
5	LINEARITY	-55%



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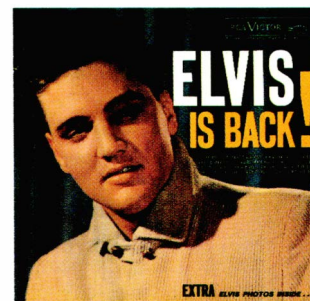
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# Sony CDP-XA20ES

This offering from Sony joins the honourable list of Japanese ex-factory designs which have undergone an extensive programme of UK modifications. These are designed to add purist appeal to a mass-manufactured brand, at the kind of prices genuine purist marques cannot hope to match. This formula has been pursued successfully by Marantz, with the K I Signature range; but in particular by Pioneer, with its PD-S505 Precision player (*HFC 166*). The latter is arguably the CDP-XA20ES's closest competitor.

Within the CD loading drawer is Sony's 'Fixed Pickup Mechanism', an arrangement reminiscent of Meridian's CD players, but with a disc-stabilising weight that must be placed manually upon a CD prior to playback. D-to-A conversion is said to come courtesy of the company's proprietary current-pulse chip. Other features include a dimmable display and off-centre insulating feet.

The "tweak" programme also led to the removal of a variable-level analogue signal output, replaced by an electrical digital output, and specific internal component changes intended to reduce RF and other noises.

The character of this player is somewhat schizophrenic. On the one hand it appears to have been aimed at the purist – Midi Man is hardly likely to be impressed by the springy loading tray and requirement for manual fitting of a disc clamp every time a disc is loaded. The captive, oxygen-free-copper, gold-plated mains lead also looks like a purist measure.



But there is also every feature here but the kitchen sink, including a crammed display with track-calendar readout. And the front panel is stacked with operating conveniences such as track programming, tape-editing options and other clutterati. The fast-acting track search, driven by an indented rotary control, is guaranteed to have popular appeal; and the remote control is unusually user friendly.

## Sound quality

The panel could not agree unanimously on this one, but in general they expressed a feeling that something was not quite right. While the outside edges of music came across effectively, less certain were more subtle internal virtues. "It's quite nice and

clean," wrote one listener, "but not very exciting." Another panellist complained that the piano piece sounded a bit bland "and didn't hold my attention". Also there was a suggestion of tonal imbalance, with odd but not entirely isolated comments of a strong presence-band effect. These also pointed to loss of upper bass, and thus a rather thin, disembodied effect. One guest described the treble as "thin and splashy".

Praise came from different quarters: for a player always sounding comfortable in its own skin and never harsh nor unpleasant. For my own part, though, I felt it underachieved in my own hands-on listening, and never equalled the form of the remarkable CDP-X3000ES reviewed last year (*Best Buy, HFC 169*). In particular, with the CDP-XA20ES I detected a loss of architectural solidity: music was often somewhat disembodied and light; lower frequencies sometimes seemed blurred.

## Conclusion

In every sense of the words, this player is impressively smooth, quiet and slick. It responds with alacrity to the user's bidding, even if the drawer loading mechanism proceeds at a rather stately pace. The 'XA20ES appears very credible technically, but musically it underwhelms. It is tidy rather than detailed, slick where it should have been engaging. *AG*

## VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £450 (ONE YEAR GUARANTEE)

- ❏ Not quite the Pioneer Precision competitor it might have been. Despite a novel combination of user features and intriguing technology, the XA20ES never quite hits the G-spot.
- ✉ Sony UK Ltd., The Heights, Brooklands, Weybridge, Surrey KT13 0XW.
- ☎ (0990) 111999

## THE LAB REPORT

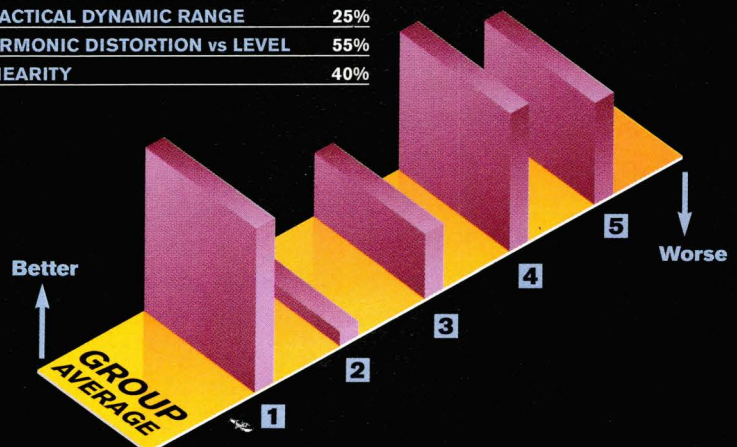
The bargraph tells it all: Sony's latest masterpiece of digital engineering continues to set the technological pace. The 'Full Feedforward' eight times oversampling filter is a veteran of earlier players, while two CXA8042 'Current Pulse' DACs are employed in a complementary configuration. This helps reduce distortion, improve the player's S/N ratio and control the output of requantisation noise from the DAC's noise-shapers, to ensure a clean, ultrasonic spectrum.

Stopband rejection is better than 105dB, for example. Midband distortion is very low at 0.007 per cent (re. -30dB), though there's the merest hint of compression at very high frequencies and levels where THD hits a minimum of 0.015 per cent.

The low 208psec of jitter, meanwhile, is accounted for by some high-rate patterns and just 136psec of data-induced phenomena – in other words, nothing to worry about! Low-level linearity holds true to within +0.0/-0.4dB over a full 100dB dynamic range, the response is perfectly flat to within 0.1dB and de-emphasis accuracy is spot-on. As with many players in this test, however, the peak output level is at least 2dB over the 2V standard, at 2.55V, so beware of hastily conducted A/B demonstrations, in which the Sony might have a misleading perceived advantage. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	64%
2	JITTER	5%
3	PRACTICAL DYNAMIC RANGE	25%
4	HARMONIC DISTORTION vs LEVEL	55%
5	LINEARITY	40%





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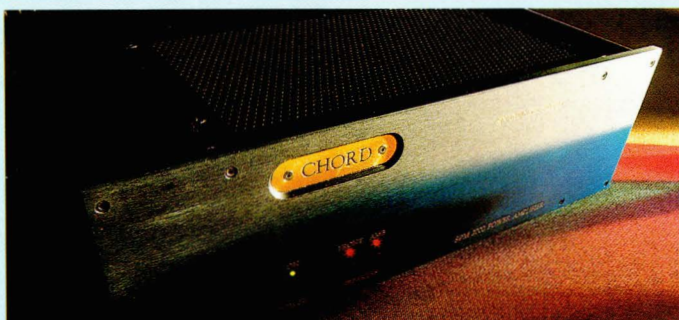
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# Teac VRDS-9

Though it has been designed to match the Midi-size dimensions of Teac's successful Reference 500 'lifestyle' system (285 x 133 x 330mm), this model is no lightweight. It tips the scales at 9kg, which is heavier than many respectable amplifiers. The VRDS-9 features Teac's proprietary VRDS (Vibration-free Rigid Disc clamping System) CD mechanism, which clamps the disc with a mildly dish-shaped profile. This is claimed to reduce the power drawn by the laser pickup servo motor, with consequent assumed benefits for sound. Digital hardware is said to include twin multi-bit PCM1702 chips from Burr-Brown, configured to minimise a phenomenon of multi-bit converters known as 'zero-cross distortion'.

The VRDS-9 would be adequately equipped even without its convenience-boosting remote control. However, the display is below the thin loading drawer and is thus difficult to view when the drawer is open, and still tricky to view when closed.

The remote control is large, its buttons are thoughtfully arranged, and among them are studs for index search, fader, muting, volume adjustment (to -20dB in 1dB steps), features for dubbing (auto space etc) and display on/off. There is even a timer play fea-

ture. System control sockets are fitted to the back of the player, so that it may be operated in harmony (and from a single handset) with a complete system. (For this very purpose there is a system remote handset available that omits only a couple of minor CD-related features.)

### Sound quality

The Teac was a tricky beast to pin down, due to the way it sounded inconsistent from system to system in my hands-on tests. Even between tracks in the panel tests its character seemed flexible, which resulted in some widely-varying scores. Regrettably the unsighted listeners were not overwhelmed by enthusiasm.

One listener was satisfied by the "punchy" sound and evident good vocal quality of the Joni Mitchell track, but felt the guitar in the Martin Taylor recording was "indistinct", and the trumpet "veiled". The subtle and elegant sound of Brendel's Beethoven was perceived by the same listener as "unatmospheric", and the vital Mozart recording "lacked fire".

Another participant took a more positive tack, and found little to fault in the VRDS-9's performance. "Well focused, well detailed, and with a good balance," he said, though not without qualifying this with an enigmatic suggestion that "there should be a 'but' — but I can't find it." In concluding he opined that "this is *probably* a good player".

Other opinions were most closely aligned with the first listener's judgment. "The voice

is a bit strangled [Joni Mitchell], and I don't like the trumpet sound [Martin Taylor], but the piano and wind band recordings are OK," was one sum-up comment from a listener who deemed the Teac a "Curate's egg."

I concur with this consensus view. This player sounds superficially sharp and clear, but lacks deep resolving power and therefore ends up drawing in musical caricatures. This left a disappointing impression of some recent families of recordings known to give good results in other settings — Sony Music's SBMs and Deutsche Grammophon's 4Ds. A remark culled from the panel test notes, to the effect that the Mozart sounded as though it was played by a "small town orchestra", is only too apt, I fear.

### Conclusion

The VRDS-9 is undeniably good looking, beautifully built, and the natural choice for owners of Teac's Reference 500 system. But between audiophile ideals and the factory gate, something has gone awry. What results is a player that in a number of ways adds up to less than the sum of its parts. **AG**



### VERDICT

**SOUND** ★★☆☆☆

**VALUE** ★★☆☆☆

**PRICE** £700 (ONE YEAR GUARANTEE)

Well-crafted and not expensive, given the impressive engineering on display under the hood. Ultimately, however, a sterile-sounding and not entirely consistent player.

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

## THE LAB REPORT

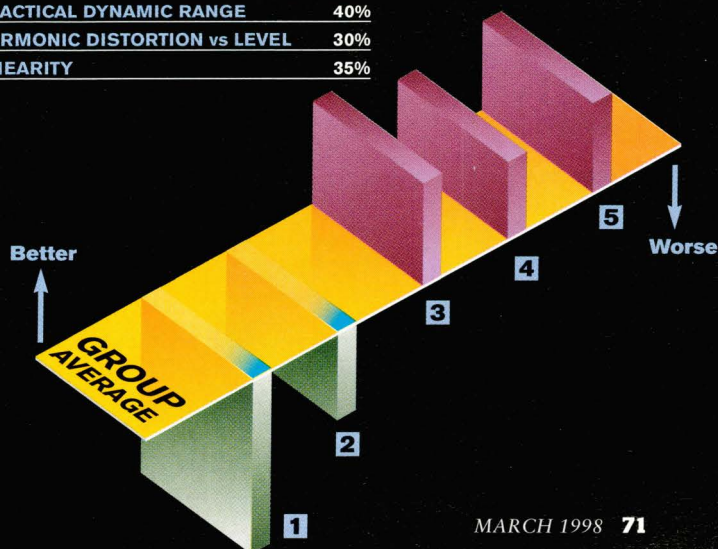
Nestled within compact confines lies a lightweight version of Teac's renowned VRDS CD mechanism, seen earlier in players like the VRDS-7 (HFC 155). Teac's choice of Burr-Brown's 20-bit PCM1702 DACs, however, owes more to the 20-bit PCM63P devices used in the VRDS-25 (HFC 163) than the bitstream chips chosen for the VRDS-7. The same eight-times oversampling filter is used, too, so the VRDS-9's ultrasonic spectrum, with its rippled but mild stop-band images, is a familiar sight. Jitter is low at 252psec, but is composed of PSU and data-induced components rather than any low-rate spikes that often seem to emerge from Philips's omnipresent CDM12 mechanism.

This might be a multi-bit DAC, but technology marches ever onward. So where once one might have expected to witness big jumps in distortion between 0dB and -30dB, those are avoided here with figures of 0.0013-0.0045 and 0.004-0.008 per cent, respectively.

The 109.5dB S/N ratio is as wide as expected but modulation noise is lower at +8.7dB, ensuring the VRDS-9 has the widest practical dynamic range of its group. Low-level linearity is also excellent but the player's output impedance is too high at 1.2kOhms (a problem common to many Teac players), so I'd avoid low-input-impedance amps from the stables of MF or Arcam, for example. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	-70%
2	JITTER	-35%
3	PRACTICAL DYNAMIC RANGE	40%
4	HARMONIC DISTORTION vs LEVEL	30%
5	LINEARITY	35%



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# AVI S2000MCII

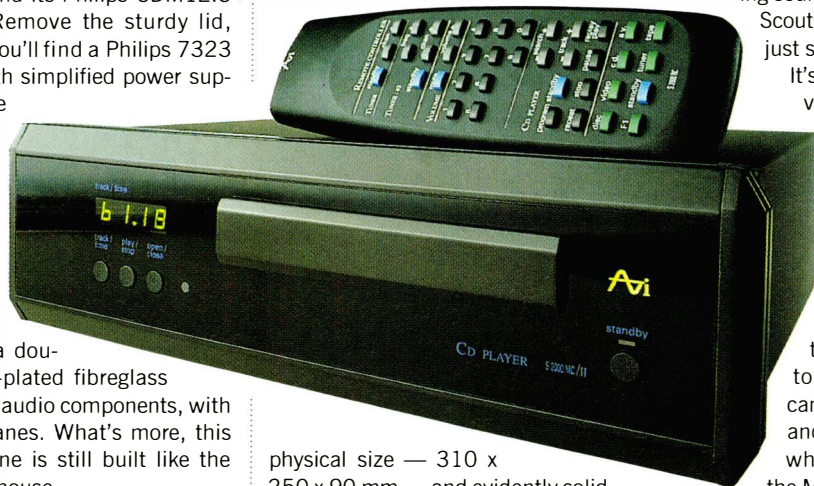
Though it looks almost identical to the £1,300 S2000MC Reference Recommended in *HFC* 169 some months ago, the MCII version is a new 'budget' addition to AVI's range — if an £899 player can be described this way!

It shares all of the Reference model's external features, and its Philips CDM12.5 CD mechanism. Remove the sturdy lid, however, and you'll find a Philips 7323 Bitstream DAC (with simplified power supply) rather than the Reference model's costly pair of Burr-Brown PCM63P 20-bit converters. Still, even though the MCII is £400 cheaper than the Reference model, it still benefits from a double-sided, through-plated fibreglass circuit board for the audio components, with multiple ground planes. What's more, this less exalted machine is still built like the proverbial brick outhouse.

Should you wish to acquire a complementary amplifier, the natural choice would be AVI's S2000MI integrated design,

Recommended in last month's test.

Avant-garde styling is not what you'll remember about the S2000MCII. On the rather fussy front panel, a plain Perspex insert incorporates a basic track-time display. The overall effect is inelegant, though this is counterbalanced by the unit's small



physical size — 310 x 250 x 90 mm — and evidently solid build quality.

Nothing's been done to improve upon AVI's eclectic custom control system, as noted in our review of the Reference CD player in *HFC* 169. The controls are obstructive and even counter-intuitive in certain respects, while the display, I feel, is excessively bright, poorly formed and has an uninformative readout. It shows time and track information, but not at the same time.

The drawer shuts with a slam, and the whole effect is rather utilitarian for such a costly player — but at least the modestly-endowed system remote control (supplied) is friendly and usefully equipped.

## Sound quality

The AVI drove a wedge between two factions in our listening panel. Some believed that the player sounded "smooth and musical, with good timing, real authenticity and authority where necessary." In the other camp the view was that the Brendel recording sounded "like a cheap piano in the local Scout hall: all the finesse has gone; it's just someone banging out the notes."

It's hard to see how these opposing views could be reconciled. The results of my own listening tended to reinforce the second view proposed above, but without all the negative connotations. My notes describe a player with a strong presence band (thus giving prominence to vocals), and a recessed bass. It tended to sound rather bright and tonally lightweight; sometimes it came across as rather coarse-textured and unsophisticated — especially when measured against players like the Marantz CD-17 KI Signature.

But I appreciated the AVI's strong resolving power, its dynamic capabilities and the way it was able to cast light into denser musical passages glossed over by other players.

## Conclusion

It was not within the scope of this review to compare the MCII model directly with the Reference version. In our earlier review the latter was deemed bright and lightweight, and the new model still sounds shiny. As a consequence this player must be system matched with greater care than usual. Choose this player to add spice to a recessed but otherwise well-behaved hi-fi rig. **▶▶**

### VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £899 (ONE YEAR GUARANTEE)

Forward, sometimes 'in-ner-face' player, which is also capable of fine resolving power and impressive dynamics. The display and control system are looking increasingly out of date.

AV International Ltd., Unit F3C3, Bath Road Trading Estate, Stroud, Gloucestershire GL5 3QF.  
 (01453) 752656

## THE LAB REPORT

Same midi-sized enclosure, same Philips transport, even the same in-house track-selection software. Yet AVI's S2000MCII is fundamentally different from the lookalike S2000MC Reference (*HFC* 169) which employs Burr-Brown's costly 20-bit PCM63P DACs.

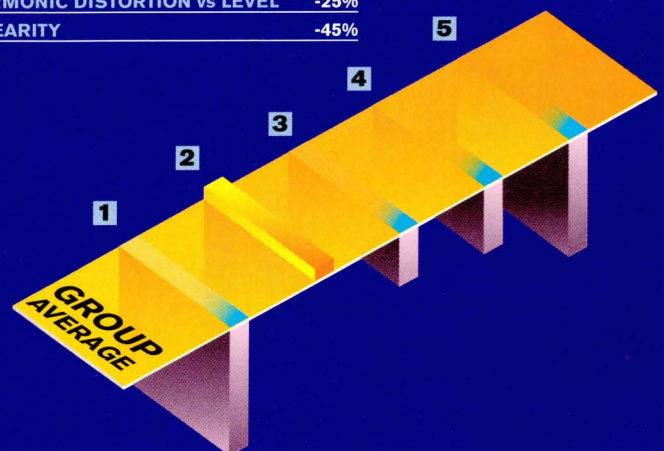
The S2000MCII, by contrast, has resurrected Philips' SAA7323 — one of the early PDM BitStream converters based on the grand-daddy of them all, the SAA7320.

This explains why the player's jitter spectrum is really quite unusual, for not only is the overall level significantly higher than the S2000MC Ref at 418psec, but it also includes some very high-order data-induced components. As a 'fingerprint' this spectrum is unique, for to the best of my knowledge, no other currently-available player uses the SAA7323.

AVI has modified the analogue filtering of this player, improving its rejection of ultrasonic noise but also causing a mild droop in the treble, amounting to -1.2dB at 20kHz. Distortion is equally well controlled, holding to a consistent 0.007-0.01 per cent at -30dB while a 16-bit resolution is maintained by the 98.1dB S/N ratio and innocuous +2.7dB noise modulation. A very different kettle of fish to the S2000MC Reference! *PMJ*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	-50%
2	JITTER	5%
3	PRACTICAL DYNAMIC RANGE	-20%
4	HARMONIC DISTORTION vs LEVEL	-25%
5	LINEARITY	-45%





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# Helios Model 2

Regular readers of *Hi-Fi Choice* will first have encountered the brand-name Helios in Jason Kennedy's review of the £2,550 Stargate CD player, on p48 of *HFC* 174. As he explained then, Helios products are manufactured in the South of France, by a company called ETNA whose principal concerns are apparently high-tech and military in nature. If I was to say more, I'm afraid I'd have to shoot you.

The Model 2, middle rung in a three strong range, claims to be based on a Philips CDM12.4 transport mechanism, enhanced with a low resonance carbon-fibre disc tray, and a laser carriage respecified to reduce resonances and servo workload.

Helios claims to have rewritten the CD player's control software from scratch, in-house. This encompasses the management of transport and laser, even the operating controls. The aim, allegedly, is to reduce jitter. The digital-to-analogue converter is a Crystal CS4328, beefed up with a custom-uprated over-sampling algorithm allegedly devel-

oped by Helios in conjunction with Crystal.

The player, with a fascia comprising a thick slab of Perspex, is ultra-simple and classy. Ergonomics are excellent, but the fast-moving and rather noisy drawer mechanism spoils the sophisticated image.

## Sound quality

In its sound quality, the Helios is as individual and highly characterful as the circuits under its lid.

On the whole we felt the player was

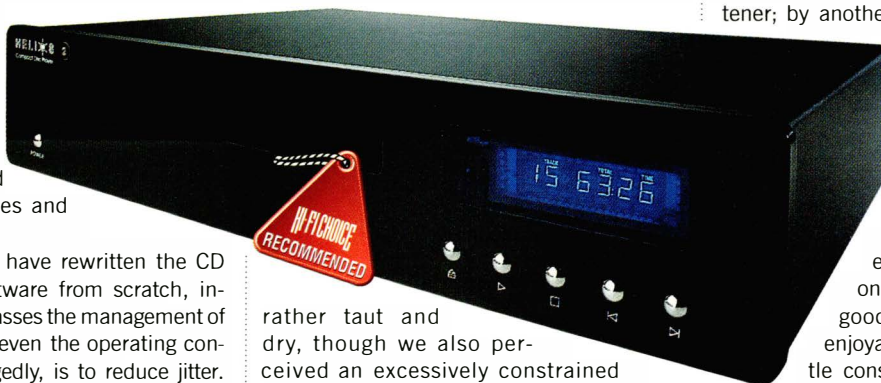
ing to make this an arresting but uneven performer. By many the Model 2 will be judged according to personal taste.

This is not necessarily negative; many colossi of hi-fi mythology made their reputations with products that creatively bent the rules of accurate musical reproduction.

The quality of bass reproduction engendered disagreement among our panellists. Some complaints of an "overblown" and "muddy" sound were interpreted elsewhere (more benignly) as "warmth" by one listener; by another as a "big, authoritative" quality. This contrasted with "bright" vocals (Joni Mitchell) and a "shallow, albeit well-articulated piano sound" (Brendel). Odd tracks were greeted by individual listeners with real enthusiasm ("Lovely" wrote one of the Mozart; "It has good depth, flows well, and is enjoyable..."); but there was little consistency probably because the Helios cast its light and shadows in unexpected (musical) places.

## Conclusion

I find it ironic that a CD player should be distributed by a company called Absolute Analogue (and publicised by an operation dubbed Vinyl Demand). The Helios Model 2 does not exhibit an overtly analogue nature. In fact, it has a highly characterful sound, whose distortions are sometimes beneficial and sometimes harmful, but rarely is this unit less than interesting, and occasionally it is actually enthralling. Recommended. *AG*



rather taut and dry, though we also perceived an excessively constrained stereo soundstage. Furthermore there was also a hint of some 'gain-riding' effects — in essence, a slight inability to preserve the integrity and freedom of musical dynamics. Nonetheless there was still an almost visceral sense of air and space surrounding the performers on many discs.

Another observation was the way this player tends to recreate the source material in its own image, complete with a degree of coloration, in the upper midband. (However, in my experience an almost glassy stridency is not unknown in CD players equipped with Crystal Semiconductor DACs.) We picked up on some 'granularity' too, all factors conspir-

## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £950 (TWO YEARS GUARANTEE)

Individual to the soles of its (shock absorbing) feet, this is an uneven, but not untalented performer. Check system compatibility carefully — it may be worth a listen.

Absolute Analogue, PO Box 1532, Fordingbridge, Hants SP6 1BU  
 (01425) 654488

## THE LAB REPORT

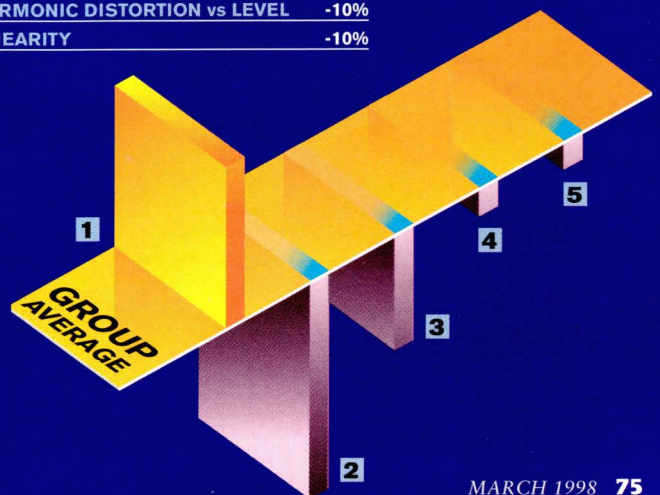
The Model 2's high 5.2V output is some +8.3dB greater the notional 2V standard, and will make a mockery of any unmatched A/B demonstration, so please beware. It features a fabulously low sub-1-0hm output impedance, so it'll drive almost any interconnect/amplifier combination with aplomb.

The analogue stage is driven hard, however, and distortion creeps up at high frequencies to 0.03 per cent, as does intermodulation distortion (IMD). Sadly, jitter is also high by the standards of the group at 878psec, and very high by the standards typically achieved by textbook implementations of the Crystal Semiconductor CS4328 DAC. High-order data-induced sidebands and power supply-related phenomena muddy what is usually a very clean-looking spectrum (values around 200psec are not uncommon). Is the unusual disc-clamping regime the culprit, I wonder?

The 93.7dB S/N ratio also is a shade under-par, though the bump in ultrasonic output at 75kHz is entirely typical of the CS4328 bitstream converter, submerging any trace of distortion harmonics with a broad carpet of noise through the -10dB to -60dB range. Low-level linearity is slightly compromised around the -90dB to -100dB mark, adding further weight to the argument that Helios's digital engineering is not quite up to the standards of its analogue expertise. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	65%
2	JITTER	-85%
3	PRACTICAL DYNAMIC RANGE	-45%
4	HARMONIC DISTORTION vs LEVEL	-10%
5	LINEARITY	-10%





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# Marantz CD-17 KI Signature

This is one of the latest models in the expanding series of Marantz products bearing the 'KI' signature of the company's in-house hi-fi guru, the one-time fashion photographer Ken Ishiwata.

The CD-17 KI Signature is based on the CD-17, which in turn was derived from the chunkier CD-15. While the '15 deployed Philips' chunky CDM4 CD die-cast mechanism (now obsolete), the '17 incorporates Philips CDM12.3 mech — deemed a controversial choice by some pundits.

Signal processing is said to be a Philips DAC7 Bitstream converter, feeding Marantz's proprietary HDAM (Hyper Dynamic Output Module), which boasts discrete silicon components rather than ICs. This, according to Marantz, leads to a low output impedance and a high slew rate.

Marantz says the CD-17 is rebuilt by hand with various high-spec components to bring it up to KI-Sig standards. The upgraded parts include a captive Oxygen-Free Copper (OFC) mains cable. Regrettably our test sample had been reassembled incorrectly following modification, leaving the case strongly

skewed. The manufacturer claims this problem is a one-off, but one would expect better quality control for the price.

In every other respect the CD-17 gives every indication of being superbly constructed. Look under the hood and you'll see copper screening used widely in an attempt to reduce the effects of eddy currents and RF interference. The remote control is a fabulous gold-finished confection, with sensibly grouped buttons, including a volume control

to get excited about".

At the same time we praised the player for its ability to paint depth and width into soundstages. This was in stark contrast to the noticeably flat, almost dimensionless quality of imagery portrayed by some of the Marantz's peers in this test.

My hands-on listening pointed in broadly the same direction. This is a good, sometimes very good, but not outstanding player. It was always smooth, elegant and well proportioned in every sense, but lacked any

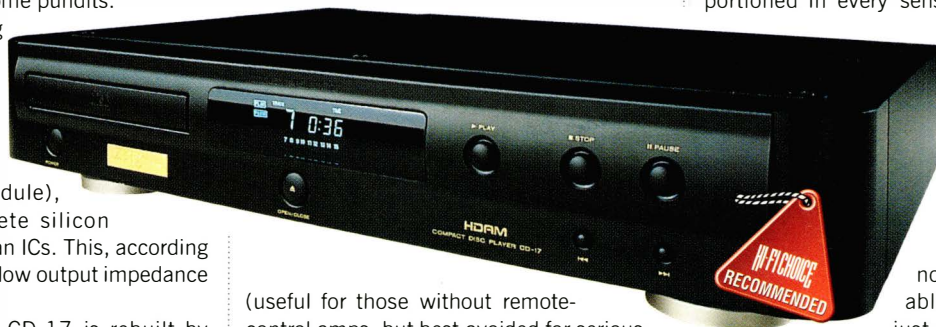
sense of edge, that frisson of excitement that should elevate great music-making above the realms of the ordinary.

It reproduces notes with considerable refinement, but just fails to enthuse,

perhaps because it can sound a little homogenised in the extreme treble, and because its balance tends to favour the bass, which nevertheless lacks the solidity and presence sometimes found elsewhere.

## Conclusion

If refinement is what you seek, the CD-17 KI Signature is about as refined as CD players come. Long-term listeners should not suffer the fatigue that compact discs still cause when played in the wrong machine. If you're looking for more dynamic qualities from your digits, however, you may find this player lacking. (But see *Systems*, HFC 163, p10). In any case, it's well worth shortlisting. Recommended. AG



(useful for those without remote-control amps, but best avoided for serious listening). A display switch and dimmer are included — the display itself includes a calendar-type track display.

## Sound quality

It sounds like a Marantz all right — the panellists appeared to have its measure right from the outset, even though none of them identified it by name. Our listeners liked the CD-17 KI-Sig's performance in the blind listening sessions, and representative comments included the following: "subtle tonal nuances"; "dynamic — plenty of weight and atmospheric but perhaps a little heavy going [Joni Mitchell]"; "enjoyable — the trumpet [from the jazz track] is a little distant, but the guitar is convincing"; "good, but nothing

## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £1,100 (TWO YEAR GUARANTEE)

Refined, articulate and three-dimensional sound, which only lacks the edge of danger to lift it clear of the crowd.

Marantz Hi-Fi UK Ltd., Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middlesex (01753) 680868

## THE LAB REPORT

Regardless of the changes Marantz claims to have made in upgrading the £800 CD-17 to the £1,100 CD-17 KI Signature, a comparison between data from the CD-17 reviewed in HFC 155 and this month's candidate proves very interesting. There's no obvious technical difference between the two players at all.

NPC's SM5841 oversampling filter provides the same modest 54dB rejection of stopband images, while Philips' SAA7350, used here to provide a bit-stream, still causes a plethora of high-order sampling images to criss-cross the spectrum, both in and out-of-band. This is not a new phenomenon and has been reported in earlier issues of *Choice* with other players using the old SAA7350 noise-shaper — designs like the Kenwood DP-7060, the Sherwood TEMA CD-1 and Teac VRDS-7 for example.

Otherwise, the KI-Sig player still provides an impressive 109dB S/N ratio and excellent low-level linearity, with errors of just +0.3dB/-0.2dB over a full 100dB dynamic range. Jitter adds up to a respectably low 236psecs, while conventional harmonic distortions fall as low as 0.0006-0.006 per cent (re 0dB) and 0.0014-0.02 per cent (re. -30dB), all from a single DAC7 converter. Good stuff, but we've seen it before. PM

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	-60%
2	JITTER	60%
3	PRACTICAL DYNAMIC RANGE	40%
4	HARMONIC DISTORTION vs LEVEL	35%
5	LINEARITY	50%



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# Meridian 506

The 506 is one of hi-fi's longer-running designs, and during its lifetime it has been improved to keep up with the times. Once again Meridian has been busy: as you'll see in the Lab Report, the 506 now incorporates a 20-bit 'Delta-Sigma' digital-to-analogue converter from Crystal Semiconductor. You wouldn't guess it from the player's exterior, which has not been revised in any way.

The 506 shares its DAC with the more expensive 508 model (£1,685) from the same stable; in this cheaper player there are, apparently, less rigorous re-clocking circuits. On the audio side, there are only single-ended (phono) signal outputs — no XLRs. However the transport mechanism is said to be the same data-grade, linear-tracking, three-beam laser pick-up; and elsewhere under the hood there is a sprinkling of audiophile components and a discrete Class A output stage.

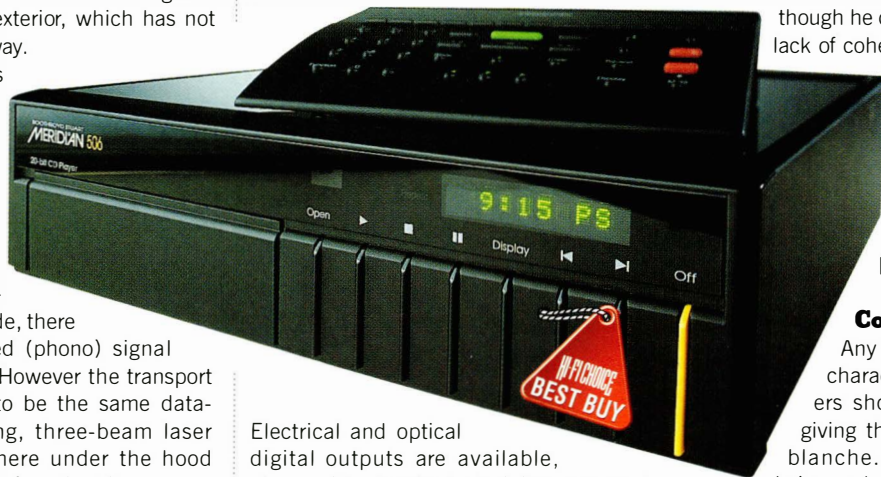
The 506 is now supplied with Meridian's free-standing MSR full-system remote hand-

set, previously available only at extra cost.

In all other respects nothing has changed: the CD mechanism is still installed within the loading drawer, in an ongoing attempt to marry the mechanical advantages of a top loader with the convenience of drawer loading.

most of all it is smoother, more organic and progressive — less synthetic if you will.

The panel recognised these qualities. One tester wrote that the 506 wasn't particularly dynamic, but "...perhaps it doesn't need to be, because it was more enjoyable to listen to." Another described it as "better [than the last model], with superior tonality," though he criticised what he saw as a lack of coherence in the Mozart wind piece. A third golden-ear described the 506 as "nice and atmospheric" [Joni Mitchell], and "lacking in bite and dynamics, but fluid and progressive [Beethoven]."



## Conclusion

Any criticisms were mild in character, but prospective buyers should note that we aren't giving the 506 an absolute carte blanche. Nevertheless, despite being perhaps softer edged than previous Meridian players, the 506's inherent resolving power is considerably greater in my view, which was amply demonstrated in my own hands-on listening using a wide range of amplifiers and loudspeakers.

The bottom line is that this player possesses considerable charm and resolving ability, and is strikingly more lively, open and three dimensional than the model it replaces. The clipped styling looks as contemporary as ever, and although its ergonomics will not please every user, the 506 is a worthy improvement. The 500 Series has the makings of a classic line — and this example is a Best Buy. *AG*

Electrical and optical digital outputs are available, along with standard Meridian 'comms' sockets for hook-up to other components and systems from the company's range.

## Sound quality

If it looks indistinguishable from its predecessor, the 506 sounds strikingly different. Indeed its sonic performance doesn't resemble any earlier Meridian player I have heard.

There is a new-found sense of warmth and grace, and a more crystalline purity in the higher registers where its predecessor could sound processed and compressed. It offers altogether superior musical portrayals, with more light and shade and a wider effective dynamic range than before, but

### VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★☆  
**PRICE** £1,100 (TWO YEAR GUARANTEE)

A new DAC breathes fresh life into this long-running member of a near-classic product line. Ergonomics enhanced by inclusion of infra-red system handset as standard.

Meridian Audio Ltd., Stonehill, Huntingdon, Cambs PE18 6ED  
 (01480) 434334

## THE LAB REPORT

Crystal's 20-bit CS4329 converter is maturing nicely in the context of seasoned players like the 506 from Meridian. Its response is just 0.2dB down at 20kHz, de-emphasis is spot-on and distortion remains exceptionally low at 0.008 per cent (re. -30dB). The jitter spectrum follows the pattern of the Myryad MCD 500 (see page 82), at almost exactly the same 200psec level in fact, but a good 10 per cent lower than any figure achieved in previous Meridian implementations. In another parallel with Myryad's player, Meridian's crystal clock selection is also well within the confines of Class One accuracy with a mere +10ppm error.

The 105.5dB S/N ratio is mildly compromised by some +6.5dB of noise modulation, bringing the 506 in some way below the dynamic range its 20-bit badge might suggest. And yet its low-level resolution is quite excellent with errors held to within +0.1/-0.4dB over a full 100dB. Beware of unmatched A/B demonstrations, however, as the 506 packs a 2.6V output from a low 460hm source impedance: so it'll drive long, esoteric interconnects but will sound +2.3dB 'louder' than 2V competition like the XTC CDP-1, for example. Otherwise all is in very good order indeed. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	70%
2	JITTER	75%
3	PRACTICAL DYNAMIC RANGE	35%
4	HARMONIC DISTORTION vs LEVEL	55%
5	LINEARITY	45%



# Copland CDA 266

Copland's CDA 266 is the third CD player to be released by this Danish company, and is also the least expensive to date. Regular readers will have seen it in last month's *Instant Systems*, and will know that in this instance, a lower asking price does not imply inferior visuals.

The CDA-266 has inherited the family virtues of classically retrained elegance. Fronting a large-footprint case, the fascia is the plain aluminium extrusion we have come to know from Copland, and housed within it is the marvellous — and unique — twist-and-push transport control to invoke play, pause and track-skip operations.

In the digital domain too it appears the CDA 266 is quite similar to its more upmarket siblings (the £1,800 CDA 277 and £2,199 CDA 288). Twin Burr-Brown PCM63P 20-bit converters, we're told, are conjoined with the Pacific Microsonics PMD 100 digital filter, as found also in the Arcam Alpha 8SE (p65) and Cymbol CDP12 (p81). As explained in the Arcam review, the PMD 100 will also get to grips with music encoded using the HDCD enhancement system. But as I have explained before, the filter is a good component in its own right, irrespective of HDCD performance.

In the CD player's analogue stage there's

a new complementary Class A circuit, Copland says, while the power supplies — though simplified by comparison with previous models — remain comparatively sophisticated and well endowed, apparently.

CD transport specification is one area where the CDA 266 differs from its team-mates. Instead of a Teac VRDS mechanism it offers a less expensive Sony loading drawer, in this instance mounted less conveniently above the display, which was uppermost on previous players. And in the display, readout characters are mounted in such a way that they are invisible unless you're looking pretty much straight at 'em.

Only an electrical digital output is fitted, and the user may switch it out of circuit when it's idle. (We kept it switched off for our tests.) The sparsely-populated front panel is in sharp contrast to the remote control, which offers full random track access, plus display dimming and switching.

## Sound quality

The panel deemed the Copland an interesting and successful player, which strips away more layers of musical fog than many other designs. "Integrated and musical," was one sum-up, from a listener who also noticed the Copland's ability to resolve the subtle tonal differences between various wind instruments in the Mozart test piece.

Another listener described the Copland as "...revealing. There were noises going on that I hadn't noticed before in the Mozart — keys shifting, scores being turned, and so on. In the piano I noticed a few off-key notes,



and with the Joni Mitchell, some husky background vocals I hadn't come across before." He also highlighted the substantial bass weight, and the way that music "breathed" naturally via the Copland.

I enjoyed my own hands-on exposure to this new Danish pastry. It seems livelier and better balanced than its colleagues, but shares their selling point of great staying power. At all times the CDA 266 remains listenable and detailed. And the latter singularly failed to impinge upon the former, even in extended use. All too often one must choose between one and the other.

## Conclusion

The CDA-266 is a first-rate player from a consistent and reliable manufacturer, and as the lowest-priced in the range it is worth every penny of its still ambitious price-tag.

One panellist commented that the CDA 266 had many qualities of the reference Krell player, albeit in diminished form. Although it cannot aspire to the latter's extraordinary timing and overall 'rightness', it is an excellent all-rounder that is simultaneously detailed and refined. Most importantly, it has the knack of sounding at home in almost any half competent system. *AG*

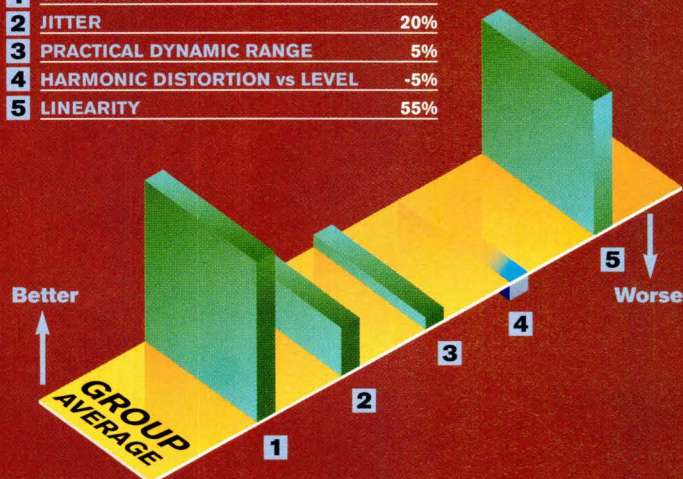
## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £1,199 (2 YEAR GUARANTEE; CD MECHANISM 1 YEAR GTEE)

Highly Recommendable player from one of the most musically-informed specialist European hi-fi houses. Copland's most consistently capable player to date.  
 Absolute Sounds, 58 Durham Road, London SW20 ODE  
 (0181) 947 5047

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	65%
2	JITTER	20%
3	PRACTICAL DYNAMIC RANGE	5%
4	HARMONIC DISTORTION vs LEVEL	-5%
5	LINEARITY	55%



## THE LAB REPORT

This is a well-executed combination of Sony's popular transport mechanism, Pacific Microsonics' PMD 100 eight-times oversampling filter, and Burr-Brown's PCM63P 20-bit DACs. Given the mixed reaction to Copland's costlier CDA 288 model (*HFC* 163), which was 'engineered' to produce specific 'analogue-like' distortions, it's good to see the CDA 266 enjoying a low 0.002 per cent midband THD at its peak output, increasing to just 0.013 per cent at -30dB.

Distortion does increase to an innocuous 0.02-0.04 per cent at higher frequencies, but it's the very high 2.7V output level which is likely to cause most confusion during unmatched A/B demonstrations. To ensure it has a 'fair' hearing against its peers, do make sure your dealer accurately matches the listening levels, particularly if HDCD software is used.

In-band noise reduces the anticipated 110-114dB S/N ratio to 106-107dB, though any noise modulation is also reduced. All these qualities, including the exceptionally low +0.3/-0.1dB errors in linearity and 17-bit+ resolution, combine to yield the very refined and neutral performance reported by the listening panel. A spectacularly low 197psec total jitter, excellent stereo separation, utterly flat response, and perfect de-emphasis decode accuracy, all accord with the panel's subjective impressions. *PM*



# Cymbol CDP-12

Having arisen, phoenix-like, from the ashes of specialist British hi-fi company Onix, Cymbol continues to showcase the designs of Tony Brady but with allegedly upgraded circuits and constructional arrangements.

The CDP-12 is physically a relative lightweight, at least by the overblown standards set by some models in the group, but this doesn't prevent it from claiming to incorporate a reasonably substantial 60VA transformer and multiple regulated power supplies for the D/A converter, the digital filter, the analogue circuits and the motor control plus servo.

The player case is a conventional steel wrap, with a black-gloss-painted front panel incorporating a customised display. The fascia is simple, good looking and bears the maker's name in red. A quintet of controls on the left-hand side offers load, stop, play, previous and next track keys, and a drawer open/close key. Finish is slightly rough by some standards, but everything works well, and nothing about the player appears fragile.

As with so many of today's specialist

designs, the transport mechanism is said to be the Philips CDM 12.1. The D/A converter, meanwhile, is the PCM69 18-bit hybrid unit from Burr-Brown, feeding 5534 op-amps in the output stage, according to Cymbol.

Headlines, however, will be reserved for the choice of digital filter, in this case the Pacific Microsonics PMD 100 HDCD chip. As you will read in the Arcam and Copland reviews elsewhere in this

test, satisfying the listeners equally on two presentations. The only significant complaints concerned the bass, which was described by one panellist thus: "You could play this one nice and loud and still have a gentle conversation. It has all the dynamic edge of a blancmange." On subsequent presentations, criticisms in this area were more muted.

Other panel members also noticed a slight softness in the bottom registers, but found nothing to condemn about midband or treble registers. During the Martin Taylor track our listeners wrote: "very quick, light and agile;" "nice and solid;" "plenty of presence, and just a suggestion of sibilance at the top end".

I was equally enthusiastic about this player: although it couldn't match the Krell for pace and timing, still it proved itself more than capable of jumping through

hoops in the midband. Its treble was equally agile and airy, with just the occasional sting in the tail to greet unsubtle recordings.

## Conclusion

Clearly this is a well-conceived and thoroughly developed player. It's an able showcase for the benefits of Pacific Microsonics' digital filter, and gave a good account of HDCD-encoded discs in after-hours listening. I can't help but feel that its price is a little steep, but I believe its consummate performance is good enough to warrant a formal Recommendation. *AG*



test, the presence of the PMD 100 confers compatibility with the few hundred HDCD recordings now available, but this piece of silicon has also garnered a reputation for impressive results with standard CD fare. However, on the evidence of the following injunction from the instruction manual, marrying HDCD firmware and Philips hardware has not been an entirely straightforward affair: "It is important that a Cymbol system remote is used with the CDP-12... other remote controls may change the volume level... not only degrading the audio performance but, more importantly, rendering the HDCD decoding imperative."

## Sound quality

The Cymbol performed extremely well on

### VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £1,299 (TWO YEAR GUARANTEE)

HDCD-equipped player from a new kid on the block: a well-conceived design with an airy, positive character. But bass lacks the focus so evident in the CDP-12's midband and treble.

Cymbol Electronics Ltd, 5 Kendal Court, Railway Road, Newhaven, Sussex BN9 0AY  
 (01273) 517358

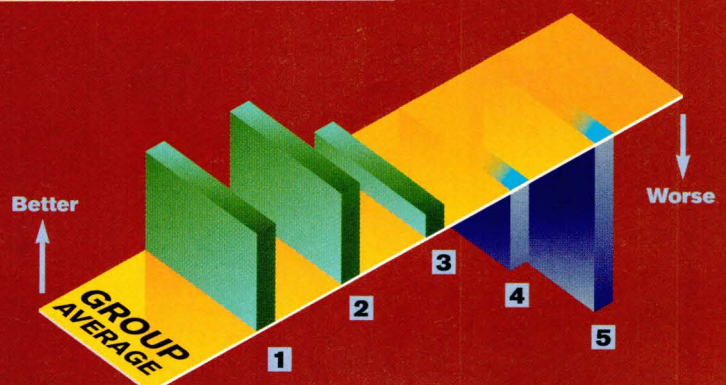
## THE LAB REPORT

No re-badged Philips clone, this. Sure enough, Philips' servo board and CDM12 transport handle the digital front-end, but Cymbol has equipped the CDP-12 with a separate transformer-coupled digital output; and, more importantly, a high quality proprietary DAC board. Here we find Pacific Microsonics' PMD 100 digital filter (which enables the CDP-12 to process HDCD-encoded discs), and unusually, one of Burr-Brown's hybrid PCM69AP converters. Digital images are well suppressed by Pacific Microsonics' filter but the hybrid DAC causes odd-order distortion harmonics to appear significantly higher than average at 0.025 per cent through mid to treble at -30dB.

This degree of 'character' is typical for the PCM69, though the compressive linearity trend with errors of -5.6dB at -90dB and -7.1dB at -100dB was not anticipated. Subjectively, this can have the effect of suppressing any low-level 'rubbish' — together, quite naturally, with any low-level detail. There's also a suggestion of cross-coupling via the power supply, leading to a loss of LF detailing, while the wide 109.6dB S/N ratio is at least partially offset by some +12.6dB of noise modulation. Otherwise, digital jitter is exceedingly low with just 119psec of data-induced patterns contributing to a 177psec total. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	40%
2	JITTER	37%
3	PRACTICAL DYNAMIC RANGE	10%
4	HARMONIC DISTORTION vs LEVEL	-30%
5	LINEARITY	-65%



# Myryad MCD 500

Only a price-tag reveals the difference between Myryad's second CD player and its first. The MCD 500 looks so much like the MC 100 that for a while I thought it was a replacement model. In fact, it is very much a senior design priced at a £600 premium. Regular readers will have seen it featured in David Vivian's column last month, on p138.

Myryad components always look special, and while I don't think the CD player is aesthetically equal to the integrated amplifier, it is a neat, tidy design, and has a touch of flair. I would draw strong parallels between Myryad and Audiolab in terms of looks.

The innards have received considerable attention from the designer's pen. Where the MC 100 uses a one-bit, eight-times oversampling DAC, the MCD 500 is said to employ Crystal Semiconductor's CS4329 '20-bit' DAC. There are two mains transformers, masses of reservoir capacity and, allegedly, no less than 13 individually regulated power supplies. Comparable levels of effort, Myryad says, have gone into the design of the master clock to minimise jitter; while the analogue circuits are claimed to be



DC coupled and manually trimmed to eliminate DC offset on the production line.

This player is nothing if not straightforward; there are few superfluous features. Most minor functions have been relegated to the remote control. Display dimming is included, and system control sockets are provided on the back-panel alongside the coaxial (electrical) digital output socket. (System control sockets allow users to operate the CD player in conjunction with one of Myryad's amplifiers via a single 'system' handset, for example.) There is no headphone socket.

### Sound quality

Results from the unsighted listening tests were rather variable. Although most of the panel was reasonably impressed, it was not overwhelmed in the context of the better £1,000-plus players.

On the whole, the MCD 500 reproduced music in an *interesting* manner. This player has considerable weight and substance, and gives the impression of capably delivering the leading edges of sounds — so important for the ear to generate a convincing musical illusion in the brain. Musical elements were well ordered in a palpable soundstage.

In this respect the MCD 500 made a good start, only let down by substandard stereo imagery — as one tester put it with

the Mozart recording: "reasonably big, but flat and mono-ish... the musicians are painted on the wallpaper." This particular performance is a consummate recording that was portrayed in incredibly three-dimensional fashion through some of the players tested this month; but with the Myryad it just appeared as a flat plane in front of the speakers. Other criticisms concerned a "buzzy" treble (Brendel) and a "comb-and-paper" effect with the Martin Taylor track.

Finally, an observation from my own listening notes: the Myryad's character is that of a distinguished elder statesman rather than a young-buck hotshot. (David Vivian came to much the same conclusions in his appraisal of the MCD 500. But he ended up rather valuing its laid-back nature over extended listening — Ed.) Choose partnering components with care to avoid over-emphasising the MCD 500's relaxed approach.

### Conclusion

Though well turned out, this player is up against stiff competition from some distinguished models at this elevated price level. It remains very nearly an excellent CD player, but needs some tweaking before realising the promise lurking below the surface. AG

### VERDICT

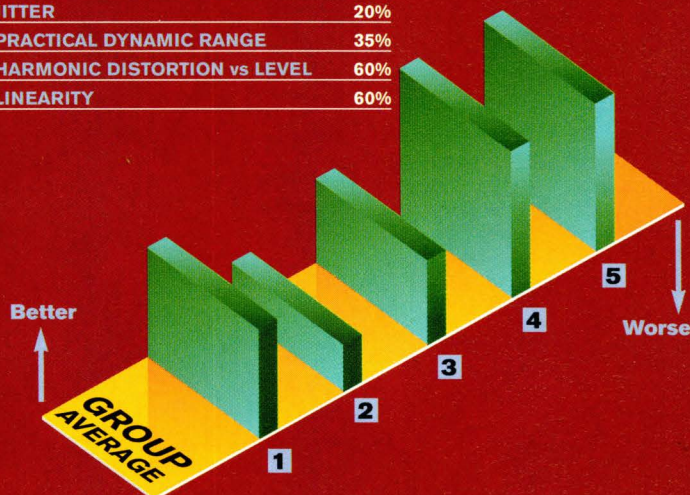
**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £1,300 (3 YEAR GUARANTEE)

Though ambitiously priced and specified, the MCD 500 proved slightly underwhelming on audition, thanks to inconsistent stereo behaviour, and some loss of midband and lack of treble subtlety, though the 'architectural' elements of music reproduction were handled well.

Myryad Systems Ltd, 2 Pipers Wood, Waterberry Drive, Waterlooville, Hants PO7 7SU  
 (01705) 265508

### HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	45%
2	JITTER	20%
3	PRACTICAL DYNAMIC RANGE	35%
4	HARMONIC DISTORTION vs LEVEL	60%
5	LINEARITY	60%



### THE LAB REPORT

In digital terms, Myryad's MCD 500 bears closer comparison to Meridian's 506 (p79) than its own MC100 reviewed in *HFC* 163. Both of the former designs are based around Crystal's so-called '20-bit' CS4329 bitstream converter. Though in practice the latter offers between 16 and 17 bit resolution, it does bring the promise of exceptionally low jitter, controlled levels of ultrasonic spurious, excellent linearity and very low levels of distortion.

This promise is realised to the full in Myryad's MCD 500, whose jitter spectrum shows just 121psec of data-induced sidebands bringing the weighted total to 198psec. Linearity holds true to within +0.0/-0.4dB over a 100dB dynamic range, while Myryad's clock suffers a mere +7ppm error! Distortion ranges from just 0.0009-0.002 per cent at its 2.3V peak output and increases, mainly through noise, to a mere 0.002-0.01 per cent across the audioband at -30dB, where much of the musical action takes place.

Nevertheless, the MCD 500 departs from Meridian's 506 by virtue of its proprietary six-pole analogue filter, a device derived from earlier NAD CD players and last witnessed in Myryad's MC 100. However, though the filter coefficients are modified to account for the CS4329 DAC, the filter's similarity with the older MC 100 may well explain the way Alvin's listening panel echoed their comments about the earlier player when responding to the new design. PM

# XTC CDP-1

**X**TC is an upmarket brand associated with the Orelle stable, and the CDP-1 is the second most expensive player in this group, priced at £1,250. It's classy looking and somewhat taller than most, with a large footprint, and weighs 8kg. The plain slab front panel has a well-applied black gloss finish adorned with a sign, which proclaims in a proud, flowing script, that this is none other than a 'Single Ended Class A Player'.

There is a multi-bit DAC, they say, and Philips' CDM12.1/CD6 mechanism/control set. The loading drawer is centrally mounted, and in the test sample it was rather noisy. I suspect this is the exception not the rule. The analogue output stages are said to comprise 'discrete' components, and to include multiple regulated supplies driven by a 100VA transformer. The Class A part is, allegedly, a capacitor-free single-ended circuit controlled by servo rather than feedback.

The centre-offset display includes a track-calendar readout, while a reasonably full set of controls includes support for track programming and random play, peak

search, a fader and a display-off key. I think it would have looked neater if the control labels had been spelt out with mnemonics rather than full-length labels.

The electrical digital output uses a BNC connector, which is shorted out when not in

and the bass line is ploddy," wrote one tester of the Joni Mitchell track. Another felt that the same tune was rather "matter of fact," and the Mozart wind piece was described as sounding like a performance in which the musicians just wanted to get home for tea.

A third tester described the player as exuding "lots of detail," but he didn't like the way it was presented, and felt that it "would give a listener headaches in the end".

I would venture that the sound improved as time went by, even though the player had been under power for at least three days prior to the panel listening tests. But the CDP-1 failed to

sound completely comfortable when combined with numerous speaker/amp permutations: musical rhythmic timing was suspect, transparency was lacking and the whole presentation was rather flat and dimensionless when the rest of the replay chain was open and transparent enough to reveal this.



use. The instruction manual appears to have started life as a Philips publication: it is over-printed in places, for example with a suggestion not to decrease below default maximum, the output signal level controlled in the digital domain. But this is generally considered good practice for maximum fidelity.

## Sound quality

An interesting combination of sonic characteristics make this an 'open window' design: very informative, very immediate and even a little bright. Detail, however, was not always presented in an easily digestible form, and the result was a player which started out giving a good impression, but whose charms faded for some panellists towards the end of the test presentation.

"What started off with plenty of weight and strong dynamics became rather edgy,

## Conclusion

Though offering a clear insight into music, this player does not parallel clarity with subtlety. The CDP-1 failed to give absolute satisfaction in portraying the euphonic elements of musical performance, and while a portrayal compromised in this manner was once par for the course, nowadays it is no longer necessary. AG

## VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £1,250 (ONE YEAR GUARANTEE)

Expensive and not entirely successful design, which could use a little warmth and grace to offset its currently rather abrasive manners.

Orelle Hi-Fi, Unit 12 IMEX House, 6 Wadsworth Road, Perivale, Middlesex UB6 7JJ  
 (0181) 810 9388

## THE LAB REPORT

There are clear parallels between XTC's CDP-1, the older CD-100E from sister company Orelle (see *HFC* 166) and also the new Exposure CD player, which is said to have benefited from some 'cross-fertilization' between design teams. As before, the player is based on a Philips-sourced motherboard with CDM12 transport, SAA7345 decoder and the TDA1545 'Continuous Calibration' DAC. XTC has stirred in its own beefy power supply, outboard clock and proprietary Class A analogue stage with a usefully low 59 Ohm source impedance and accurate 2.0V maximum output.

The bargraphs are perhaps a little too damning. Distortion, for example, is high by modern standards at 0.03-0.07 per cent at peak output, but at least the pattern remains consistent over the top 40dB or so of its dynamic range. This, incidentally, clocks in at just under 16-bit standard, with a 94.5dB S/N ratio and a low-level linearity good to within +0.0/-0.7dB down to -80dB.

Digital images released by the TDA1545 CC DAC also match those of Orelle's CD-100E, but this is a function of Philips' digital architecture and cannot be changed by XTC. Jitter, also, is really very acceptable at just 323psec — it simply looks 'below average' in the context of its illustrious competition. Then again, XTC has made no outrageous claims for technical one-upmanship. *PMI*

## HOW IT COMPARES

1	SUPPRESSION OF DIGITAL IMAGES	-70%
2	JITTER	-55%
3	PRACTICAL DYNAMIC RANGE	-45%
4	HARMONIC DISTORTION vs LEVEL	-10%
5	LINEARITY	-50%



# Conclusions

This group test threw up several interesting observations. The High Definition Compatible Digital (HDCD) decoder and digital filter, for example, has a catalogue of several hundred music titles encoded using the HDCD process, but is generally geared quite heavily towards the US music market, and only a few CD manufacturers and designers have incorporated the circuits necessary to decode HDCD discs.

There is a rumour that not every HDCD implementation is strictly kosher; in some machines, allegedly, a number of specific HDCD processes have not been hooked up.

Nonetheless, one of this month's two Best Buys carries the HDCD logo, and the time has come for a proper assessment of what HDCD systems can or can't do.

HDCD does run the risk of being too little and too late to make a really significant impression on the maturing CD market. That same market is already turning its thoughts to a future subsumed within the greater DVD Audio standard, whatever that might be. (See our feature on p32 of last month's issue; and *Update* this month.)

We were also intrigued to note that not one of this month's CD candidates offered the CD Text facility, in which track names,

lyrics and other information may be read from a music disc; and there was evidence for a renaissance in multi-bit digital-to-analogue converters (DACs), the mainstay of products in the early years of compact disc. Philips' one-bit Bitstream system and numerous facsimiles have become much more prevalent since their introduction in the late '80s, but multi-bit has remained popular with high-end brands and manufacturers such as Denon. It must be a sign of the times that Pioneer has thrown overboard its own processing silicon in favour of Burr-Brown multi-bit parts, in the new flagship model the PD-S06 (p67).

## GROUP A (UP TO £750)

Arcam Alpha 8SE	£600
Pioneer PD-S06	£550
Sony CDP-XA20ES	£450
Teac VRDS-9	£700

Four very different models illustrate the diversity of approaches open to digital designers even in this relatively mainstream-price area.

The **Teac VRDS-9** is a mid-sized unit with Swiss-watch standards of build and finish, tank-like solidity and a silicon heart of purest Philips. Sound quality was fair, but not of the standard now readily achievable at this price level. Although it was superficially clean and

sharp, the VRDS-9 lacked subtler virtues.

The **Sony CDP-XA20ES** is a bizarre mixture of audiophile sensibility and mainstream appeal. It attracted similar comments to the Teac VRDS-9 for its essential sonic performance, but there was also praise for its comparatively smooth, unprocessed quality.

The **Pioneer PD-S06** is the newest ultra-high-tech model featured this month, and it incorporates all of Pioneer's in-house technolo-

gies. It's a surprisingly gentle, refined performer, but a winning one in its way.

The **Arcam Alpha 8SE**... well, it looks just like an Arcam, though under the hood the times they are a-changin'. This is the first Arcam to embrace HDCD, and is one of the least expensive ways to explore this 'enhanced CD' system. This is an excellent machine that sets a new standard for Arcam. And full marks for customer service: existing Alpha owners can protect their investment with an upgrade kit.



Teac VRDS-9 p71

## GROUP B (£751-£1,100)

AVI S2000MC2	£899
Helios Model 2	£950
Marantz CD-17 KI Signature	£1,100
Meridian 506	£1,100

AVI's new 'budget' CD player, the **S2000MC2**, is a real chip off the old block, and looks indistinguishable from the original S2000MC Reference. It has the same ponderous old user interface, but a new, more attractive price — and regrettably new, less attractive sonics too. However, it sticks to family tradition by sounding dry, with plenty of presence, but a rather hard, caricatured quality on some material.

The other three models in this intermediate price group are more successful. The **Marantz CD-17 KI Signature** is smooth, warm and attractive. Even if a little lacking in dynamism, its tonal balance has proved popular with buyers, and deservedly so. They will not be disappointed by this new offering.

The **Meridian 506** is an established model, rejuvenated by a new Crystal DAC chip (also used in a more highly-optimised circuit, in the senior 508 product). This heart transplant has given

the 506 a more vivid and open-sounding mid/treble performance. It's an excellent general-purpose player, and will prove naturally attractive to Meridian active-system owners.

The final model in this group, the French-made **Helios Model 2**, is the real joker in the pack, with a vital but highly individualistic style of music making. It can sound bright and edgy at times, so demands a careful audition prior to purchase. You may hate it, but equally you may end up deciding that nothing else will do.



AVI S2000MC2 p79

## GROUP C (OVER £1,101)

Copland CDA-266	£1,199
Symbol CDP-12	£1,299
Myryad MCD 500	£1,300
XTC CDP-1	£1,250

XTC is the upmarket brand associated with Orelle, and its **CDP-1** player certainly looks the part. Regrettably our panel was not impressed by what appeared to be a vital, but ultimately rather fatiguing sound. However, it is by no means a bad player, and since it improved towards the end of its sojourn chez Gold, a long, long run-in

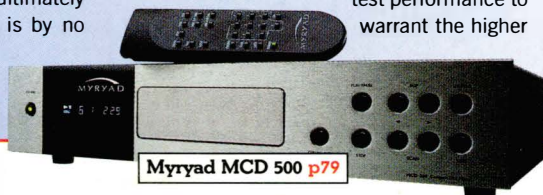
time is obviously mandatory. However, £1,250 is a hefty price to pay when competition at this level is so stiff.

Similar sentiments apply to the **Myryad MCD 500**, a model based on the MC 100 (HFC 163) but with the more upmarket Crystal Semiconductor DAC. Regrettably we did not discern sufficient evidence from its listening-test performance to warrant the higher

price, but don't write it off completely for sounding a little grey.

**Symbol** is a new brand from the company that succeeded Onix, and the **CDP-12** is a simple, but well-built machine incorporating an HDCD filter and decoder to good effect. It's a fine, easy-going player, which the panel deemed well-balanced and enjoyable.

The **Copland CDA-266**, another HDCD-equipped design, also went down well. In some ways it is the best balanced of the three Copland CD players — it is certainly the cheapest by a considerable margin.



Myryad MCD 500 p79

## BEST BUYS

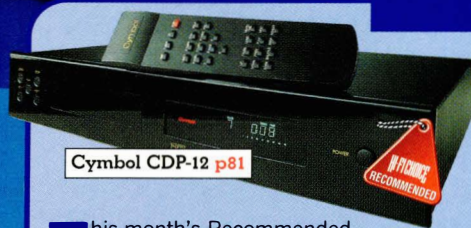
After careful consideration, we elevated two models to Best Buy status. One is the **Meridian 506**, an update of an old favourite. The 500-series CD players have existed for several years, but they look as contemporary now as they did when first unleashed in July 1993.

In the past there have been criticisms of a rather obscure control system as accessed via the front panel, but it's a different story with the new MSR system remote which is now included in the package. The new Crystal DAC transplant leaves the '506 sounding as fresh as a daisy.

The **Arcam Alpha 8SE** also earns the ultimate accolade, for offering excellent performance at a most affordable price. It embodies substantial changes from the existing Alpha designs, and these have paid musical dividends. Moreover, existing Alpha CD owners can upgrade their gear to the latest spec.



## RECOMMENDED



This month's Recommended list runs to five models, and an eclectic bunch they are, too.

The **Helios Model 2**, from a brand still new to these shores, is perhaps the most problematic, because of its stylised character that many will love or hate. Still, it delivers a compelling musical experience.

The **Cymbol CDP-12** bears an equally obscure brand, but has slightly more mainstream charms and surprised us pleasantly with its well-rounded performance on test.

Despite apparent difference in appear-

ance, technology and design philosophy, the **Pioneer PD-S06** and **Marantz CD-17 KI Signature** have more in common than one might think. Both are smooth, sophisticated charmers, not given to flashy breaks or unseemly surprises. Each in its own way is equally adept at side-stepping some of the less palatable qualities associated with digital audio.

This leaves the **Copland CDA-266**, Copland's third player to date. Of our five Recommendations this was the best all-rounder, and the one which imposes least character on the music.



## BEST OF THE REST

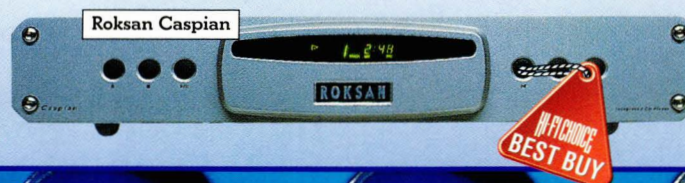
Within the price band of this month's test group, rich pickings exist when one considers the market as a whole. Prime samples hail from both well known and relatively obscure brands alike. In the latter category (for the UK at least), the **Meracus Tanto** (£1,395) offers real competition for the best of the tested models. So does the **AVI S2000MC Reference**, in a more clinical manner. (This is

an altogether more impressive design than the sibling reviewed this month.)

On the virtuous side of £1,000, the **Roksan Caspian** (£895) has been making waves since its introduction last year. And no survey of this scope would be com-

plete without the **Naim Audio CD3** (£1,000), whose influence has been crucial to the maturation of today's compact disc market.

Fine alternatives exist for the less costly models tested, including (in no particular order) the **Sony CDP-X3000ES**, a true bargain at £500; the svelte **Musical Fidelity A2** at the same price; and the **Pioneer PD-S505 Precision** at £460.



# 31 Branches Nationwide



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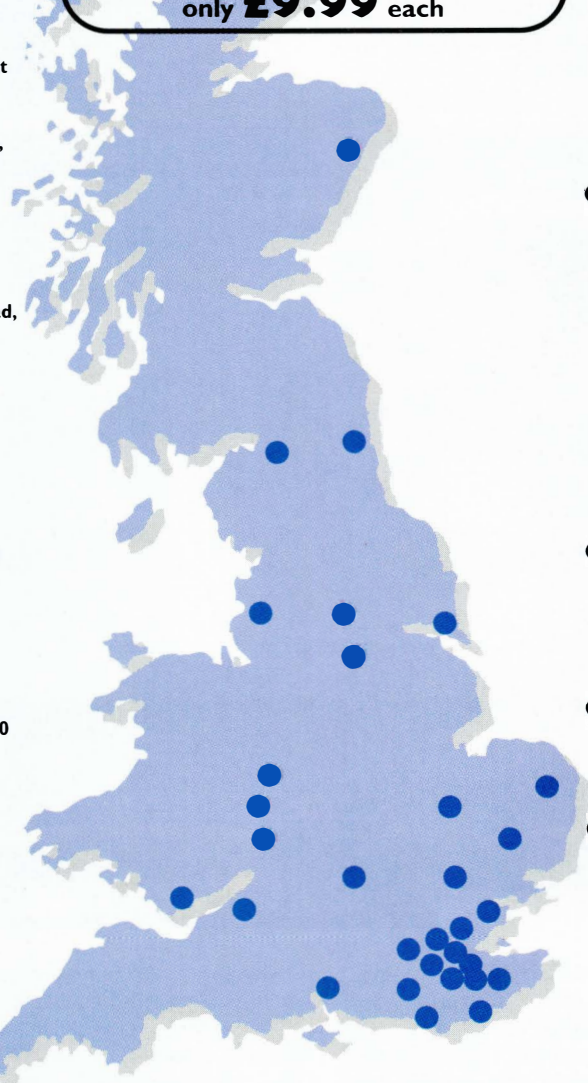
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**THE MAG**

### CONTENTS

MAY 1997 ISSUE 166

**REGULARS**

**Update**  
Election? Schmelection! We've been to Bristol and we got the news. All the latest from the show as well as locations further afield.

**Instant Systems**  
Alan Sircom gets to grips with a pair of £300 separates systems. The question is, can you get real hi-fi for the price of a telly?

**REVIEWS**

- [Acurus ACD11](#)
- [Aeon Acoustics Linear](#)
- [AMC 3025a](#)

\*Answers at the bottom of the page for those without web access.

### Have you ever wondered...

- 1 Which is the most expensive amplifier in the World?
- 2 How many drive units in the Mission 753 Freedom?
- 3 What is the name of Benz-Micro's most expensive cartridge?
- 4 What is the best CD player for £350 or under?

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1 The Audio Note Caku On, at a basic price of £159,500, is probably the most expensive commercially manufactured amplifier package in the world. And it's not a tower of Babel. 2 Five drive units in total, four 150mm pistlexed paper, long throw mid bass units, and a 27mm silk dome tweeter. 3 Benz-Micro's most expensive cartridge is the Ruby/Clear/Fa mounting coil, priced at £1,500 and available from Audiohubs in the UK. 4 One of the best value CD players priced below £350 is the Cambridge Audio CD4SE, which received an HfC Best Buy in issue 163. We'll assess the latest crop budget CDs in our December 1997 issue.



# Glossary

Baffled by hi-fi jargon? Confused by technical terms? Fear not: **Paul Messenger** has the answers to your lexicographical questing, in the Hi-Fi Choice glossary.

## A

**ACTIVE:** Loudspeaker systems that contain, or partner, dedicated electronics — power amplification plus electronic cross-overs and equalisers.

**AFC:** Automatic Frequency Control. A feature found in audio and TV/video tuners to ease station tuning and stability.

**ALC:** Automatic Level Control. Used in audio recorder circuitry to avoid unwanted overload, usually by sacrificing much of the available dynamic range.

**AM:** Amplitude Modulation. This is a broadcasting technique used for medium- and long-wave radio transmissions, and for television pictures.

**AMP:** 1) Ampère. A unit that measures the amount of electrical current flowing. 2) Diminutive of amplifier.

**AMPLITUDE:** Size or magnitude, hence loudness or level.

**ANALOGUE:** Signal-modelling technique using a directly analogous and continuously varying medium.

**ATRAC:** Psychoacoustics-based perceptual coding data reduction system used in MiniDisc.

**AV or A/V:** Audio Visual. Software programming in which audio and visual content are of similar importance.

**AUTO REVERSE:** Audio cassette tape transport, which changes direction at end of side.

**AZIMUTE:** Alignment of (audio cassette) tape-head gap with respect to tape path; inter-deck variations compromise high-frequency performance.

## B

**BALANCE:** 1) The relative loudness of the left and right channels of a stereo system. 2) The relative loudness of different parts of the audio spectrum (for example, bass and treble) with respect to each other.

**BANDWIDTH:** The range of frequencies with defined upper and lower limits over which a system operates.

**BASS:** The lower part of the audible frequency range.

**BIAS:** 1) Lateral force applied to tonearms to assist tracking.

2) Electromagnetic preconditioning of audio tape recording; some cassette decks provide adjustable bias to 'fine tune' tape and machine co-performance.

## C

**CASSETTE:** Convenient system of housing, protecting and using magnetic tape in a plastic case.

**CD:** see Compact Disc

**CD-R:** Rapidly growing recordable-CD system; discs record once only; particularly useful for personalised compilations.



Audiolab's 8000 series transport and DAC splits the CD player in two.

**CD-ROM:** High-capacity optical discs based on CDs but configured as flexible computer read-only software; many applications including some AV potential.

**CD-RW:** Imminent Philips re-writable CD recording format that's incompatible with some existing CD players.

**CLIPPING:** The consequences of over-driving an electrical circuit, resulting in waveform distortion and loss of control; especially common in power amplifiers.

**COAXIAL:** Made symmetrical about a common core — for example, shielded aerial cable or loudspeaker drive units.

**COLORATION:** A general term used to describe the audible effects of a whole range of different distortions in various hi-fi components, but especially record decks and loudspeakers.

**COMPACT CASSETTE:** World standard for consumer tape recording/playback. Originated in the '60s and still going strong(ish).

**COMPACT DISC (CD):** World standard for laser-read digital-stereo music discs.

**COMPATIBILITY:** From the basic ability of different items of equipment to work together, to the subtleties of their interaction and optimisation of same.

**CONVERTER:** DAC, digital-to-analogue

converter (see under D, below).

**CROSSOVER:** More precisely described as a dividing network, the electrical circuitry inside a loudspeaker that apportions the drive signal to the individual drive units.

## D

**DAC:** Digital-to-analogue converter. This is used to change digital-audio code to analogue, prior to amplification.

**DAT:** Digital Audio Tape. A digital cassette tape format that uses CD-type signals and is incompatible with compact cassettes. Used by the music business, but rare in the consumer marketplace.

**DCC:** Digital Compact Cassette. A medium launched in the early Nineties to little effect.

**DECIBEL (dB):** A logarithmic unit used to express relative loudness.

**DIGITAL:** Digital audio uses a variety of approaches to represent the essentially analogue music signal in digital code, for storage and/or transmission — for example, CD, DAT, NICAM stereo, MD, Dolby Digital.

**DIN:** German standards body, responsible for a popular range of standard plug/socket specifications used widely in Europe.

**DISTORTION:** Literally any deviation from the original, though often specified to partic-

ular mechanisms. Hence, non-linearities.

**DITHER:** Low-level noise added when digitally encoding a signal to randomise quantisation errors.

**DOLBY B:** Original domestic noise-reduction system for audio cassettes, now ubiquitous.

**DOLBY C:** More extreme but less popular extension of Dolby B.

**DOLBY DIGITAL (aka AC-3):** Multi-channel surround sound system for movie soundtracks. To date, software is only on imported Laserdiscs.

**DOLBY S:** Complex 'smart' noise-reduction system, which might help the compact cassette survive beyond the millennium.

**DOLBY BX:** Record-only system that increases high-frequency headroom, especially with cheaper Type-1 tapes.

**DOLBY PRO-LOGIC:** Technique that extracts additional centre-front (dialogue) and surround channels from stereo movie soundtracks, for home cinema reproduction. Used almost universally on movies.

**DRIVE UNIT/DRIVER:** The sources of acoustic output in a loudspeaker; includes woofers, tweeters and so on. (qv)

**DUB:** Copy — for example, on tape.

**DVD:** Digital Versatile Disc. A high-density optical disc format intended to squeeze complete movies onto compact-size discs, and introduce 96kHz sampling and 24-bit wordlength with multi-channel to audio discs. Still to make its mark on the European market.

**DYNAMIC RANGE:** The ratio (dBs) between the loudest and softest sounds a system or component can handle.

## E

**ELECTROSTATIC:** A principle employed in some exotic loudspeaker and headphone transducers.

## F

**FILTER:** An electrical circuit used to limit the bandwidth of a signal.

**FM:** Frequency Modulation. A widely used method of encoding signals for transmission or recording.

**FREQUENCY RANGE/SPECTRUM:** This can refer to any spread of frequencies, but most commonly the audio band of human hearing, from 20 cycles per second (20Hz) in the extreme bass to 20,000 cycles per second (20kHz) in the highest treble.

**FREQUENCY RESPONSE:** The variation in output across a specified range of different frequencies.

## G

**GAIN:** The amplification ratio of electrical signals.

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## H

**HARMONIC:** Harmonics are the whole number multiples of a base frequency called a fundamental.

**HARMONIC DISTORTION (THD):** The addition of unwanted harmonics to a signal.

**HF:** High frequency, such as treble.

**HI-FI STEREO:** Name specifically given to stereo FM soundtrack system used on upmarket domestic VCRs.

**Hz (HERTZ):** Unit of frequency of vibration, 1Hz equals one cycle per second.

## I

**IMPEDANCE:** Measure of the electrical resistance (and reactance) of a component's inputs and outputs.

**INTERMODULATION (IMD):** A form of distortion whereby a high and a low frequency interact to produce sum and difference signals that are not harmonically related to either.

## J

**JACK:** Connector standard used for headphones and microphones; Walkmen begat 3.5mm mini-jacks.

**JITTER:** Perturbations in the timing clock used to reconstitute an analogue signal from digital data.

## K

**kHz (KILOHERTZ):** 1,000Hz (vibrations per second). 1kHz actually corresponds to tone nearly two octaves above middle C.

## L

**LED:** Light-emitting diode, usually a red indicator bulb.

**LF:** Low frequency, such as bass.

**LINEAR:** A linear device that produces an output which exactly mirrors the input over the required operating range, and so is distortion free.

**LONG WAVE (LW):** Low-quality AM radio

band, loved by housewives, old dears and cricket fans.

**'LOUDNESS':** A switchable equalisation sometimes fitted to amplifiers, which boosts low and high frequencies. Intended for low-level listening but scorned by enthusiasts.

## M

**MD:** see Mini Disc.

**MINI DISC:** Sony-led compressed-digital audio record/replay format on tiny optical discs. Happening in Japan but not much UK activity yet.

**MEDIUM WAVE (MW):** Low-quality AM radio band loved by sports fans.

**MIDBAND, MIDRANGE:** The middle range of audio frequencies, where the ear is most sensitive.

**MODULATION:** In whatever medium, the variations or coding that describe the programme signal.

**MOL:** Maximum operating level, of audio tape, usually referred to five per cent mid-band distortion.

**MONITOR:** High-quality loudspeaker.

**MOVING COIL:** A transducer system, which changes mechanical energy into electrical energy or vice versa; used in high-quality pick-up cartridges and in conventional loudspeaker drive units.

**MOVING MAGNET:** Inverting the moving coil technique, a transducer system whereby a magnet (or induced magnet) moves within a (relatively) static coil. Widely used in low-cost pick-up cartridges.

**MULTIPLEX FILTER:** Device fitted to some cassette decks to avoid interference from stereo pilot tones when recording from stereo FM radio.

## N

**NICAM:** Acronym for digital-stereo-sound-with-TV system, currently widely available in UK terrestrial TV broadcasts.

**NOISE:** Random, unwanted low-level signals.

## O

**OCTAVE:** Span of frequency or pitch that represents a doubling or halving of frequency.

**OHM ( $\Omega$ ):** Unit of electrical impedance or resistance.

## P

**PHONO:** The most commonly used plug/socket system for audio signals; also abbreviation for record deck.

**PICK-UP (CARTRIDGE):** Device with cantilever and stylus at the end of a record-playing tone arm.

**PORT:** In reflex-loaded loudspeakers, the opening that is 'tuned' to the box size and main driver characteristics, to improve output at low frequencies.

**POWER AMPLIFIER:** The final stage of an amplifier, which provides the urge to drive the loudspeakers.

**PREAMPLIFIER:** The first part of an amplifier, which accepts, switches and routes the signals from and to other components, applying any equalisation and adjusting volume prior to feeding the power amplifier(s).

## R

**RF:** Radio Frequencies. Used for the transmission of radio signals. Sometimes cited as a cause of distortion within audio kit.

## S

**SENSITIVITY:** 1) In loudspeakers, the amount of output (loudness) for a given electrical input (usually one Watt).

2) The electrical signal input required by an amplifier or tape recorder to deliver full power output or recording level.

**SCART:** 21-pin Euroconnector standard widely used for audio/visual applications, especially the connection of television to peripheral devices (aka Peritel).

**SEPARATION:** The separateness of the left and right channels of a stereo audio system.

**SIGNAL-TO-NOISE RATIO OR S/N:** The difference between the maximum level of a signal and the background noise left when the signal is removed.

**STEREO:** Literally 'solid' — a system that uses two loudspeakers (or a pair of headphones) to create solid, spatial sonic images.

**STYLUS:** Carefully shaped piece of diamond that rides and extracts information from a vinyl record's groove.

**SUBSONIC:** Below the audible-frequency range — for instance, below 20Hz.

**SURROUND SOUND:** Systems that go beyond stereo in attempting to envelope the listener in sound from all around (see Dolby Pro-Logic/Digital AC-3).

## T

**TOEARM:** The part of a record player that holds the cartridge and allows it to trace the grooves in a record. Available in pivoted and parallel tracking varieties.

**TRANSDUCER:** A device which turns mechanical, magnetic or acoustic energy into electrical energy. For instance pick-ups (cartridges) and loudspeakers.

**TREBLE:** The upper part of the audible frequency range.

**TWEETER:** Small loudspeaker drive unit used for higher-frequency (treble) sounds.

**TYPE I:** Basic ferric audio cassette tape.

**TYPE II:** Premium chrome or superferric audio cassette tape.

**TYPE IV:** Upmarket metal-particle audio cassette tape.

## U

**ULTRASONIC:** Frequencies above the limit of human audibility — for instance, 20kHz.

**UNIT:** Loudspeaker drive unit.

## V

**VALVE:** Early thermionic electronic device, still highly regarded by many enthusiasts.

**VCR:** Video cassette recorder or video



Valve power: hi-fi kit that glows.

recorder; sometimes VTR (video tape recorder).

**VOICE COIL:** A wire wound around a circular former that's attached to the cone of a dynamic loudspeaker.

**VOLT:** Unit of electrical potential difference; a varying voltage is used to 'model' audio signals in transducers and electronic components.

## W

**WATT:** Unit of electrical power (the product of voltage and current).

**WEIGHTING:** Equalisation applied in measurement techniques to improve relevance.

**WOOFER:** Loudspeaker drive unit that handles lower-frequency (bass) sounds.

**WOW & FLUTTER:** Low- and high-frequency pitch variations due to poor mechanical performance in tape transports and turntables.



Mission's 753 uses more reflex ports than most to control the activities of its four mid/bass drive units.

# 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 magazines, 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*

The specialist Dealers listed here are professional and enthusiastic. Give your nearest a ring for a demonstration.

**STAR QUALITIES**

- value for money ★★★★★
- service ★★★★★
- facilities ★★★★★
- verdict ★★★★★

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<p><b>Southend-on-Sea</b>                      Rayleigh Hi-Fi                      132/4 London Road                      01702 435255</p>	<p><b>SCOTLAND Edinburgh</b>                      Russ Andrews Hi-Fi                      34 Northumberland Street                      0131 557 1672</p>
<p><b>Uxbridge</b>                      Uxbridge Audio                      278 High Street                      01895 465444</p>	<p><b>Glasgow</b>                      Stereo Stereo                      260 St. Vincent Street                      0141 248 4079</p>

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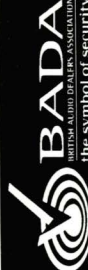
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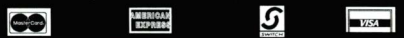
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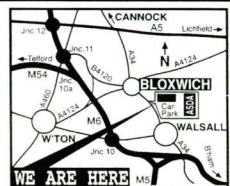


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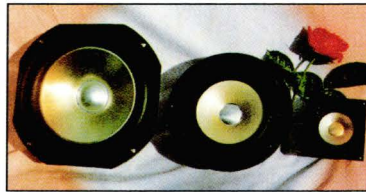
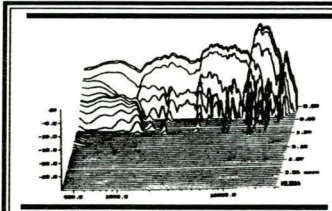
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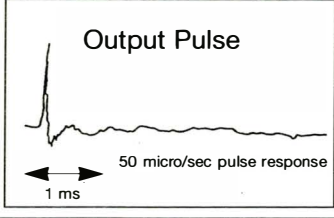
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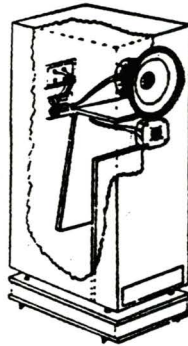
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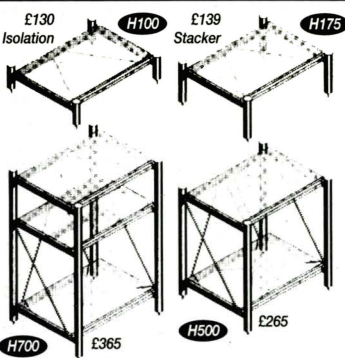
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● Mission 753 speakers, Rosewood, mint cond, boxed, £425. JBL MR Centre plus pair of JPW rear speakers, £100. (0181) 363 4963.

● Musical Fidelity T1 slim-line digital tuner. As new

condition. Fine performer, boxed with manual. £95. Cheshire (01477) 544084.

● Musical Fidelity X-A50 Monoblocks (pair of), £440 ono. Musical Fidelity X-DAC and X-PSU, £320 ono, mint condition. Devon (01803) 865406. May split.

● Pioneer 300R Precision amp, as new, £300. Pair of Spendor S100 speakers, easy to drive, sensible offers. Tel (01977) 620558.

● Quad CD67, pristine condition, little used, £695. Cambridge T55 tuner, £50. DAC in a box, £100. (01203) 679165.

● Quad 34/405-2, £295. Linn Nexus, inc stands, £275. Audio Innovations Alto, £175. NAD 505 five-disc player, £125. Tel (01926) 831388.

● Quad ESL63 loudspeakers, latest, £1,500. Quad CD 77 (mains), £650. Stax Lambda Signature Ear-speakers plus SRM-T1 (£1,544), £675. Telford (01952) 502097.

● Roksan Xerxes turntable,

Tabriz Z1 tonearm, Roksan Corus Black cartridge. £475. London (0171) 652 6299 (H).

● Ruark Talisman MkII speakers. Regency mahogany. One careful owner. Very good condition. £330. Suffolk (01284) 755915.

● Ruark Talisman MkII speakers. Rosewood and unthrashed. Great sound. £300. Near Watford (01923) 826592 (evenings).

● Sony amp, 50 Watts. CD, 761E. Tuner, ST5361. Speakers 176E. Cable Talk bi-wire. Monitor 2 interconnect. As new. Bargain at £600. Kidderminster (01562) 631787 (after 6pm).

● Sony Mini Discs only £3 each. (01772) 865864. Or a.haresnape1@uclan.ac.uk

● Spendor 20/40 speakers, 12 months old, cost £899, tall, slim with beautiful sound £450. Ariston Q-Deck £65. Chessington (0181) 287 9822.

● Spendor SP3/1 speakers with Epos stands, £550.

Target welded rack, three tiers, £90. Both little used. (01932) 345241.

● Sugden AU41C (mm) and Sugden AU41P pre-power amp, new £1,250, sell for £600 ono. Monarchy 'Dip' Jitter Buster with digital interconnect, £145. All boxed and mint condition. London (0181) 926 9704.

● Swap — Monitor Audio 700 PMCs (rosewood) as new, for Acoustic Energy AE1s, must be ex/mint condition. N Kent (01474) 834133.

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● Tannoy Profile 632 speakers, three years old, black, plus Profile stands, £120. Mission 75C, black, Sep 97, £175. Beds (01462) 813573.

● Teac P700/D700 Transport and DAC, mint cond, boxed with manuals, £790 DPA. Enlightenment DAC, mint cond, £550. (01952) 406759.

● Technics, AF, control, stereo, receiver, SA-EX 700, £390. Technics, stereo, cassette deck, RS-TR575, £250. Birmingham. Dave (0121) 430 7706.

● Thorens 160 turntable (upgrade modified), SME III tonearm, Audio Technica AT30E moving-coil cartridge, Quad 44/405 amps, Tannoy Mercury Mk1 loudspeakers, all in exc. cond with boxes etc. £550. Shrewsbury (01743) 874232.

● Wharfedale 7.1 Diamond loudspeakers, brand new, boxed, never used. £70. David, York, (01904) 642200 days/(01904) 692757 eves.

### WANTED

● DNM PA2 monoblocks. Must be in VGC. Good price paid. Mr Brown (0181) 461 3798 (anytime).

● Philips RH427 loudspeakers. One box if possible. St Helens (01744) 731525.

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# THE DIRECTORY

## 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.

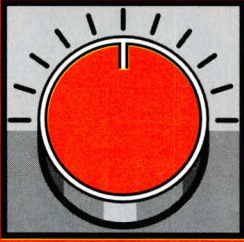
### Using Best Buys and Recommendations to buy hi-fi

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!



## DIRECTORY INDEX

ITEM	PAGE NUMBER
NEW PRODUCT PRICES	102
LIST OF REVIEWED PRODUCTS	114
INTEGRATED AMPLIFIERS	114
PREAMPLIFIERS	115
POWER AMPLIFIERS	115
CABLES	
ANALOGUE INTERCONNECTS	116
DIGITAL INTERCONNECTS	117
LOUDSPEAKER CABLES	117
CARTRIDGES	118
CASSETTE DECKS	119
CD PLAYERS	120
CD TRANSPORTS	121
DACS	122
DIGITAL RECORDERS	122
HEADPHONES	123
HI-FI LOUDSPEAKERS	124
SUBWOOFERS	126
STANDS & SUPPORTS	127
TONEARMS	128
TUNERS	128
TURNTABLES	129
FACTSBACK SERVICE	129
MANUFACTURER CONTACTS	130



**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	Ⓢ	20W	100
AMC 3025A	Ⓢ	30W	130
AMC 3050A	Ⓢ	45W	170
Cambridge A1 Mk III	Ⓢ	40W	120
Cambridge A3i	Ⓢ	60W	200
Denon PMA-250SE	Ⓢ	30W	160
Denon PMA-350SE	Ⓢ	50W	200
Denon PMA-425R	Ⓢ	45W	230
Denon PMA-100M	Ⓢ	80W	240
Goodmans Delta 801	Ⓢ	40W	140
H/K HK610	Ⓢ	30W	180
H/K HK620	Ⓢ	40W	250
JVC AX-V4BK	Ⓢ	30W	200
JVC AX-R5BK	Ⓢ	45W	200
Kenwood KA-1080	Ⓢ	60W	140
Kenwood KA-3080R	Ⓢ	70W	170
Kenwood KA-3020SE	Ⓢ	50W	200
Marantz PM-47	Ⓢ	40W	150
Marantz PM-57	Ⓢ	50W	200
Marantz PM-66SE	Ⓢ	50W	230
Marantz SR-47	Ⓢ	40W	250
Musical Fidelity E1	Ⓢ	30W	199
NAD 310	Ⓢ	20W	100
NAD 312	Ⓢ	25W	200
Pioneer A-105	Ⓢ	30W	130
Pioneer A-204R	Ⓢ	25W	160
Pioneer A-300R	Ⓢ	50W	200
Pioneer A-305R	Ⓢ	50W	200
Pioneer A-405R	Ⓢ	60W	250
Rega Brio	Ⓢ	30W	229
Rotal RA-931	Ⓢ	35W	150
Rotal RA970BX	Ⓢ	60W	250
Sherwood AX-7030R	Ⓢ	95W	250
Sony TA-FE210	Ⓢ	45W	130
Sony TA-FE310R	Ⓢ	45W	150
Sony TA-F248E	Ⓢ	40W	200
Sony TA-F448EB	Ⓢ	55W	250
TEAC A-R300	Ⓢ	45W	200
TEAC A-R500	Ⓢ	90W	250
Technics SU-V300	Ⓢ	25W	150
Technics SU-V500	Ⓢ	30W	180
Technics SU-A600 Mk3	Ⓢ	30W	200
Technics SU-V620	Ⓢ	70W	230
Technics SU-A700 Mk3	Ⓢ	45W	250
Yamaha AX-390	Ⓢ	60W	170
Yamaha AX-492	Ⓢ	85W	220

**£251 to £500**

Alchemist Maxim	Ⓢ	30W	319
AMC CVT 3030A	Ⓢ	30W	400
Arcam Alpha 7	Ⓢ	40W	260
Arcam Alpha 8	Ⓢ	50W	360
Arcam Alpha 9	Ⓢ	70W	500
Audio Analogue Puccini	Ⓢ	40W	450
AudiInnov Alto	Ⓢ	35W	300
Audiogram MB1	Ⓢ	35W	493
Audiolab 8000LX	Ⓢ	60W	470
Audiolab 8000A	Ⓢ	60W	500
Aura YA-100 II	Ⓢ	70W	350
CR Dev CR324	Ⓢ	100W	499
Creek 4330	Ⓢ	35W	279
Creek 4340	Ⓢ	35W	279
Creek 4330R	Ⓢ	35W	355
Creek 5250	Ⓢ	50W	450
Denon PMA-725R	Ⓢ	65W	350
EMF Audio Sequel	Ⓢ	50W	450
H/K HK640	Ⓢ	55W	400
Kenwood KA-5090R	Ⓢ	65W	300
Kenwood KA-7090R	Ⓢ	85W	400
Magnum IA120	Ⓢ	65W	265
Magnum IA170	Ⓢ	95W	330
Magnum IA170SE	Ⓢ	90W	430
Marantz PM-68	Ⓢ	90W	300
Marantz PM-66 XI Sig.	Ⓢ	50W	400
Micromega Minium	Ⓢ	40W	350
Mission Cyrus SL	Ⓢ	50W	398
Monrio Asty	Ⓢ	60W	440
Musical Fidelity E11	Ⓢ	60W	300

Musical Fidelity A2	Ⓢ	25W	500
NAD 314	Ⓢ	35W	260
NAD 317	Ⓢ	80W	470
Onkyo A9210	Ⓢ	40W	260
Onkyo A921	Ⓢ	50W	350
Onkyo A922	Ⓢ	70W	400
Orelle SA-100	Ⓢ	50W	499
Pioneer A-400X	Ⓢ	50W	300
Pioneer A-605R	Ⓢ	80W	400
Pioneer A-300R Precision	Ⓢ	35W	400
Pro-Ject Model 7	Ⓢ	40W	300
Rega Elex	Ⓢ	50W	398
Shearne 2.5	Ⓢ	35W	489
Sony TA-FA3ES	Ⓢ	70W	400
Sony TA-F3000ES	Ⓢ	60W	500
Talk Electronics Storm 1	Ⓢ	50W	500
TEAC A-H500	Ⓢ	50W	280
Technics SU-A800 Mk2	Ⓢ	55W	300
Technics SU-A900 Mk2	Ⓢ	90W	450
Technics SU-A900 Mk2	Ⓢ	70W	500
Yamaha AX-592	Ⓢ	100W	280

**£501 to £700**

Alchemist Kraken Integrated	Ⓢ	55W	579
Alchemist Nemesis	Ⓢ	80W	700
Audio Analogue Puccini SE	Ⓢ	50W	595
Audio Note Kanji Line SE	Ⓢ	9W	699
Audio Note First integrated	Ⓢ	40W	699
Audiogram MB2	Ⓢ	60W	599
Audiolab 8000S	Ⓢ	60W	700
CR Dev Kalypso	Ⓢ	15W	599
CR Dev CR325	Ⓢ	175W	699
Creek 5250R	Ⓢ	50W	575
Creek 5250SER	Ⓢ	60W	665
Densen Beat B-100	Ⓢ	60W	600
DPA Renaissance int.	Ⓢ	40W	595
Exposure XX Super	Ⓢ	55W	700
Fase Evoluzione Performance 2.0	Ⓢ	40W	570
Gamma Gemini	Ⓢ	12W	699
H/K HK660	Ⓢ	65W	700
Hi Q Sound MCI	Ⓢ	30W	565
JoLida 202	Ⓢ	40W	695
LFD Integrated 0	Ⓢ	50W	549
Linn Majik (Line)	Ⓢ	33W	650
Lynwood Opal	Ⓢ	80W	685
Magnum IA200	Ⓢ	100W	599
Magnum Class A	Ⓢ	85W	690
Mission Cyrus III	Ⓢ	50W	598
Musical Fidelity A220	Ⓢ	50W	700
Myrrad MI 120	Ⓢ	60W	530
Naim Nait 3	Ⓢ	30W	575
Orelle SA-100RX	Ⓢ	75W	649
Prime Design A-100	Ⓢ	100W	650
Quad 77 Integrated	Ⓢ	85W	700
Roksan Caspian	Ⓢ	70W	695
Rose Scion	Ⓢ	65W	615
Shearne Phase 2	Ⓢ	50W	649
Stemfoot 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 S2000M1	Ⓢ	100W	999
Copland CSA8	Ⓢ	60W	945
Credo IMP702	Ⓢ	70W	938
Credo IMP703	Ⓢ	70W	1,000
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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	Ⓢ	60W	800
Rega Elicit	Ⓢ	70W	730
Shearne Phase 2 Reference	Ⓢ	50W	799
Sonneteer Alabaster	Ⓢ	50W	900
Stemfoot SF100	Ⓢ	100W	849
TEAC AB-X10	Ⓢ	100W	1,000
Unison Simply Two	Ⓢ	12W	995

**£1001 to £2000**

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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 Note 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	Ⓢ	100W	1,299
Copland CTA401	Ⓢ	25W	1,699

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CR Dev Remus V3	Ⓢ	60W	1,989
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Graaf Venticinque	Ⓢ	20W	1,995
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Marantz PM-16	Ⓢ	90W	1,700
Meracur Intrare	Ⓢ	60W	1,095
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Monrio MC-205	Ⓢ	80W	1,545
Musical Fidelity A1000	Ⓢ	50W	1,500
Primare 301	Ⓢ	80W	1,800
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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
<b>Over £2000</b>			
Adyton 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
Electrocompaniet 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 Unisis 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**

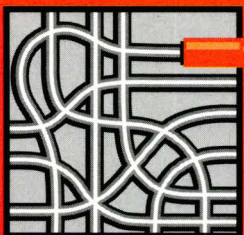
Ⓢ - (etc) number of line-level inputs.  
**Ph** - phono input fitted as standard (may be an option on some other models).

**Up to £500**

AMC CVT 1030A	Ⓢ	Ph	400
Art Audio Minuet	Ⓢ	Ph	499
Audio Analogue Bellini	Ⓢ	Ph	475
AudiInnov P1	Ⓢ	Ph	369
AudiInnov L1	Ⓢ	Ph	369
Audio Note The M	Ⓢ	Ph	350
Beam-Echo PP-21	Ⓢ	Ph	499
Bryston BP1	Ⓢ	Ph	438
Carver CT-24	Ⓢ	Ph	499
CR Dev Themis	Ⓢ	Ph	349
Creek P43	Ⓢ	Ph	399
Creek P52	Ⓢ	Ph	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	Ⓢ	Ph	200
Henley HMC100	Ⓢ	Ph	450
Hi Q Sound LCP2	Ⓢ	Ph	449
LFD Mistral Linestage	Ⓢ	Ph	499
LFD LSO Linestage	Ⓢ	Ph	499
Lumley PP70	Ⓢ	Ph	345
Moth 30 RIAA	Ⓢ	Ph	345
Moth 30 Active	Ⓢ	Ph	349
Musical Fidelity X10-D	Ⓢ	Ph	120
Musical Fidelity X-LP	Ⓢ	Ph	130
Musical Fidelity X-LP	Ⓢ	Ph	200
Musical Fidelity X20	Ⓢ	Ph	400
Musical Fidelity F2	Ⓢ	Ph	500
NAD 114	Ⓢ	Ph	270
NAD 116	Ⓢ	Ph	430
Naim Prefix	Ⓢ	Ph	350
Naim NAC92	Ⓢ	Ph	470
Rega EOS	Ⓢ	Ph	398
Roksan Artaxerxes 10	Ⓢ	Ph	395
Rose RV-23	Ⓢ	Ph	450
Rotal RC870BK MkII	Ⓢ	Ph	175
Talk Electronics Hurricane 1	Ⓢ	Ph	500
Technics SU-C1000 Mk2	Ⓢ	Ph	300
Trilogy 905	Ⓢ	Ph	375
Trilogy 904	Ⓢ	Ph	375
Trilogy 900	Ⓢ	Ph	499
Unison Simply Phono	Ⓢ	Ph	500
<b>£501 to £2000</b>			
Adyton Chorus	Ⓢ	Ph	1,995
Alchemist Kraken Pre	Ⓢ	Ph	519
Alchemist Forseti Pre	Ⓢ	Ph	919
Art Audio Headline	Ⓢ	Ph	700
Art Audio VPL	Ⓢ	Ph	741
Art Audio Conductor Phono	Ⓢ	Ph	750
Art Audio VP1	Ⓢ		

Conrad-Johnson PF-2	Ph	1,990	Unison Mystery One	Ph	1,750	NAD 912	30W	200	Naim NAP140	45W	750
Copland CSA303	Ph	1,199	Unison Phono One	Ph	1,995	NAD 214	80W	370	Naim NAP180	60W	1,060
Copland CTA301 MkII	Ph	1,399	Van Den Hul Pre-amp	Ph	1,700	NAD 216THX	125W	470	Naim NAP135	75W	1,655
CR Dev Carmenta	Ph	659	Wilson Benesch Stage One	Ph	995	Naim NAP90/3	30W	450	Naim NAP250	70W	1,655
CR Dev Argento	Ph	699	Woodside SC27 Line	Ph	949	Rotel RB970BX MkII	60W	225	Papworth TVA50	50W	1,425
Credo CMP004	Ph	1,246	Woodside SC26 Line	Ph	1,557	Rotel RB980BX	120W	450	Prime Design P-150	150W	650
Credo CMP005	Ph	1,876	XTC PRE-1	Ph	1,250	Shearpe 3.5	35W	469	Quad 77 Power	85W	600
Densen DM-20	Ph	1,200	Yamaha CX-2	Ph	650	Talk Electronics Tornado 1	50W	450	Quad 700	140W	800
DNM 3 Start	Ph	1,000	<b>Over £2000</b>	Ph	<b>2,495</b>	Technics SE-A1000 MK2	70W	350	Rega EKS	70W	598
DNM 3A Start	Ph	1,650	Adyton Temper	Ph	2,495	<b>£501 to £2000</b>			Rega Exon	125W	1,196
DPA Enlightenment pre	Ph	795	Adyton Modus	Ph	2,695	Alchemist Kraken pwr	60W	529	Roksan ROK-SL.5	70W	1,495
DPA DSP500S	Ph	2,000	Alchemist The Alchemist pre	Ph	4,995	Alchemist Forsetti Pwr	150W	1,309	Rose RP-190 (Dual Mode)	75W	550
Dynavector L200	Ph	1,195	ATC SCA2	Ph	2,499	AMC CVT 2100A	80W	600	Rotel RB990BX	200W	625
Dynavector P100	Ph	1,495	Audio Note M3Line	Ph	2,650	Art Audio Quintet	15W	1,393	Shearpe Phase 3	50W	619
Dynavector L100	Ph	1,995	Audio Research LS15	Ph	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	Ph	4,391	Art Audio Concerto	50W	1,669	Shearpe Phase 5 Mono	100W	1,500
ECA Vista S	Ph	760	Audio Research LS5 MKIII	Ph	6,435	Audio Analogue Donizetti	60W	575	Sonic Frontiers Anthem Amp 1	40W	1,195
ECA Vista HD	Ph	880	Audio Research REF 1	Ph	9,900	Audiolinn First Audio	7.5W	1,749	Sonographe SA250	125W	1,195
ECA Prisma	Ph	880	Boulder L3AE	Ph	2,100	Audiolinn Series 1000	50W	1,799	Sonographe SA400	220W	1,695
Electrocompaniet EC-4.5	Ph	1,195	Boulder L5AE	Ph	3,400	Audio Note The P	40W	550	Sumo Polaris III	164W	950
Electrocompaniet EC-4R	Ph	1,495	Boulder L5M	Ph	3,800	Audio Note P0	9W	599	Sumo Model Five	60W	1,975
Electrocompaniet EC-4.6	Ph	1,750	Boulder 2010	Ph	19,995	Audio Note P1	12W	750	Sumo Andromeda III	240W	1,975
Exposure XIX	Ph	800	Cary SLP-94L	Ph	2,095	Audio Note P1SE	12W	999	T+A A1200	110W	845
Exposure XVII	Ph	850	Cary SLP-2200	Ph	2,295	Audio Note P2	20W	1,000	T+A A1500	140W	1,495
Fase Evoluzione Controlsources 2.0	Ph	625	Chord CPA 2200	Ph	2,355	Audio Note P2SE	18W	1,000	Talk Electronics Tornado 2	65W	600
Fase Evoluzione Controlsources 1.0	Ph	1,395	Chord CPA 2800	Ph	3,246	Audio Note Conqueror	8W	1,599	Talk Electronics Tornado 3	100W	750
Golden Tube Audio SEP-1	Ph	990	Chord CPA 3200	Ph	3,320	Audiolab 8000SX	60W	550	Talk Electronics Tornado 4	110W	1,100
Graaf WFB Two	Ph	1,195	Chord CPA 4000	Ph	6,210	Audiolab 8000PX	100W	850	Technics SE-A2000	100W	1,100
Graaf WFB One	Ph	1,895	Conrad-Johnson PF-R	Ph	2,490	Audiolab 8000MX	125W	1,800	Thorens TTA-2000	30W	599
Henley HMC200	Ph	750	Conrad-Johnson PV-12A	Ph	2,590	Aura PA-100	100W	700	Trilogy 948	70W	1,895
Heybrook Signature II Pre	Ph	555	Conrad-Johnson Premier 15	Ph	3,995	Aura PA-200	110W	1,200	Tube Tech Syrius	45W	1,150
Hi Q Sound MCB2	Ph	545	Conrad-Johnson Premier 14	Ph	4,495	Aura PA-200 C	100W	1,250	Tube Tech Unisyn Sig. Pwr	30W	1,900
Hi Q Sound MCL2	Ph	645	Conrad-Johnson Art	Ph	14,995	AVI S2000MM	150W	1,399	Woodside SA240	40W	1,199
Jadis DPL2	Ph	1,790	CAT SL1 Sig. Mk2	Ph	6,500	Bryston 2B-LP	75W	750	Woodside MA100	100W	1,733
LFD MC1 Phonostage	Ph	949	CR Dev Kastor	Ph	2,995	Bryston 3B-ST PRO	150W	1,160	Woodside STA50	50W	1,880
LFD L51 Linestage	Ph	999	Credo LPR 001	Ph	2,815	Bryston 3B-ST	150W	1,160	XTC POW-2	150W	1,450
LFD MC2 Phonostage	Ph	1,499	DNM 3C Primus	Ph	2,550	Bryston THX3B	150W	1,262	<b>Over £2000</b>		
LFD LS2 Linestage	Ph	1,599	DNM 3C Twin	Ph	3,800	Bryston 7B-ST PRO	500W	1,545	Adyton Cordis 1.6	120W	3,495
LFD LSB Linestage	Ph	1,999	DNM 3C Six	Ph	5,050	Bryston 4B-ST PRO	-W	1,756	Adyton Cordis 3B	280W	12,995
Linn Wakonda	Ph	750	EAR 802MC	Ph	2,599	Bryston 4B-ST	300W	1,756	Alchemist The Alchemist pwr	220W	3,995
Linn Linto	Ph	850	EAR G88	Ph	9,999	Bryston 7B-ST	500W	1,815	Alchemist The Alchemist mono	55W	8,995
Linn Kairn	Ph	1,400	EAR P52	Ph	15,999	Bryston THX4B	300W	1,850	Art Audio Tempo	30W	2,499
Lumley LV1.5	Ph	895	Gamma Era Ref	Ph	7,999	Bryston THX7B	500W	1,886	Art Audio Quintet SE	-W	2,500
Lumley LV1	Ph	1,150	Gamma Era Sig	Ph	19,999	Carver TFM-15CB	100W	599	Art Audio Maestro	100W	3,524
Lumley PV1.5	Ph	1,700	Graaf GM13.5B	Ph	3,950	Carver A-500X	250W	949	ATC SPA2-150	200W	2,500
Lumley PV1	Ph	1,700	Jadis DP60L	Ph	2,800	Carver A-760X	380W	1,299	Audiolinn Ser 1000SE	50W	2,499
Marantz AC-500	Ph	700	Jadis DPL	Ph	3,190	Cary SLA-70 II	30W	1,495	Audiolinn Second Audio	15W	3,299
Marantz EC-500	Ph	900	Jadis DPMC	Ph	3,190	Chord SPM 400	100W	1,325	Audio Note P3	9W	2,150
Matisse Atom	Ph	1,000	Jadis JPL	Ph	4,720	Chord SPM 600	130W	1,720	Audio Note Quest	9W	2,750
Meracur Ingredi	Ph	925	Jadis JPP200	Ph	4,998	Conrad-Johnson MV-55	50W	1,995	Audio Note Yubi	18W	3,850
Meridian 501	Ph	695	Jadis JP30MC	Ph	5,978	Copland CTA501	30W	1,750	Audio Note Conquest	18W	4,450
Meridian 562	Ph	765	Jadis JPS2	Ph	7,900	CR Dev Amphion	12W	1,949	Audio Note Tomei	30W	8,500
Meridian 562V	Ph	995	Jadis JP80MC	Ph	11,989	Credo PMP 804	80W	599	Audio Note Neuro	7W	11,360
Meridian 502	Ph	1,295	Krell KRC3	Ph	3,250	Creek A52SE	100W	800	Audio Note Ankoru	60W	14,500
Michelli Argo	Ph	730	Krell KRC-HR	Ph	6,949	Crimson CS630C	100W	1,200	Audio Research D130	130W	2,299
Michi RHC-10	Ph	795	LFD Disc Preamp	Ph	4,499	Densen DM-30	100W	1,000	Audio Research VT60	35W	2,395
Michi RHC-10	Ph	1,150	Marantz Model 7	Ph	3,500	DNM PA Start	45W	1,000	Audio Research D300	300W	4,678
Michi RHA-10	Ph	1,150	Mark Levinson 25S	Ph	2,950	DNM PA1 Start	45W	1,650	Audio Research VT100	100W	4,995
Micromega Tempo P	Ph	1,250	Mark Levinson 380	Ph	3,995	DPA Enlightenment pwr	100W	995	Audio Research D400 MkII	400W	6,850
Mission Cyrus Pre	Ph	648	Mark Levinson 380S	Ph	6,495	Earmax Earmax Power	25W	1,895	Audio Research VT130 SE	130W	8,500
Monrio ADN	Ph	625	Matisse Fantasy	Ph	2,500	ECA Lectern S	50W	880	Audio Research VT150 SE	150W	17,000
Monrio Pluri-L	Ph	960	Matisse Reference	Ph	3,500	ECA Lectern HD	50W	1,480	Audio Synthesis Desire Decade	200W	2,495
Muse Model 3	Ph	1,990	Meracur Pretare	Ph	2,195	Electrocompaniet AW60B	60W	1,095	Beam-Echo DL7-35	30W	3,525
Musical Fidelity F25	Ph	1,500	Naim NAC82	Ph	2,160	Exposure XVIII Super	70W	850	Border Patrol 300B SE	10W	3,495
NAD 118	Ph	1,000	Naim NAC52	Ph	3,350	Fase Evoluzione Powersource 2.0	65W	860	Boulder 102AE	100W	2,800
Naim NAC92R	Ph	630	Roksan ROK-L1.5	Ph	2,250	Fase Evoluzione Powersource 1.0	100W	1,670	Boulder 102M	100W	3,100
Naim NAC72	Ph	725	Sonic Frontiers Line 2	Ph	2,995	Golden Tube Audio SE-40	40W	1,100	Boulder 500AE	100W	4,995
Naim NAC102	Ph	1,050	Sonic Frontiers Line 3	Ph	4,995	Golden Tube Audio SE-300B MkII	8W	1,490	Boulder 500M	150W	5,500
Quad 77Pre	Ph	850	T+A Pre DA3000	Ph	2,800	Golden Tube Audio SE-100	100W	1,995	Boulder 2060	600W	19,000
Rega Hal	Ph	998	Tesseract TAP-A	Ph	5,300	Graaf Venticinque P	25W	1,250	Boulder 2050	999W	35,000
Roksan ROK-L2.5	Ph	1,250	Trilogy 918	Ph	2,775	Heybrook Signature II Pwr	120W	1,045	Bryston THX8B	150W	2,385
Rose RV-23S	Ph	825	Unison Dream	Ph	11,995	Hi Q Sound MCM	70W	715	Cary CAD-572SE	20W	2,495
Shearpe Phase 6 Pre	Ph	599	Woodside SC26 Line & Phono	Ph	2,233	Jadis DA5	40W	1,997	Cary CAD-300SE	12W	3,795
Shearpe Phase 1 Pre Ref	Ph	1,399	<b>POWER AMPS</b>			Lexicon 212	120W	1,850	Cary CAD-805	50W	8,495
Sonic Frontiers Anthem Pre 1P	Ph	895	<b>KEY</b>			LFD PA1 Powerstage	60W	999	Chord SPM 800	160W	2,265
Sonic Frontiers Anthem Pre 1	Ph	1,495	<b>'20W' - output power per channel</b>			LFD PA2 Powerstage	75W	1,599	Chord SPM 1000B	200W	2,785
Sonic Frontiers Phono 1	Ph	1,995	<b>into nominal load of 8 Ohms.</b>			LFD PA2M Powerstage	90W	1,999	Chord SPM 1200B	250W	3,525
Sonic Frontiers Line 1	Ph	1,995	<b>Up to £500</b>			Linn LK100	50W	650	Chord SPM 1200C	315W	3,915
Sonographe SC26	Ph	995	AMC CVT 2030A	30W	400	Linn LK240	120W	750	Chord SPM 1600	200W	4,718
Sumo Athena II Line	Ph	767	Arcam Alpha 8P	50W	250	Linn AV5105	100W	1,200	Chord SPM 1400B mono	380W	7,830
Sumo Athena IIB/II LS	Ph	987	Arcam Alpha 9P	70W	400	Lynwood Ruby	120W	985	Chord SPM 5000	415W	13,544
Sumo Athena III	Ph	987	ArcamDelta 290P	75W	400	Magnum MF330	150W	685	Conrad-Johnson MF-2300A	250W	2,990
Sumo Artemis uP	Ph	1,595	Carver TFM-6CB	65W	399	Magnum AF660	125W	825	Conrad-Johnson Premier 11A	70W	3,500
T+A P1200R	Ph	890	Creek A43	50W	399	Magnum A500SE	200W	1,485	Conrad-Johnson Premier 12	140W	6,900
Talk Electronics Hurricane 2	Ph	650	Creek A52	70W	499	Meracur Ciere	60W	1,095	Conrad-Johnson Premier 8XS	150W	17,000
Talk Electronics Hurricane 3	Ph	900	Crimson CS620C	50W	450	Meridian 555	60W	750	Conrad-Johnson Premier 8A	200W	15,500
Talk Electronics Hurricane 4	Ph	1,550	Earmax Earmax Headphone	0.1W	375	Meridian 556	100W	895	CAT JLL	200W	2,099
Talk Electronics Hurricane 5	Ph	1,900	LFD Mistral Power	60W	449	Meridian 557	200W	1,400	Copland CTA505	67W	2,495
Technics SU-C2000	Ph	700	LFD PA0 Powerstage	50W	499	Meridian 505	160W	1,590	CR Dev Artemis	35W	4,995
Tesseract TAADA	Ph	1,500	Magnum MF120	85W	365	Michelli Alecto Stereo	50W	1,150	Credo LPO 804	20W	2,456
Tesseract TALA	Ph	1,500	Marantz MA-500	125W	250	Michelli Alecto Mono	100W	1,989	Credo PMP 155	75W	2,676
Tesseract TAHA	Ph	1,800	Marantz MA-700	200W	400	Michi RHB-05	100W	1,100	Credo LPO 455	49.75W	4,975
Thorens TTP-2000F	Ph	699	Marantz MA-500	200W	400	Michi RHB-10	200W	2,000	Credo LPO 155	100W	6,983
Trilogy 901	Ph	750	Mission Cyrus XPA	50W	298	Micromega Amp	100W	1,250	DNM PA3	50W	2,500
Trilogy 906	Ph	995	Mission Cyrus Power	50W	498	Monrio Cento	135W	1,495	DNM PA3S	23W	3,750
Trilogy 902	Ph	1,595	Moth 30 Series Power	30W	249	Monrio HP1	135W	1,750	DPA DAP500S	250W	3,000
Tron Retro	Ph	1,000	Moth 30 Mono/40	40W	469	Moth 60 Stereo	60W	599	Dynavector HX75	75W	2,195
Tron Nucleus Phono	Ph	2,000	Musical Fidelity X-CANS	0.1W	130	Muse Model 100	100W	1,490	Dynavector HLX.2	130W	3,995
Tron Nucleus	Ph	2,000	Musical Fidelity E30	100W	500	Musical Fidelity FX2	100W	800	EAR 861	32W	3,299
Tube Tech Seer Line	Ph	935	Musical Fidelity X-A50	50W	500	NAD 218THX	200W	850	EAR 509 Mk II	100W	3,699
Tube Tech Mac Phono	Ph	1,150	Myryad MA 120	60W	450				EAR 519	100W	4,699
Tube Tech Prophet	Ph	1,970									

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 XVI	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 TCC75	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 Qnect 2	30.00
QED Qnect 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	650.00
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 Musicchord 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 SC/II	98.00
Vampire Wire SC/IV	144.00
Vampire Wire AI/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 IIH8	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 IT 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 Lightning	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 Digitflex	20.00
QED Optiflex	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 DI/1	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.

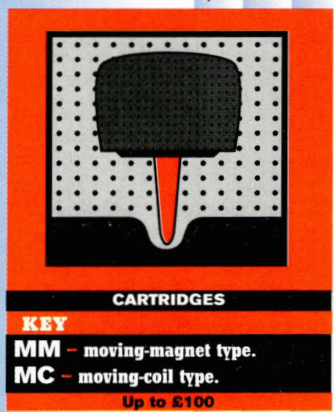
Price per mono metre unterminated.

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
Haim 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 PSOCC 7801	9.50
Puresonic PSOCC 7802	18.00
Puresonic PSOCC 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 SI130x2	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 Musicchord 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	32.00
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



Audio Note IO1	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 ZF3E+1	MM	48
Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado ZFL+	MM	83
Grado Prestige Red	MM	99
N'ham Tracer I	MM	98
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	80
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	55
Pickering XV15-625DJ	MM	60
Pickering XV15-1800S	MM	60
Pickering TL3S	MM	70
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 M70BX	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 680ALX	MM	56
Stanton 680ELX	MM	70
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MC	100
<b>Over £100</b>		
Audio Note IO2	MM	139
Audio Note Soara	MC	795
Audio Note IO1V	MC	1,095
Audio Note IO1Ltd	MC	4,500
Audio Technica AT-OC9	MC	330

Benz-Micro The Glider	700
Benz-Micro M090	700
Benz-Micro L040	700
Benz-Micro H200	700
Benz-Micro Reference	1,100
Benz-Micro Reference Ruby	1,500
Benz-Micro Ruby Open Air	1,600
Clearaudio Aurum-Alpha	135
Clearaudio Aurum-Beta	195
Clearaudio Aurum-Beta/S	265
Clearaudio Gamma-S	745
Clearaudio Signature	1,595
Clearaudio Accurate	2,500
Clearaudio Insider	4,900
Denon DL304	200
Dynavector 10X4II	189
Dynavector Z3RS	375
Dynavector 17D2	450
Dynavector IX-1L	998
Dynavector IX-1	998
Dynavector Te-Kaitora	1,698
Goldring Eroica LX	110
Goldring Eroica	110
Goldring 1042	120
Goldring Elite	220
Goldring Excel VX	495
Grado Prestige Silver	119
Grado Prestige Gold	149
Grado Signature Junior	150
Grado Signature 8M2	250
Grado Signature MCZ	375
Grado Signature TLZ	650
Grado Signature XTZ	975
Koetsu Red T	1,550
Koetsu Red K Sig	1,998
Koetsu Urushi	2,297
Koetsu Signature	3,218
Koetsu Gold PR	5,498
Linn K9	125
Linn Klyde	500
Linn Arkiv	1,000
London Decca Maroon	259
London Decca Gold	299
London Decca Maroon Dp	339
London Decca Gold Dp	379
London Decca S Gold	399
London Decca S Gold Dp	479
London Decca Jubilee	999
Lyra Lydian	649
Lyra Clavis Da Capo	995
N'ham Tracer II	310
N'ham Tracer III	410
N'ham Tracer IV	660
Ortofon MC3 Turbo	130
Ortofon MC15 Super II	130
Ortofon 540	130
Ortofon MC25E	180
Ortofon MC25FL	250
Ortofon MC10 Supreme	300
Ortofon SPU mono	350
Ortofon MC20 Supreme	425
Ortofon SPU Classic	450
Ortofon MC30 Supreme	525
Ortofon MC2000II	750
Ortofon MC Rohmann	1,000
Ortofon MC Rohmann	1,000
Ortofon MC3000 II	1,100
Ortofon MC5000	1,500
Ortofon MC7500	2,000
Pickering TL-3003	145
Pickering XLZ-4500	150
Pickering TL-4004	175
Pickering XSV-5000U	200
Pickering XLZ-7500	200
Pickering TLZ-7500-S	200
Reson Mica	185
Reson Reca	250
Reson Aciore	299
Reson Etile	455
Reson Lexe	1,300
Roksan Corus Black	130
Roksan Shiraz	970
Shure V15XMR	295
Stanton 890ALX	118
Sumiko BPS	250
Transfiguration Spirit	1,000
Transfiguration Temper	1,950
Van Den Hul MM-1	250
Van Den Hul MM-2	300
Van Den Hul DDT-II	600
Van Den Hul MC-10	750
Van Den Hul MC-One	900
Van Den Hul MC-One Super	1,050
Van Den Hul MC-Two	1,200
Van Den Hul The Frog Low o/p	1,500
Van Den Hul Grasshopper IIISLA	2,000
Van Den Hul Grasshopper IIISLNL	2,800
Van Den Hul Grasshopper IIISLGL	2,800
Van Den Hul Grasshopper IIICMM	2,800
Van Den Hul Grasshopper IIICHN	2,900
Van Den Hul Grasshopper IVGLA	3,000
Wilson Benesch Matrix	786

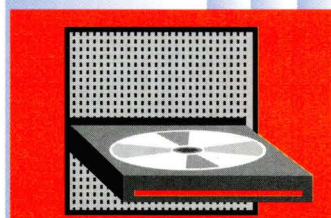
MC	650
MC	700
MC	700
MC	700
MC	1,100
MC	1,500
MC	1,600
MM	135
MM	195
MM	265
MC	745
MC	1,595
MC	2,500
MC	4,900
MC	200
MC	189
MC	375
MC	450
MC	998
MC	998
MC	1,698
MC	110
MC	110
MC	120
MC	220
MC	495
MM	119
MM	149
MM	150
MM	250
MM	375
MM	650
MM	975
MC	1,550
MC	1,998
MC	2,297
MC	3,218
MC	5,498
MM	125
MC	500
MC	1,000
MM	259
MM	299
MM	339
MM	379
MM	399
MM	479
MM	999
MC	649
MC	995
MM	310
MM	410
MM	660
MC	130
MC	130
MM	130
MC	180
MC	250
MC	300
MC	350
MC	425
MC	450
MC	525
MC	750
MC	1,000
MC	1,000
MC	1,100
MC	1,500
MC	2,000
MM	145
MM	150
MM	175
MM	200
MM	200
MM	200
MM	200
MM	185
MM	250
MC	299
MC	455
MC	1,300
MC	130
MC	970
MM	295
MM	118
MC	250
MC	1,000
MC	1,950
MC	250
MC	300
MC	600
MC	750
MC	900
MC	1,050
MC	1,200
MC	1,500
MC	2,000
MC	2,800
MC	2,800
MC	2,800
MC	2,900
MC	3,000
MC	786

Wilson Benesch Hybrid	MC	1,068
Wilson Benesch Carbon	MC	1,586
Wilson Benesch Analog	MC	1,850



Aiwa AD-F450	120	
Aiwa AD-WX727	170	
Denon DRM-550	160	
Denon DRM-580	200	
Denon DRS-640	200	
Denon DRS-540	200	
Goodmans Delta 801	130	
JVC TD-K372BK	170	
JVC TD-R472BK	200	
Kenwood KX-W4080	160	
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-WE400S	150	
Sony TC-KE400S	180	
Sony TC-WE50S	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	
<b>Over £200</b>		
Aiwa AD-F850	3-H	230
Aiwa AD-S950	3-H	300
Carver TDR-1550		629
Denon DRM-650S		230
Denon DRM-740	3-H	270
Denon DRS-810	3-H	310
H/K TD420		250
H/K TD450	3-H	350
JVC TD-V62BK	3-H	270
JVC TD-W18BK		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	3-H	460
Pioneer CT-S550S	3-H	250
Pioneer CT-W806DR		300
Pioneer CT-S550S Precision	3-H	340
Pioneer CT-S830S	3-H	500
Pioneer CT-95	3-H	1,000
Sony TC-WE805S		250
Sony TC-KA6ES	3-H	550
T+A CCL200R		990
TEAC W-850R		250
TEAC V-1030	3-H	250
TEAC W-6000R		450
TEAC V-6030S	3-H	550
TEAC V-8030S	3-H	650
Technics RS-AZ7	3-H	270
Technics RS-TR575		280

Yamaha KX-580SE 250  
 Yamaha KX-W592 280  
 Yamaha KX-690 400



**CD PLAYERS**

**KEY**

▶ multiplier: can be loaded with more than one disc.

Ⓜ electrical (coaxial) digital output.

Many players also include an optical (Toslink) output.

Up to £250

Aiwa XC-300	150
AMC CD9	120
AMC CB8A	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	60
Eclipse CD50	50
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
Pioneer PD-5505	280
Rotel RCD-930AX	180
Sherwood CD-4030R	110
Sony CDP-M205	120
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	250
TEAC PD-D2200	250
Technics SL-PG380A	130
Technics SL-PG480A	130
Technics SL-PG580A	130
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
<b>£251 to £500</b>	
Aiwa DX-C100M	500
Arcam Alpha 7	330

Arcam Alpha MCD	450
Audiolinn 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-2674BK	300
Kenwood DP-R7080	300
Kenwood DP-9090	300
Kenwood DP-7090	300
Marantz CD-67	400
Marantz CD-67SE	270
Marantz CC-870	350
Marantz CD-63IHK1	400
Musical Fidelity E60	500
Musical Fidelity A2	500
NAD 513	290
NAD 515	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

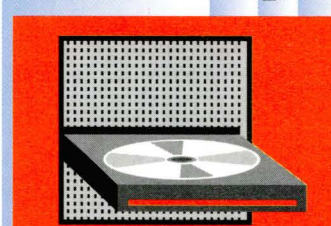
**£501 to £1000**

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 Privage	995
Myryad 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
AVI 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
Myryad MCD500	1,300
Naim CD2	2,000
Naim CDS	3,940
Pink Triangle Litaural	2,099
Primare 302	1,800
Roksan Atessa-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



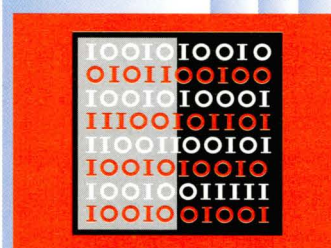
**CD TRANSPORTS**

**KEY**

Ⓜ electrical (coaxial) digital output.

Many players also include an optical (Toslink) output.

Arcam Delta 250	800
Audio Research CDT1	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 JD3	4,850
Jadis JD2	4,990
Jadis JDI	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 Bitmatch	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 Atessa-DP3	1,295
Sonic Frontiers SFT-1	2,295
Sonic Frontiers Transport 3	5,995
T+A CM1200R	990
TEAC VRDS-T1	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	600
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 Flagrante	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 HD CD	2,590
PS Audio Ref Link	4,550
Roksan Atessa-DAC2	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-T1	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	2,900
Theta Digital Gen V SE	4,390
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

Ⓜ - portable

Denon DMD-1300	500
Kenwood DM-7090	500
Onkyo MD 122	700
Pioneer PDR-04	700

SENNHEISER



THE ESSENTIAL ACCESSORY – SENNHEISER'S HD565

"Sound quality is exceptionally good... easily the best all-round model tested".

Alvin Gold, Hi-Fi Choice, September 1996.

Call (01494) 551551 for more information or your nearest stockist.

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 MDX300H	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-IA30ES	MD	699
TEAC MD-H500	MD	650
TEAC MD-10	MD	950

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



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 DT111	D	15
Beyer DT111	D	31
Beyer DT211	D	35
Beyer DT211TV	D	18
JVC HA-CD88	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

Over £41		
AKG K301	D	80
AKG K2221R	D	100
AKG K401	D	120
AKG K501	D	150
AKG K3331R	D	150
AKG K4441R	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 DT811	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
Jecklin Float Model 1	D	79
Jecklin Float Model 2	D	99
Jecklin 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-IF125RHK	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-0001	E	280
Stax SR-Lambda Nova C	E	370
Stax 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

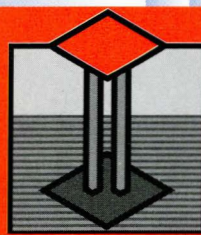
Atacama BD17		55
Atacama BD25		60
Atacama SE16		65
Atacama SE12		65
Atacama SX500		67
Atacama F2		70
Atacama F1		70
Atacama SX600		70
Atacama SL200		70
Atacama SE24	61	70
Atacama SE20		70
Atacama SX700		73
Atacama SL300		73
Atacama TP600		75
Atacama TP500		75
Atacama SE615		75
Atacama SE515		75
Atacama SE415		75
Atacama SL400		76
Atacama SE1000S		80
AVF Tower P6144BP		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	55	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	475
Sonus Faber Stonewood	497	497
Sound Org Z037	55	55
Sound Org Z027	55	55
Sound Org Z026	45	65
Sound Org Z518	42	100
Soundstyle X6118	45	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

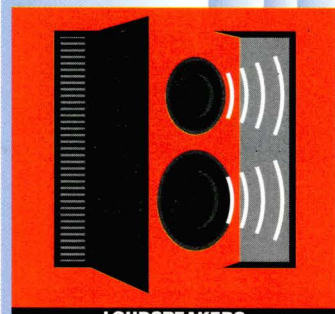
60 – height of stand in cm

Alphason NCI	60	47
Alphason Akros I	60	49
Alphason RS1	120	49
Alphason Akros II	60	59
Alphason NCIII	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 340	3	249	Soundstyle X305	3	210
Optimum OPT 490	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	Solid HCM2		130
Stands Unique Isolation Platform	1	52	Sony SS-86E		100
Stands Unique Sound Support	4	249	Tangent Monitor 3		60
Stands Unique Sound Tower	5	289	Tangent Monitor 5		80
Stands Unique Compact Sound Supp	4	315	Tangent Monitor 7		100
Stands Unique Sound Support 10	4	315	Tanmoy Mercury M1		120
Stands Unique Sound Twr Cabinet	5	369	TDL Nucleus 1		60
Stands Unique Ref Wall Support	1	550	TEAC LS-X8 Mk II		80
Stands Unique Ultimate Tower	10	689	Technics SB-CS55		80
Stands Unique Ref Floor Support	6	799	Technics SB-CS65		100
Target B5	5	175	Technics SB-CS75		100
Townshend Seismic Sink 1-CD		110	Visonik 5202		129
Townshend Seismic Sink 1-3D		400	W'dale Valdis 100		80
Townshend S/Sink Stand 1-4	4	999	W'dale Diamond 7.1		100
Townshend Seismic Sink 3-4	4	1,250	W'dale Valdis 200		110
Wilson Benesch Standard Shelf	1	130	W'dale Modus Micro		110
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			

£131 to £200



**LOUDSPEAKERS**

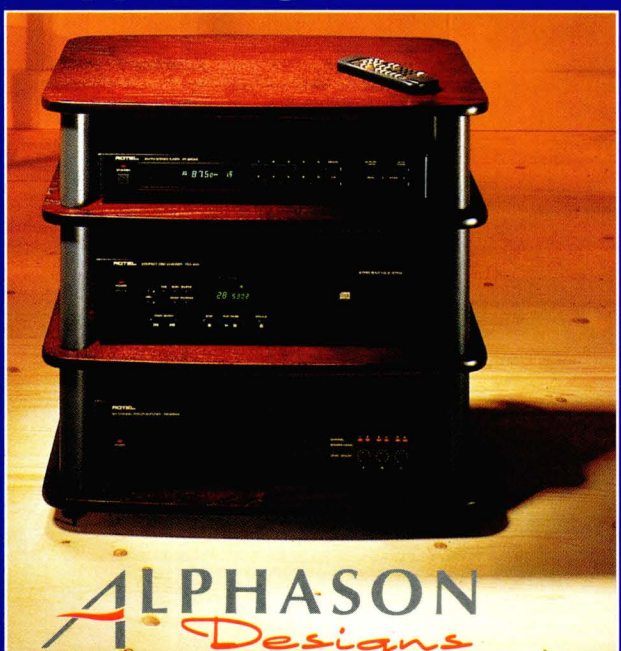
**KEY**

- ↓ 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

Acoustic Energy AE100		200	Allison Model 4A		170
B&W DM302		150	B&W CWM5		170
B&W DM601		199	B&W DM601		199
Bose 101		190	Bose 141		200
Bose CR6		149	Boston CR6		149
Boston CR6		149	Boston CR7		149
Boston Micro 80 Sat		169	Boston Runabout		169
Boston Runabout		169	Boston 335		179
Boston 351		189	Boston CR7		199
Boston CR7		199	Boston Runabout II		200
Celestion 15i		199	Cerwin-Vega CT-165		200
Denon SC-E313		160	Gale 21B		140
Gale 21B		140	Gale 4i		140
Gale 4i		140	Gale 3s		150
Gale 3s		150	Genexa GX650		140
Genexa GX650		140	GLL Imagio IC100		170
GLL Imagio IC100		170	Heybrook Prima		159
Heybrook Prima		159	Infinity SM65		150
Infinity SM65		150	Infinity Reference 1i		150
Infinity Reference 1i		150	Infinity Reference 11i		200
Interaudio XL2000		200	Jamo 38		150
Jamo 38		150	Jamo 525		150
Jamo 525		150	Jamo 560		170
Jamo 560		170	Jamo 660		170
Jamo 660		170	Jamo Cornet 65		170
Jamo Cornet 65		170	Jamo Studio 180		180
Jamo Studio 180		180	Jamo D165		200
Jamo D165		200	Jamo 68		200
Jamo 68		200	JBL TLX121		150
JBL TLX121		150	JPW MLS10		150
JPW MLS10		150	JPW ML610		170
JPW ML610		170	JPW SS551		200
JPW SS551		200	KEF Coda 8		189
KEF Coda 8		189	KEF Q15		199
KEF Q15		199	KEF Model 60S		199
KEF Model 60S		199	Kenwood LS-200G		200
Kenwood LS-200G		200	KLH Model 21		155
KLH Model 21		155	KLH Model 11		155
KLH Model 11		155	KLH Model 31		185
KLH Model 31		185	Mission 731i Pro		140
Mission 731i Pro		140	Mission 732i		200
Mission 732i		200	Mordaunt-Short MS10i		140
Mordaunt-Short MS10i		140	Mordaunt-Short VS-200		150
Mordaunt-Short VS-200		150	Mordaunt-Short MS20i Pearl		200
Mordaunt-Short MS20i Pearl		200	Mordaunt-Short VS-300		200
Mordaunt-Short VS-300		200	Mordaunt-Short MS20i		200
Mordaunt-Short MS20i		200	Pioneer CS-5030		170
Pioneer CS-5030		170	Polk M2		180
Polk M2		180	Polk RT3		200
Polk RT3		200	Polk AB610		200
Polk AB610		200	QLN Qubic111		200
QLN Qubic111		200	Rega Kyte		198
Rega Kyte		198	Revolver Colt		139
Revolver Colt		139	Revolver The 230		169
Revolver The 230		169	Revolver Purdey MkII		199
Revolver Purdey MkII		199	R Allen Minette 3		159
R Allen Minette 3		159	R Allen Dim'n 5/1 Compact		179
R Allen Dim'n 5/1 Compact		179	R Allen RA6		199
R Allen RA6		199	Rogers GS1		179
Rogers GS1		179	Royd ATX		155
Royd ATX		155	Sequence 200		199
Sequence 200		199	Solid Monitor		200
Solid Monitor		200	Sony SS-126EB		150
Sony SS-126EB		150	Sony SS-176E		200
Sony SS-176E		200	Tangent Monitor 9		150
Tangent Monitor 9		150	Tangent Monitor 11		180
Tangent Monitor 11		180	Tanmoy Mercury M2		140
Tanmoy Mercury M2		140	TDL RTL 1		190
TDL RTL 1		190	TDL NFM 1		200
TDL NFM 1		200	Technics SB-CS95		150
Technics SB-CS95		150	Technics SB-M20		200
Technics SB-M20		200	Visonik 6003		143
Visonik 6003		143	Visonik 5001		170
Visonik 5001		170	W'dale Diamond 7.2		140
W'dale Diamond 7.2		140	W'dale Valdis 300		150
W'dale Valdis 300		150	W'dale Modus Music Two		200
W'dale Modus Music Two		200	W'dale Valdis 400		200

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ZYP A1	199	Pioneer CS-7030	230	Castle Tay	350	Mission 734i	499		
<b>£201 to £300</b>									
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 AB505	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 CR8	239	Rega EL8	298	Dali Royal	500	Opera Duetto	395		
Boston 381	259	Revolver The 250	250	Def Tech Celsius	395	Origin Live OL-1AS	399		
Boston CR9	279	R Allen Dimension Five 1	239	Epos ES12	499	Origin Live Monarch	399		
Boston Voyager	299	R Allen RA8	249	Faraday SG	345	Pentachord A	469		
Castle Isis	250	R Allen RA8M	249	Faraday Siren	445	Pioneer S-LC2	450		
Celestion 23i	299	R Allen Dimension Five 2	269	GLL Imagio IC120	400	Polk AB705	330		
Cerwin-Vega VS-8	250	Rogers db101	250	GLL Imagio IC130	500	Polk RT8	400		
Cerwin-Vega CT-330	300	Rogers GS3	279	Heybrook Heylios	389	Polk RT10	500		
Chario Syntar 100	250	Royd The Envoy	249	Heybrook Heylo	439	Polk AB805	500		
Dali 102B	260	Royd Minstrel	275	Infinity SM105	350	Prof Monitor Co TB1S	366		
Dali 150	300	Ruark Epilogue	239	Infinity SM115	400	Prof Monitor Co TB1SM	403		
Faraday FS1	245	Sequence 300	249	Infinity SM125	500	Prof Monitor Co TB1	410		
Gale 5B	220	Solid HGM1	250	Jamo Classic 6	330	Prof Monitor Co TB1M	447		
GLL Imagio IC110	260	Sony SS-176EB	250	Jamo Cornet 75	330	Prof Monitor Co XB1	499		
GLL Imagio IC115	300	Tannoy Mercury M3	230	Jamo BX-100A	350	Promenade SP2	399		
Heybrook Optima	259	Tannoy Precision P10	300	Jamo 98	350	Promenade SP3	499		
Heybrook Heylette	269	TDL RTL 2	280	Jamo 407A	350	QLN Qubic 166	400		
Heybrook HB1	269	Visonik 7003	203	Jamo D365	400	Rega ELA MkII	498		
Infinity SM85	250	Visonik SUB5	259	Jamo Cornet 95	400	Revolver The 260	350		
Interaudio XL3000	230	W'dale Modus Music Four	230	Jamo Classic 8	400	R Allen Dimension Five 3	349		
Interaudio XL4000	295	W'dale MFM1	250	Jamo Graphic	400	R Allen Dimension Five 4	429		
Jamo 892	220	W'dale Valdus 500	300	Jamo 128	450	Rogers GS5	379		
Jamo Classic 4	250	Yamaha NS10M	300	Jamo BX-150A	450	Rogers GS6	429		
Jamo Art	270	ZYP A1T	219	Jamo Atmosphere	480	Rogers GS8	479		
Jamo Deco Art	280	ZYP A2S	275	Jamo 477A	500	Rogers C6/20	499		
Jamo D265	300	ZYP A2ST	295	JBL LX6	350	Royd The Squire	350		
Jamo 307A	300	<b>£301 to £500</b>							
JBL LX2	250	Acoustic Energy AE109	350	JBL TLX161	400	Royd Minstrel SE	399		
JBL TLX151	300	Acoustic Energy AE209	480	JBL PS8	500	Royd Doublet	485		
JPW ML710	230	Acoustic Energy AE120	500	JBL TLX171	500	Ruark Icon	359		
JPW ML810	260	Allison Model 2A	420	JM Lab Micron	395	Sequence 400	329		
JPW ML910	300	AudioInnov Alto	329	JM Lab Megane	495	Solid Verticale	400		
JVC SX-SW10	300	B&O Beovox CX50	325	Jordan Watts JHFLG	380	Spendor S2	399		
KEF Coda 9	299	B&O Beovox CX100	425	JPW SS553	400	Spendor 2020	399		
KEF Model 70S	299	B&W CWM8i	350	JPW ML1010	400	Spendor S1	499		
KLH 83A	205	B&W DM305	350	JPW Ruby 1	400	Tannoy Precision P20	400		
KLH 183A	265	B&W DS6	400	JPW Ruby 2	500	TDL RTL 3	400		
KLH Soundbytes System	276	B&W CDM2	400	KEF Q35	349	TDL RTL 3SE	450		
KLH Model 81	280	B&W DM603	500	KEF Q55	499	TDL Chiltern	450		
KLH Model 41	290	B&W Signature 7	500	KEF RDM One	499	Technics SB-M300	350		
M-A Monitor 1	250	Bandor Pictures	352	Keswick Aria II	379	Technics SB-M500	450		
M-A Monitor 2	300	Blue Room Mini Pod	400	KLH 283A	310	Totem Mite	495		
Mordaunt-Short MS30i	275	Bose 301	380	KLH 383A	335	Triangle Titus Tze	379		
Mordaunt-Short MS10i Classic	280	Bose 171	386	KLH Model 51	375	Visonik TB1S	366		
Mordaunt-Short MS25i	300	Bose A'mass AM3 II	500	KLH Model 71	420	W'dale Modus Music Six	330		
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Acoustic Energy AE1-II	795	Acoustic Precision Eikos FR1	800	Harbeth HL-P3ES	799	JBL L20	700
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Audio Note AN-K/D	620	B&O Beolab 2500	750	Heybrook Quartet	649	JBL TLX181	600
Audio Note AN-J/B	799	B&W CDM1	600	Infinity SM155	550	JBL SVA1500	700
B&O Beolab 2500	750	B&W P4	675	Jamo BX-200A	530		
B&W CDM1	600	Bose 501	700	Jamo Classic 10	600		
B&W P4	675	Bose SE-5 Ser II System	760	Jamo 587A	700		
Bose 501	700	Bose A'mass AM5 II	800				
Bose SE-5 Ser II System	760	Boston VR30	600				
Bose A'mass AM5 II	800	Boston Micro 90 Sys	669				
Boston VR30	600	Castle Severn 2	580				
Boston Micro 90 Sys	669	Castle Avon	730				
Castle Severn 2	580	Celestion 45i	599				
Castle Avon	730	Cerwin-Vega VS-12	550				
Celestion 45i	599	Cerwin-Vega VS-15	700				
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Dali 450	700	Def Tech BP6B	750				
Dali 109	800	Diapason Micra II	695				
Def Tech BP6B	750	Dynaudio Applause 50	577				
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<b>Jordan Watts JH400</b>	565	Spendor LS3/5A	630	Dynaudio Contour 1.1	879
JPW Ruby 3	800	Spendor SP3/1P	795	Dynaudio Contour 1.3	1,198
KEF LS3/5a	649	T+A TB 100	690	Electrocompaniet EC-Qube	1,195
KEF RDM Two	699	Tannoy Precision P30	600	Electrocompaniet EC-Qube SE	1,495
KEF Q65	799	Tannoy Definition D100	689	<b>Epos ES22</b>	1,185
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<b>M-A 703PMC</b>	800	Alon I Mk II	1,500	JM Lab Spectral 909.1	1,375
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<b>Prof Monitor Co LB1</b>	935				
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QLN Signature HDII	1,300				
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T+A TB 120	990				
<b>Tannoy Definition D300</b>	999				
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Linn Kabor Aktiv	2,640				
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Lumley L/M2 Mk3	2,995				
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Magneplanar MG-1.5 SE	1,780				
Magneplanar MG-2.7 SE	2,650				

Manticore Matisse	⌄	□	1,890	Audio Physic Avanti 2	⌄	□	6,699	M-A Studio 60	⌄	□	6,000	Jamo SW600e	Ⓐ	530
Martin-Logan Aeries I	⌄	□	2,299	Audio Physic Caldera	⌄	□	10,599	Naim DBL Active	⌄	□	7,414	JBL CM6	Ⓐ	200
Meridian M60	⌄	□	2,150	Audio Physic Medea	⌄	□	24,999	Neolith NEO 2	⌄	□	3,499	JBL PSW800	Ⓐ	275
M-A Studio 20SE	⌄	□	2,200	Avalon Avatar	⌄	□	4,495	Neolith NEO 3	⌄	□	4,999	JBL Sub 10	Ⓐ	300
Mordaunt-Short Perf 860	⌄	□	1,895	Avalon Arcus	⌄	□	6,000	NHT Model 3.3	⌄	□	3,500	JBL PSW1000	Ⓐ	325
Mordaunt-Short Perf 880	⌄	□	2,795	Avalon Eclipse	⌄	□	6,495	Paragon Regent	⌄	□	3,490	JBL PSW1200	Ⓐ	375
Naim SBL Active	⌄	□	1,830	Avalon Radian	⌄	□	10,995	Proac Response 3.5	⌄	□	4,250	JPW Subwoofer	Ⓐ	130
Naim SBL Passive	⌄	□	1,970	Avalon Osiris	⌄	□	72,000	Proac Response 5	⌄	Ⓐ	9,000	JPW SW40	Ⓐ	199
Neolith NEO 1	⌄	□	2,999	B&W Matrix 801s3	⌄	□	3,995	Proac Response 4	⌄	□	12,000	JPW SW60	Ⓐ	350
NHT VT-2	⌄	□	1,600	B&W Silver Signature	⌄	□	5,500	Prof Monitor Co MB1P	⌄	□	4,370	JPW SW-120	Ⓐ	500
Opera Caruso II	⌄	□	2,350	B&W Nautilus	⌄	□	35,000	Prof Monitor Co BBS A	⌄	□	16,688	KEF Model 20B	Ⓐ	349
Origin Live Conqueror	⌄	□	1,650	Bandor Bandoline	⌄	□	3,290	QLN Artec 1600	⌄	□	5,000	KEF Model 30B	Ⓐ	499
Paragon Jubilee	⌄	□	1,995	Bandor Bandora/Mora	⌄	□	3,290	Quad ESL63	⌄	□	3,450	KEF Model AV1	THX	2,499
Pentachord P-column	⌄	□	1,649	Boston Lynfield 500L	⌄	□	4,449	Rehdeko RK125	⌄	□	3,200	Kenwood SW500	Ⓐ	250
Polk LS90	⌄	□	1,700	Bravura Virtuoso Silver	⌄	□	3,195	Rehdeko RK145	⌄	□	4,800	Keswick Alto	Ⓐ	1,299
Posselt Albatross	⌄	□	2,500	Bravura Virtuoso Gold	⌄	□	3,395	Rehdeko RK175	⌄	□	8,800	KLH ASW10-100	Ⓐ	350
Proac Response 2S	⌄	□	2,000	Bravura Virtuoso Reference	⌄	□	3,995	Revel Gem	⌄	□	5,295	KLH ASW12-120	Ⓐ	380
Proac Studio 250	⌄	□	2,249	Bravura Accelerando	⌄	□	6,600	Rockport Syzygy	⌄	□	15,000	Linn AV5150	Ⓐ	2,850
Proac Response 2.5	⌄	□	2,700	Chario Academy 3 Junior	⌄	□	6,000	Rockport Procyon	⌄	□	32,500	L Voice RW24	Ⓐ	11,500
Prof Monitor Co IB1S	⌄	□	2,099	Chario Academy 3	⌄	□	9,000	Shahinian Hawk	⌄	□	4,995	Meridian M2500	Ⓐ	1,595
QLN Prestige	⌄	□	1,600	Credo SPB 012	⌄	□	3,147	Shahinian Diapason	⌄	□	8,895	M&K VX-7MKII	Ⓐ	450
QLN Sig. Splitfield	⌄	□	1,600	Credo SDL 001	⌄	□	5,677	Shun Mook Bella Voce	⌄	□	6,800	M&K V-75 MKII	Ⓐ	650
QLN Reference	⌄	□	2,000	Dall Grand	⌄	□	4,000	Sonus Faber Electa Amator	⌄	□	3,293	M&K V-125	Ⓐ	800
QLN Reference HDII	⌄	□	2,500	Def Tech BP2000	⌄	□	3,600	Sonus Faber Extrema	⌄	□	6,500	M&K V-125 (THX)	THX	800
Rehdeko RK115	⌄	□	1,700	Dynaudio Contour 2.8	⌄	□	3,198	Sound-Lab Dynastat	⌄	□	3,790	M&K MX-70	Ⓐ	900
Rogers LS5/9	⌄	□	1,549	Dynaudio Contour 3.3	⌄	□	4,815	Sound-Lab Aura	⌄	□	6,490	M&K MX-150 (THX)	THX	1,500
Ruark Crusader II	⌄	□	1,599	Dynaudio Confidence 3	⌄	□	4,846	Sound-Lab Pristine III+	⌄	□	7,990	M&K MX-200	Ⓐ	1,800
Ruark Equinox	⌄	□	1,849	Dynaudio Confidence 5	⌄	□	5,924	Sound-Lab A-3	⌄	□	11,990	M&K MX-300	THX	2,500
Ruark Accolade	⌄	□	2,699	Dynaudio Consequence	⌄	□	14,566	Sound-Lab Ultimate II	⌄	□	13,950	M&K MX-5000 (THX)	THX	2,900
SD Acoustics SD5	⌄	□	1,549	Electrofluidics Sonolith 2.2xi	⌄	□	5,999	Sound-Lab A-1	⌄	□	13,990	Mission 73AS	Ⓐ	450
SD Acoustics SD1E	⌄	□	2,995	ELS Res'ch Vista	⌄	□	3,900	Sound-Lab A-1	⌄	□	18,950	Mission 75AS	Ⓐ	548
Shahinian Arc	⌄	□	1,875	ELS Res'ch Illusion MkII	⌄	□	9,000	Sound-Lab Ultimate III	⌄	□	23,950	Mordaunt-Short T2000	Ⓐ	500
Shahinian Obelisk	⌄	□	2,695	Fase Evoluzione Aria	⌄	□	3,100	Sound-Lab Ultimate I	⌄	□	3,450	Mus Tec Sub	Ⓐ	650
Silverado Silverado 1	⌄	□	1,995	Genesis 400	⌄	□	4,000	Spendor SP9/1	⌄	□	3,450	Muse Model 22	Ⓐ	1,890
Sonus Faber Minima Amator	⌄	□	1,566	Genesis V	⌄	□	15,000	T+A AD4	⌄	□	3,940	Muse Model 18	Ⓐ	3,790
Sound-Lab Quantum	⌄	□	2,150	Genesis 300	⌄	□	27,500	T+A AD3	⌄	□	4,660	Neat Gravitas	Ⓐ	1,095
Spendor SP7/1	⌄	□	1,990	Genesis Agathon	⌄	□	3,555	Tannoy Edinburgh TW	⌄	□	3,250	NHT SW2PI	Ⓐ	609
Spendor SP100	⌄	□	2,099	Impulse Ta'us	⌄	□	3,100	Tannoy Definition D900	⌄	□	3,999	Polk PSW50	Ⓐ	350
T+A TB 140	⌄	□	1,680	Infinity Sigma	⌄	□	5,995	Tannoy GRF Memory TW	⌄	□	4,000	Polk PSW150	Ⓐ	500
Tannoy Definition D500	⌄	□	1,999	Infinity Epsilon	⌄	□	9,995	Tannoy Westminster TW	⌄	□	6,600	Polk PSW300	Ⓐ	750
Tannoy Stirling TW	⌄	□	2,200	Jamo Oriel	⌄	□	7,000	Tannoy Canterbury 15 TW	⌄	□	7,720	REL Q50	Ⓐ	375
Tannoy Definition D700	⌄	□	2,500	JBL S2600	⌄	□	3,500	Tannoy Westminster Royal	⌄	□	14,920	REL Q-100E	Ⓐ	495
TDL Studio Monitor-m	⌄	□	2,750	JBL S3100	⌄	□	4,000	TDL Ref Standard-m	⌄	□	6,000	REL Strata II	Ⓐ	575
Totem Mann-2	⌄	□	2,795	JM Lab Alcor	⌄	□	4,995	Triangle Nemo Altair	⌄	□	4,250	REL Storm	Ⓐ	695
Triangle Zays	⌄	□	1,750	JM Lab Utopia	⌄	□	16,000	Wilson Audio Cub	⌄	□	5,495	REL Stadium II	Ⓐ	995
Triangle Altinis	⌄	□	2,250	JM Lab Grande Utopia	⌄	□	33,000	Wilson Audio WATT 5	⌄	□	8,750	REL Stentor II	Ⓐ	1,800
Triangle Extan	⌄	□	2,950	Jordan Watts JH5K	⌄	□	3,950	Wilson Audio WITT	⌄	□	8,888	REL Studio II	Ⓐ	4,000
Wilson Benesch Stand-in	⌄	□	2,000	Jordan Watts JH10K	⌄	□	7,570	Wilson Benesch Actor	⌄	□	3,800	Revel Sub-15	Ⓐ	2,195
<b>Over £3000</b>				KEF Ref. Model Four	⌄	□	3,299	Wilson Benesch ACT1 spkr	⌄	□	6,400	Revel The Recoil	Ⓐ	100
Acoustic Energy AES	⌄	□	7,995	Keswick Zero 2	⌄	□	7,000	R Allen Gold Sub	Ⓐ	Ⓐ	Ⓐ	R Allen Dim'n Active	Ⓐ	149
Alon IV Mk II	⌄	□	3,495	Linn Keltik Aktiv	⌄	□	6,000	R Allen Dim'n Active	Ⓐ	Ⓐ	Ⓐ	R Allen Magnum Active	Ⓐ	699
Alon Lotus SE	⌄	□	3,495	L Voice Air Scout	⌄	□	19,500	Rogers AB1	Ⓐ	Ⓐ	Ⓐ	Rogers Sub-bass	Ⓐ	679
Alon V Mk III	⌄	□	4,995	L Voice Air Partner S	⌄	□	37,200	Roxsan Ojan 3S	Ⓐ	Ⓐ	Ⓐ	Roxsan Ojan 3S	Ⓐ	795
Alon Adriana	⌄	□	8,500	Lowther Delphic	⌄	□	3,099	Sequance FW120	Ⓐ	Ⓐ	Ⓐ	Sequance FW120	Ⓐ	249
Alon Circe	⌄	□	9,995	Lowther Opus One	⌄	□	4,999	Solid PB100	Ⓐ	Ⓐ	Ⓐ	Sony SA-W101	Ⓐ	350
Alon Phalanx	⌄	□	19,000	Lumley L/M 2 Sig. Mk3	⌄	□	4,500	Sony SA-W101	Ⓐ	Ⓐ	Ⓐ	Sunfire True Sub	Ⓐ	230
Ambience Mod 5.0	⌄	□	9,550	Magneplanar MG-3.5SE	⌄	□	3,800	Tannoy 625ALFie	Ⓐ	Ⓐ	Ⓐ	Tannoy 625ALFie	Ⓐ	1,450
Apertura Athena	⌄	□	4,395	Magneplanar MG-20 SE P	⌄	□	10,300	TDL Nucleus SBR	Ⓐ	Ⓐ	Ⓐ	TDL Nucleus SBR	Ⓐ	600
Apertura Atlante	⌄	□	6,995	Magneplanar MG-20 SE A	⌄	□	11,000	Triangle SATIII	Ⓐ	Ⓐ	Ⓐ	Triangle SATIII	Ⓐ	200
ATC SCM20A	⌄	□	3,049	Martin-Logan CLS	⌄	□	3,499	Velodyne VA-68XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-68XII	Ⓐ	650
ATC SCM50	⌄	□	3,750	Martin-Logan CLS IIz	⌄	□	4,555	Velodyne VA-68XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-68XII	Ⓐ	399
ATC SCM100	⌄	□	4,499	Martin-Logan Re-Quest	⌄	□	5,875	Velodyne VA-79XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-79XII	Ⓐ	499
ATC SCM50A	⌄	□	5,250	Martin-Logan Monolith S	⌄	□	7,440	Velodyne VA-810XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-810XII	Ⓐ	599
ATC SCM100A	⌄	□	5,999	Martin-Logan Monolith IIP	⌄	□	8,550	Velodyne VA-1012XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-1012XII	Ⓐ	700
ATC SCM200A	⌄	□	12,999	Martin-Logan Monolith IIIPB	⌄	□	11,900	Velodyne VA-1215XII	Ⓐ	Ⓐ	Ⓐ	Velodyne VA-1215XII	Ⓐ	999
ATC SCM300A	⌄	□	14,999	Meridian DSP5000	⌄	□	3,295	Velodyne FSR-12	Ⓐ	Ⓐ	Ⓐ	Velodyne FSR-12	Ⓐ	1,099
Audio Note AN-JSE Silver	⌄	□	7,900	Meridian DSP5500	⌄	□	5,950	Velodyne FSR-15	Ⓐ	Ⓐ	Ⓐ	Velodyne FSR-15	Ⓐ	1,299
Audio Note AN-ESE Silver	⌄	□	9,600	Meridian DSP6000	⌄	□	9,400	Velodyne F-1800II	Ⓐ	Ⓐ	Ⓐ	Velodyne F-1800II	Ⓐ	1,999
Audio Physic Virgo 2	⌄	□	3,399	M-A Studio 50	⌄	□	4,000	W'dale Modus Sub Bass	Ⓐ	Ⓐ	Ⓐ	W'dale Modus Sub Bass	Ⓐ	180



Take it to 11, Captain! The Jeff Rowland Concentra amp on idle.

**KEY**  
 Ⓐ - active; includes a dedicated power amplifier.  
 THX - THX approved by LucasFilm for use in Home THX installations.

Acoustic Energy AE108S	Ⓐ	300	Air Tangent IC	#	3,333
Aiwa TS-W9	Ⓐ	170	Air Tangent 10B	#	7,777
Allison Mini Ref Sub	Ⓐ	210	Air Tangent Ref. Sig.	#	11,000
Alon Poseidon	Ⓐ	12,000	Audio Note AN-ARM 1	Ⓐ	169
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	Ⓐ	800			
Celestion CS135	THX	139			
Celestion CSW MkII	Ⓐ	329			
Celestion S1i	Ⓐ	349			
Corwin-Vega HT-10D	Ⓐ	200			
Corwin-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.

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	750
Kuzma Stogi Ref	1,250
Linn Akito	500
Linn Ekos	1,500
Manticore Musician II	595
Manticore Magician II	895
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.

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	P30	RDS 250
NAD 710	P24	270
NAD 712	P24	390
Naim NAT03	595	
Naim NAT02	1,080	
Naim NAT01	1,730	
Onkyo T 4210RDS	P30	RDS 180
Onkyo T 409	P30	230
Onkyo T 411RDS	P30	RDS 260
Pioneer F-204RDS	P30	RDS 140
Pioneer F-504RDS	P40	RDS 250
Pioneer F-504RDS Precision	P40	RDS 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	RDS 120
Sony ST-SE500	P30	RDS 140
Sony ST-SE700	P30	RDS 180
Sony ST-SA3ES	P30	RDS 250
T+A T1200R	P30	RDS 745
TEAC T-R400	P20	120
TEAC T-H500	P30	RDS 170
TEAC TB-X10	P20	RDS 400
Technics ST-GT350L	P30	RDS 130
Technics ST-GT550L	P39	RDS 180
Technics ST-GT650L	P39	RDS 230
Thorens TRT-2000	P59	RDS 499
Yamaha TX-480L	P40	100
Yamaha TX-492RDS	P40	RDS 130
Yamaha TX-590RDS	P40	RDS 180

Michell Mycro	435
Moth Alamo	199
Moth Kanoot MkI 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
Sherwood PM8550	130
Sony PS-LX150H	90
Sony PS-LX300H	150
Systemdek I/920	136
Systemdek IIX/900	230
Systemdek IIX/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 IV/UK	210
Thorens TD-166 VI/UK/RB	400
Thorens TD-318 III TP50	500

Pink Triangle Tarantella	575
Pro-Ject 6/Sumiko	850
Rega Planar 9	1,598
Reson RS1M	600
Reson Rota 1	3,900
Rockport Capella II	7,000
Rockport Sirius III	50,000
Roksan TMS	2,750
SME Model 20/2	3,403
SME Model 20/2A	4,863
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

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	RDS 150
Denon TU-425RD	P40	RDS 200
H/K TU930	P30	150
H/K TU950	P30	RDS 200
Kenwood KT-2080	P30	RDS 130
Kenwood KT-3080	P20	RDS 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	RDS 150
Marantz ST-65	P59	RDS 200
Marantz ST-17	P60	RDS 600
Meridian 504	P30	695

**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
Genexxa Lab-710	60
Genexxa Lab-810	70
Kenwood KD-492F	100

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 Anniv	3,800

**Remember that all entries printed in RED refer to hi-fi products that we have reviewed. Turn to page 114 for a full summary of test results!**







## CHOOSING A HI-FI IS EASY ISN'T IT?

IF YOU THINK BUYING GOOD HI-FI IS SIMPLY A MATTER OF PICKING 'FIVE STAR' PRODUCTS FROM MAGAZINES, THEN THINK AGAIN. AT BEST, REVIEWS CAN ONLY EVER OFFER A ROUGH SKETCH OF THE MARKETPLACE - FOR THE FULL PICTURE IT PAYS TO VISIT A SPECIALIST DEALER. WITH 15 YEARS EXPERIENCE UNDER OUR BELTS, WE KNOW THAT EACH CUSTOMER HAS A

UNIQUE SET OF REQUIREMENTS - THERE IS SIMPLY NO SUCH THING AS A BLANKET "BEST BUY" SYSTEM. IT TAKES TIME AND SKILL TO PUT TOGETHER A HI-FI WHICH WILL THRILL YOU FOR YEARS - BUT THAT'S OUR SPECIALITY!

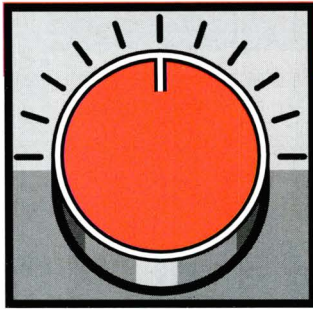
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# Amplifiers Brought to you in association with

**audio research**  
HIGH DEFINITION

**T**he 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

**LINE INPUTS:** Amount of input sockets for non-vinyl sources such as CD players, tuners and cassette decks.  
**MM PHONO INPUT:** If an amp has a vinyl phono input for moving magnet (normal output) cartridges.

**MC PHONO INPUT:** If an amp has a vinyl phono input for moving coil (low output) cartridges.  
**REMOTE CONTROL:** If an amp is couch potato ready.  
**HEADPHONE SOCKET:** If an amp is can friendly.

**POWER OUTPUT (W):** Lab tested power output in Watts per channel.  
**RECEIVER:** If an amp has a built in radio tuner.  
**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.

## 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			138
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	148
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	160
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	6 9	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





SYMMETRICAL  
COAXIAL  
STRANDED  
SOLID CORE  
COPPER  
SILVER

FACTSBACK  
DID CABLE TYPE

ISSUE NUMBER

# CABLES (CONTINUED)

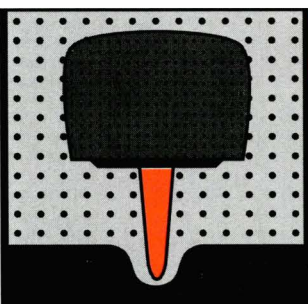
Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK DID CABLE TYPE	ISSUE NUMBER
Audio Note AN-V	179	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable	●					●	E	1687 131
Audioquest Turquoise	40	A 'fit and forget' cable 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
<b>Digital Interconnects</b>										
▲ 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 Optlink Z	179	Good level of midband detail but frequency extremes lack depth and extension							E	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
<b>Loudspeaker Cables</b>										
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	COAXIAL	STRANDED	SOLID CORE	COPPER	FACTSBACK NUMBER	ISSUE NUMBER
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
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](http://WWW.HIFICHOICE.CO.UK)**

# HI-FI CHOICE



## Cartridges

**C**artridges 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	REPLACEABLE STYLUS	OUTPUT (MV)	MASS (g)	FACTSBACK NUMBER	ISSUE NUMBER
MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.	sensitivity vinyl disc amplifier inputs.	Cartridge output in millivolts.	Cartridge mass can affect arm choice.	The Factsback reference for ordering a fax	copy of the review.
MC: Moving coil cartridge with a low output only suitable for high-	REPLACEABLE STYLUS: Most MM cartridges have a stylus that can be removed and replaced.				ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.

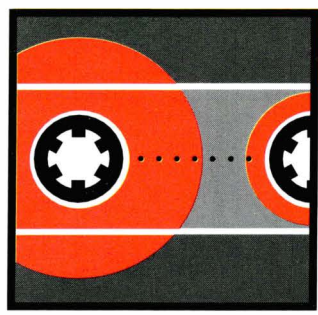
## CARTRIDGES

Product	Price(£)	Comment	REPLACEABLE STYLUS	OUTPUT (MV)	MASS (g)	FACTSBACK NUMBER	ISSUE NUMBER
Audio Note Io IIv	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  
OUTPUT (mV)  
FACTSBACK NUMBER  
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 S10/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●	●	3.0	5	85
Ortofon S20/P	65	Sensitive to load capacitance, the S20/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**

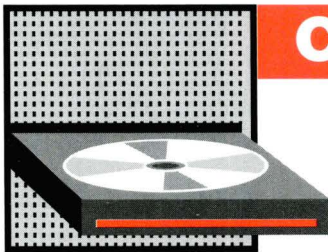
KEY	<b>DOLBY C:</b> A rather extreme noise-reduction system not usually associated with high sound quality. <b>DOLBY S:</b> A desirable derivative of the Dolby SR professional noise-reduction system. <b>DOLBY HX-PRO:</b> System designed by B&O to extend headroom	for cassette recording. <b>3-HEAD:</b> If you want to monitor a recording while you are making it, a third head is essential. <b>TWIN DECK:</b> Contains two decks for dubbing and continuous play. In most instances only one deck will record.	<b>AUTOREVERSE:</b> Automatically plays both sides of the cassette. <b>AUTO CALIBRATION:</b> The deck will automatically set up bias and EQ for any tape. <b>ADJUSTABLE BIAS:</b> Bias can be manually set to suit the tape being used.	<b>FACTSBACK NUMBER:</b> The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page. <b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
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Product	Price(£)	Comments	DOLBY C	DOLBY S	DOLBY HX-PRO	3-HEAD	TWIN DECK	AUTOREVERSE	AUTO CALIBRATION	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	●	●	●	●	●	●	●	●	158	
Denon DRW-580	200	Twin deck: OK for casual use, but will quickly pall with more quality critical applications	●	●	●	●	●	●	●	●		171

DOLBY HX PRO  
DOLBY S  
DOLBY C  
3-HEAD  
TWIN HEAD  
AUTO CALIBRATION  
ADJUSTABLE BIAS  
FACTSBACK NUMBER  
ISSUE NUMBER

CASSETTE DECKS (CONTINUED)

Product	Price(£)	Comments	DOLBY HX PRO	DOLBY S	DOLBY C	3-HEAD	TWIN HEAD	AUTO CALIBRATION	ADJUSTABLE BIAS	FACTSBACK NUMBER	ISSUE NUMBER
Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●	●	●	●	●	●	●	1591	140
Denon DRM-650S	230	An all-round improvement on predecessors, offers a wide-ranging, disciplined sound. Dolby S is not the best feature	●	●	●	●	●	●	●		164
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	●	●	●	●	●	●	●		127
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	●	●	●	●	●	●	●		164
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●		158
JVC TD-V562BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque	●	●	●	●	●	●	●		123
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	●	●	●	●	●	●	●		171
Kenwood KX-W6080	200	Modestly decent sounding twin deck, with some transport instability and ragged bass. The features list is also strong	●	●	●	●	●	●	●		171
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●		158
NAD 616	300	Primitive twin deck with basic features. No Dolby setting memory, transports are too unstable for serious quality first use.	●	●	●	●	●	●	●		171
Onkyo K-611	460	Cute drawer loading mini-size component with 3-heads and dual capstan transport	●	●	●	●	●	●	●	1384	146
Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●	●	●	●	●	●	●		164
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this ultra-sophisticated twin would have been recommended.	●	●	●	●	●	●	●		171
Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	●	1385	146
Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open and un-cassette-like sound	●	●	●	●	●	●	●		158
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	●	●	●	●	●	●	●		164
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	●	●	●	●	●	●	●		158
Yamaha KX-490	199	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●	●	●	●	●	●	●		158
Yamaha KX-580SE	250	Subtle, engaging and transparent sounding deck, with a lightweight tonality, but good stability and strong detail	●	●	●	●	●	●	●		171



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.



KEY

<b>ELECTRICAL DIGITAL OUTPUT:</b> For electrical connection to an outboard DAC.	<b>AT&amp;T OPT DIG OUTPUT:</b> High-speed optical output to be used with similarly equipped DACs.	controlled output.	bitstream, PWM, etc
<b>AES/EBU ELEC DIG OUTPUT:</b> Balanced digital output to be used with similarly equipped DACs.	<b>BAL ANALOGUE OUTPUT:</b> Balanced analogue output for amplifiers equipped with balanced inputs.	<b>MULTI-DISC:</b> Equipped with a carousel or multi-tray system for continuous play of multiple discs.	<b>FACTSBACK NUMBER:</b> The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
<b>OPTICAL DIGITAL OUTPUT:</b> For optical connection to an outboard DAC.	<b>HEADPHONE SOCKET:</b> For can users.	<b>DAC TYPE:</b> Digital to analogue convertor: BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bit-stream technologies, 1bit - single bit types such as MASH,	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
	<b>VARIABLE OUTPUT:</b> Remotely adjustable, volume-		

CD PLAYERS

Product	Price(£)	Comments	AES/EBU ELEC DIG OUTPUT	OPTICAL DIGITAL OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	ISSUE NUMBER
Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation distinguish this player from the crowd	●	●	●	●	●	●	●	Hyb	169
Acurus ACD11	899	First-rate if costly player from the US, which combines a delightful transparency with an uncontrived naturalness	●	●	●	●	●	●	●	1bit	166
Arcam Alpha 7	330	Very detailed for a budget player with a slick and free sense of dynamics, needs careful ancillary matching	●	●	●	●	●	●	●	Hyb	1872
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
Arcam Alpha 8	520	Refined, intricately detailed but a little cautious, this should be broadly compatible with a variety of amps	●	●	●	●	●	●	●	BS	1873
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
Audiolab 8000CD	1,000	Developed according to the Green Cross Code of digital audio with an elegant but safe musical presentation	●	●	●	●	●	●	●	BS	1874
Audio Research CD1	3,290	Suspends disbelief with a frighteningly real yet obviously coloured sound. A rare proposition among CD players	●	●	●	●	●	●	●	BS	1875
AVI S2000MC2	899	A chip off the old block, this model's in-ner-face balance obstructs an otherwise finely detailed and dynamic sound	●	●	●	●	●	●	●	MB	176
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
Cambridge Audio CD4	150	Basic appearance and sluggish track access/track search belies its up and at 'em sound quality	●	●	●	●	●	●	●	Hyb	1268
Cambridge Audio CD4SE	200	Among the best players we have encountered at the price, considerably more refined and convincing than CD4	●	●	●	●	●	●	●	BS	1877
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
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
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
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
Denon DCD-1015	350	Excellent, mid-range player - fast, fluid and lean	●	●	●	●	●	●	●	MB	1599
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
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
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
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
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



**CD PLAYERS (CONTINUED)**

Product	Price(£)	Comments	AES/EBU ELEC DIG OUT		OPTICAL DIGITAL OUT		AT&T OPT DIG OUT		BAL ANALOGUE OUT		HEADPHONE OUTPUT		VARIABLE SOCKET		MULTI-DISC		FACTSBACK NUMBER		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	
Meracrus 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	●															1bit		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	Shoebux 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-PC480A	130	Full driving sound, but somewhat uneven in balance with a unsubtle, 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	
<b>TRANSPORTS</b>																					
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 Atessa 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 OUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE SOCKET	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										
Arcom Black Box 50	350	Measured and sophisticated sound from a DAC that leaves plenty in reserve for future upgrades							Hyb	1506 133
Arcom 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 Attessa ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material							Ibit	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

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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.



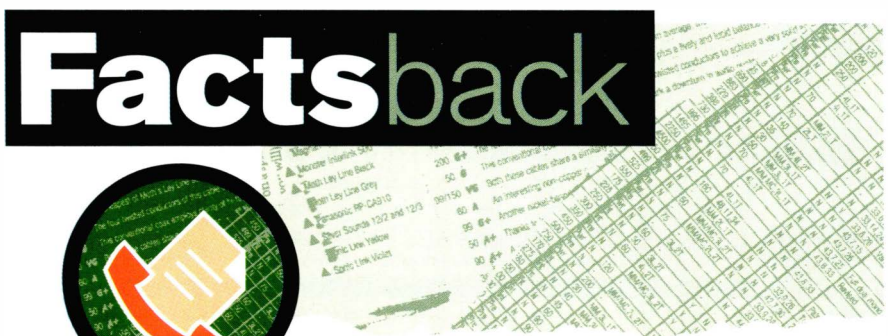
KEY	FORMAT:	DAC TYPE:	ADC TYPE:	ELECTRICAL IN/OUTPUTS:	FACTSBACK NUMBER:	ISSUE NUMBER:
	Type of recorder, see above for descriptions.	Digital to analogue converter: BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bitstream technologies, Ibit - single bit types such as MASH, bitstream, PWM etc	Analogue to digital converter types as per DACs. PORTABLE: Can be run off batteries but not necessarily personal stereo size. OPTICAL IN/OUTPUTS: Digital socketry for optical cable.	Digital socketry for electrical cable. FACTSBACK NUMBER: 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.	

DIGITAL RECORDERS

Product	Price (£)	Comments	FORMAT	DAC TYPE	ADC TYPE	ELECTRICAL IN/OUTPUTS	OPTICAL IN/OUTPUTS	PORTABLE	FACTSBACK NUMBER	ISSUE NUMBER
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	

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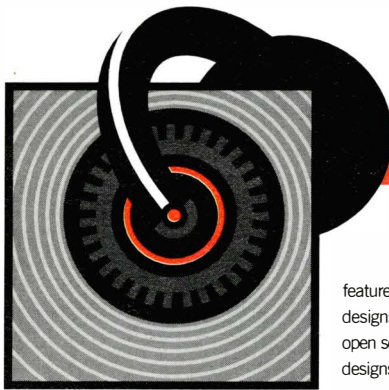
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# Headphones

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**T**here 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.

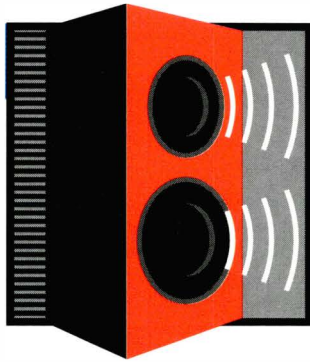
There are three styles of headphone: circumaural models enclose the ear; supra-aural designs feature a flat pad which presses on the outer ear; and intra-aurals (in-ear) rest inside the ear itself, à la personal stereos. For best results a separate headphone amplifier is recommended.

**B** Best Buy **R** Recommended

KEY					
<b>TYPE:</b> Operating principle: D - dynamic, E - electrostatic.	<b>CLOSED BACK:</b> Keeps out external noise.	amplifier output.	ordering a fax copy of the review. Use the contents page to find the Factsback information page.		
<b>SUPRA-AURAL:</b> Style where a flat pad presses on the outer ear.	<b>WEIGHT (G):</b> Mass in grams	<b>3.5MM JACK ADAPTOR:</b> Can be used with mini-jack-equipped components such as personal stereos.	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.		
<b>CIRCUM-AURAL:</b> Style which encloses the ear.	<b>IMPEDANCE (Ω):</b> Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given	<b>FACTSBACK NUMBER:</b> The Factsback reference for			
<b>OPEN BACK:</b> Offers an open sound but lets in noise.					

Product	Price (£)	Comments	TYPE	CIRCUM-AURAL	SUPRA-AURAL	OPEN BACK	CLOSED BACK	WEIGHT (g)	3.5mm JACK ADAPTOR	IMPEDANCE (Ω)	FACTSBACK NUMBER	ISSUE NUMBER
<b>B</b> AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D	●	●	●	●	270	120			99
<b>A</b> Audio Technica ATH910PRO	90	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found with headphones	D	●			●	280	40			55
Beyer DT100	152	Rugged, modular professional design, but bass is woolly and treble lacks detail	D		●		●	350	600			157
Beyer DT311	57	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D	●			●	124	40	●	1098	133
<b>B</b> Beyer DT331	82	Tonally bright and deficient in bass, but exceptionally comfortable, articulate, detailed and refined	D	●			●	210	40	●	1801	157
Beyer DT411	69	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D	●			●	120	250			111
<b>A</b> Beyer DT511	117	Superb midband clarity and speed slightly at odds with soft bass. High tingle factor even so	D	●			●	200	250			172
<b>A</b> Beyer DT531	135	A good buy for serious, heavy-duty music making	D	●			●	245	250			144
<b>A</b> Beyer DT911	235	Probably too revealing for many headphone amps, these are very subtle and fine, if expensive cans	D	●			●	275	250			111
Denon AH-D550	80	A competent 'phone with integrity, but little panache or charisma. Hard headband causes brain strain	D		●		●	200	35	●	1801	157
Denon AH-D750	130	Loud and gutsy, meaty bass, good with rock and dance. Can sound thick and clumsy	D		●		●	250	30	●		172
Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable	D	●			●	120	32	●		172
Grado SR-80	100	Clear, open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D	●			●	60	8	●	1801	157
<b>A</b> Grado SR-225	200	Warn, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music if not the letter	D	●			●	200	32		1883	163
<b>B</b> Jecklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	D	●			●	400	200			55
<b>A</b> Jecklin Float Model 2	99	Helmet shaped, but open sounding and comfortable in the long term, despite lack of adjustment	D	●			●	400	200			63
JVC HA-D910	65	Broadly acceptable if unexciting design with low level losses and some colourations	D	●			●	220	32	●		121
JVC HA-W60	49	Remarkably lack of interference and hiss makes adequate sound seem even better than it is	D	●			●	165	I/R	●		172
Kenwood KH-1000	20	First step-up from a true mini: a near miniature which is cheap, comfortable and inoffensive	D	●			●	30	32	●		121
Maxell HP-3000	30	Solid, smooth-sounding supra-aural headphone, but congested and undynamic. Includes in-lead controls	D	●			●	120	32	●	1099	133
Precide Ergo Model 2	140	Still has much of the spaciousness and detachment of the Float from which it is derived, but has a coarse mid/top	D	●			●	380	100	●	1892	163
<b>B</b> Philips SBC 3396	70	Remarkably airy for closed-back designs. Fine tonal balance, punchy delivery. Amazing for money	D	●			●	255	32	●		172
Philips SBC HP900	90	Sharper, snappier midrange than 3396 initially impressive but blows the balance and listenability	D	●			●	200	32	●		172
Ross RDH-300CD	17	In-lead controls are the highlights of this shoddy, sometimes aggressive-sounding design	D	●			●	155	8	●		133
Sennheiser IS 380	55	As close as you'll get to real hi-fi with IR phones at this price. Inevitable hiss spoils the illusion	D	●			●	192	I/R	●		172
<b>A</b> Sennheiser HD 455	55	Inoffensive, if nondescript sound, modular, but can become dislodged from head	D	●			●	185	60	●	1801	157
Sennheiser HD 475	80	Elegant, uncluttered sound and very comfortable but lean bass saps satisfaction	D	●			●	120	60	●		172
<b>A</b> Sennheiser HD 545	125	Fine all rounder that takes all styles of music in its stride. Ear-clamping headband	D	●			●	255	150	●		172
<b>B</b> Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable	D	●			●	255	150	●	1801	157
Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with an achingly pure midband, but top end is sibilant and edgy	E	●			●	260	n/a	●	1898	163
Sony MDR-CD770	100	Neutrality and comfort make the Sony easy to live with. Technically correct-sounding too, yet musically unrewarding	D	●			●	-	-	●	1801	157
<b>B</b> Sony MDR-CD1700	199	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone. Tremendous value	D	●			●	325	32	●	1901	163
Sony MDR-F1	100	Natural, easy-going sound teamed with great looks and comfort. Shame about the lightweight bass	D	●			●	300	12	●		172
Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof	D	●			●	230	32	●		172
<b>B</b> Stax Lambda Nova Basic	449	Refined, articulate, yet with real presence - and a notable bargain by electrostatic standards	E	●			●	347	n/a	●	1902	163
Technics RP-HT700	70	Well-finished but physically crass and grubby sounding	D	●			●	255	-	●	1801	157
Vivanco IR5800	50	Consistently musical and easy going. Doesn't reach for sonic heights so hiss is less bothersome	D	●			1/2	226	I/R	●		172
<b>A</b> Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive, thanks to tweeter resonance	D	●			●	175	-	●	1801	157
<b>B</b> Vivanco SR750	60	Cossetting physical design, attractive sound and pricing, though suffers overhang and lacks ultimate dynamics	D	●			●	188	-	●	1801	157
Vivanco IR7100	120	Infra-red phones that work well but suffer from the limitations of the medium ie compression and hiss (Sessions)	D	●			●	265	-			149
Vivanco Cyberwave FMH3000	80	The only cordless headphone that offer genuine walkabout freedom. But it sounds like a cheap FM tuner	D	●			●	210	FM	●		172

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# Hi-Fi Loudspeakers

Brought to you in association with **KEF**

**A**s 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	
<b>SIZE WxHxD (cm):</b> Width by height by depth in centimetres.	<b>IMPEDANCE (Ω):</b> 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.
<b>FLOORSTANDER:</b> As opposed to requiring a dedicated stand.	<b>FREE SPACE:</b> Speakers should be placed away from walls.
<b>SENSITIVITY (dB/W):</b> Efficiency: how much volume you get for a given input; the higher the louder.	<b>CLOSE TO WALL:</b> It is recommended that these speakers be placed close (between 3 and 12cm) to the rear wall.
	<b>BASS FROM (Hz):</b> The lowest frequency that a speaker can reproduce, based on in-room measurements.
	<b>FACTSBACK NUMBER:</b> The reference for ordering a fax copy of the review. Use the contents page to find the Factsback page.
	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

## HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price (£)	Comments	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FACTSBACK NUMBER	ISSUE NUMBER
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
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
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
AVI Positron	900	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
B&W DM601	200	Great main driver for the price, entertaining dynamics	20,5,35,5,23	●	88	6	30	●	1779
B&W DM602	300	Prefers tall stands and space, but offers impressive midband dynamics and musical tension	24,49,31	●	90	8	30	●	1654
B&W 305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31	●	89	4	40	●	1908
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 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
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
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 Severn 2	580	Carbon fibre cone gives lovely, subtle midband but treble is a bit dull and bass a bit thumpy; lovely cabinetwork	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
Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	●	88	8	28	●	1820
Castle Howard S2	1,200	Able to fill the gap between Chester and Winchester; has a rich, laid-back balance	26,104,41	●	90	8	40	●	1078
Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35	●	88	6	25	●	1910
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
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
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 Applause 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
Epos ES12	500	High quality luxury stand-mount has great midband and stereo imaging	20,38,25	●	85	8	45	●	1823
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
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	●	88	6	22	●	1346
Faraday Siren	445	High mass concrete cabinet is let down by imbalance of ageing driver combination	25,27,46	●	90	4	48	●	94
Gale 2i	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
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
Heybrook Heylo	439	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	●	88	8	30	●	1658
Heybrook Quartet	649	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22	●	90	8	48	●	122
Heybrook Ultima	650	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
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

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price (£)	Comments	SIZE WxHxD (CM)	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FACTS		ISSUE NUMBER	
							CLOSE TO WALL	FREE SPACE	15	16
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	Pricely, 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	140	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 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 pricey 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	130	Lovely open voice reproduction, but bass could be tauter; build tougher	18,30,23	● 88	6 50	●	●	1783	156	
KEF Coda 8	190	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	● 86	6 28	●	●	1784	156	
KEF Coda 9	300	Uneven budget 3-way floorstander with poor bass definition	20,86,28	● 89	6 30	●	●	1785	156	
KEF RDM One	500	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 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	580	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 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 pricey 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	Elegant compact floorstander has good all-round sound and value	20,85,18	● 84	8 25	●	●	1827	160	
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 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	
Pink Triangle Ventrical	999	If you are after Quad Electrostatic-type transparency but can't afford the price... (Sessions)	15,80,32	● 86	11	●	●		142	
PMC TB1	410	Superb transparency, subtle laid-back sound, well worth seeking out	20,40,31	● 87	8 45	●	●	1830	160	
PMC LB1	935	Delightful smoothness and transparency, though bass and treble are both limited	18,53,25	● 89	4 33	●	●		110	
PMC AB1	1,496	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	
Polk RT16	800	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 Quibic 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 Kyle	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	

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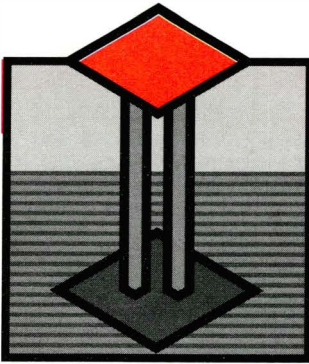
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## HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(dB/W)	IMPEDANCE(Ω)	BASS FROM	FACTS	ISSUE NUMBER	
				FLOORSTANDER		CLOSE TO WALL	FREE SPACE		
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 Beretta	100	Great bass for the price, a bit crude further up	19,35,22	87	8	45	●	1790 156	
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 I	1,300	Innovative metal-box compact with integral pol /stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	167
Rogers LS1	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	Pricely 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 OJ3X 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	600	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	1,600	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	330	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 D300	1,000	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 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	199	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	299	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	
<b>SUBWOOFERS</b>									
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	
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	


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# Stands & Supports

**H**i-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.	lead to increase mass, which affects sound.	rack or support:	copy of the review. Use the contents page to find the Factsback information page.	
TOP PLATE SIZE (CM):	Dimensions of top plate on speaker stand or equipment support.	WELDED: The better stands and supports are welded rather than bolted together.	SHELF TYPE:	Material that shelves are made of on an equipment rack. Wood generally means MDF	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
FILLABLE:	Some speaker stands can be filled with sand and/or	NUMBER OF SHELVES:	The amount of tiers on an equipment	FACTSBACK NUMBER:	The Factsback reference for ordering a fax

## STANDS & SUPPORTS

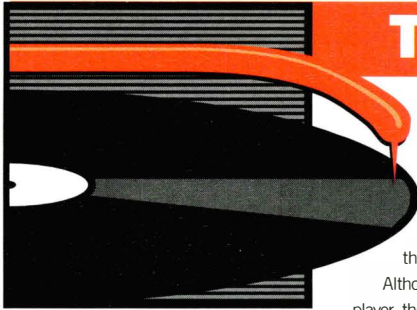
Product	Price(£)	Comments	HEIGHT (CM)	TOP PLATE SIZE (CM)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	FACTSBACK NUMBER	ISSUE NUMBER	
<b>Equipment Supports</b>											
Audiophile Furniture Base	480	Easy to set up, well-ordered sound	40				4	Wood	1633	151	
Custom Design Classic Four	270	Glass-shelved 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	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		
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	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	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	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	
<b>Speaker Stands</b>											
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	
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	
Atacama BD21	55	Good-looking and good value but doesn't match the SE24's sound quality	56	15,17	●					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	
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	
Kudos S100	270	The best all-round stand around. . . Probably. . .	63	15,21	●					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	
RMS/Stands Unique Vivus	550	Pricely carbon fibres give ultra-clean sound with exceptional voices	50	N/A						159	
Soundstyle 124	100	Big, shiny and solid, with fine midband projection	65	17,16	●					159	
Stands Unique HP	220	Real wood disguises high performance tuned technology	59	22,23						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

# HI-FI CHOICE

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DEALER DIRECTORY

# Tonearms



**T**urntables 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.

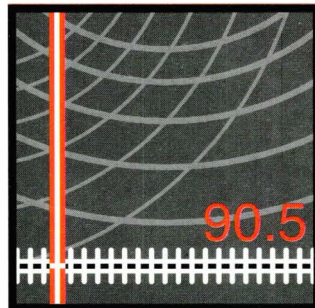
**B** Best buy **R** Recommended

**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 Xenex, 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

**T**he 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.

**B** Best buy **R** Recommended

**KEY**

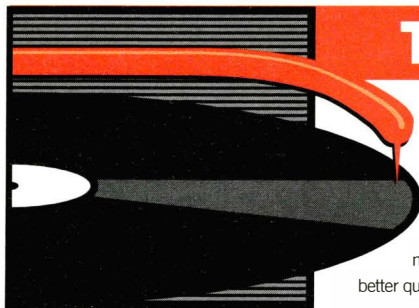
**WAVEBANDS:** Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for receiving certain transmissions in the UK.  
**PRESETS:** Number of station frequencies that can be stored.  
**RDS:** (radio data system) was originally designed for in-car applications. Basically RDS 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	REMOTE CONTROL	ROTARY TUNING KNOB	SIGNAL STRENGTH METER	FACTSBACK NUMBER	ISSUE NUMBER
AMC T7	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	142
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			
<b>MANUAL:</b> You do it all: put the needle on the record and take it off.	structural interference.	<b>SUPPLIED WITH CARTRIDGE:</b> Most turntables do not come supplied with a needle.	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
<b>AUTO:</b> The record player does it all.	<b>EXTERNAL PSU:</b> Outboard power supply; generally it indicates high quality.	<b>FACTSBACK NUMBER:</b> The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	
<b>SEMI-AUTO:</b> You share the work: you put it on, it takes it off.	<b>SUPPLIED WITH ARM:</b> Many turntables require a separate arm to be fitted; if not, this tells you so.		
<b>SPEEDS:</b> In RPM to correspond with your platters.			
<b>SUSPENDED SUBCHASSIS:</b> Sprung suspension to minimise			

## TURNTABLES

Product	Price(£)	Comments						ISSUE NUMBER	PRICE				
			MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSPENDED SUBCHASSIS			EXTERNAL PSU	SUPPLIED WITH CARTRIDGE	FACTSBACK 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		
▲ DNM Rota 2	4,800	Tonally slightly bleached, but extracts detail like few others. Works well on own table	●						33/45	●	1328	144	
▲ Dual 505-4 UK	200	Consistent sounding and well isolated turntable. It is slightly lacking in oomph			●				33/45	●	●	103	
▲ Kuzma Stabi/PS	1,200	(Tested with Stogi Reference) Solid oak plinth, sound is very clear, detailed and extended	●						33/45	●	●	91	
▲ Linn LP12 Basik	1,050	Trails the full LP12 significantly, but pace, rhythm, timing etc still top rank	●						33	●	●	103	
▲ Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●						33/45	●	●	91	
▲ 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	
▲ Notts Analogue Spacedeck/Arm	1,125	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●						33/45	●	●	159	
▲ Pink Triangle Anniversary	1,980	Possibly the most detailed, clear and neutral-sounding deck around. Likeness to master tape is uncanny	●						33/45	●	●	91	
▲ Pro-ject 2	299	Remarkably effective at the price with decent timing and a generally well defined sound	●						33/45	●	●	164	
▲ 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	
▲ Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●						33/45	●	●	48	
▲ 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	
▲ 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	
▲ Reson RS1	675	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●						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
▲ 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	
▲ Thorens TD166 VI/UK/RB	300	Refined and solid sound with well-focused imagery; suitable for use with good MM and budget MC cartridges	●						33/45	●	●	103	
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled							33/45	●	●	159	
▲ 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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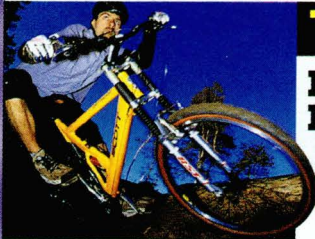
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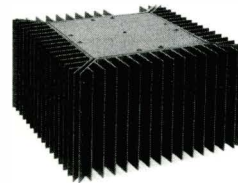
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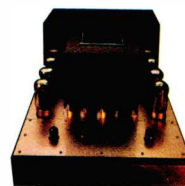
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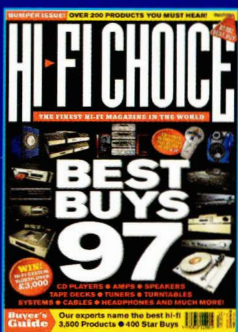
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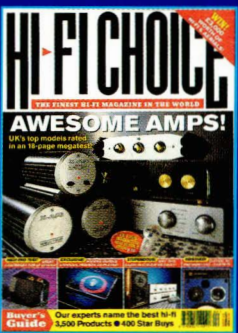
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## NEXT MONTH'S ISSUE

- **SPEAKERS PRICED £200-£650**
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### MID-PRICED 'UPGRADE' SPEAKERS

We test 15 speakers priced from £200-£650. Do they make a worthwhile upgrade from budget 'starter' designs? Candidates include Acoustic Energy AE200, Celestion 23i, JPW ML710, Mission 750LE, Eltax Linear Response, Castle Kendal, PMC TB1S, Tannoy Precision, Dynaudio Audience 5, B&W CDM1SE, JBL L20, MA Monitor 4, Neat Mystique, NHT 1.5 & TDL CF200.

### US HIGH END SPECIAL

Krell's latest pre/power amplifier, the KAV-250p/a, is its cheapest two-box offering yet. Does it embody the legendary Krell family values? Resolution Audio's new integrated CD player, the CD50, claims to be the ultimate in high-tech, while the new Boulder L5M/102M pre/power combination is a gargantuan rock of an amplification rig. Last but not least, we'll take a cruise with the ultra-stylish new Revel Ultima Gem speaker.

### DIGITAL RECORDERS

If you're itching to sling that beat-up old cassette deck, don't miss our test of five high-quality separates MiniDisc recorders — we'll check out the Kenwood DM-9090, Sony MDS-JA30ES, Denon DMD-1300, Onkyo MD121 and Sharp MDR-2.



Sharp MDR-2

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**THE APRIL 1998 EDITION OF HI-FI CHOICE WILL BE ON SALE THURSDAY MARCH 12, 1997. DON'T MISS IT!**

**Ultra** Big speakers don't suit small rooms, but why should diminutive dwellings suffer bantam bass? **David Vivian** investigates some potential solutions.

# Vivian Scene

**B**ig loudspeakers in small rooms look ridiculous. I should know. In recent months, it's been a personal quest to shoe-horn ever larger boxes into my dimensionally challenged lounge — just to discover what works, sonically. Quite a lot does.

For example, I was amazed by the gale of sound, and clean, non-boomy bass, issuing from a pair of strapping Kelly Transducers KT3 (Best Buy, HFC 174). Only problem: they blocked out the sun. Slimmer yet still taller, Mission's 735i gave a realistic sense of scale but bore a striking resemblance to New York's World Trade Centre.

Only the B&W CDM7 didn't appear enormous; its drawback was nearly over-ripe bass. With the right material it sounded gorgeously musical — I could have lived with a pair easily. Not until reinstating my regular B&W CDM2 (biggish bookshelf size, on slim, 24-inch Slate Audio stands) did I remember what attracted me to compact speakers in the first place: their size.

For a long time I've believed there is a 'golden ratio' of room-to-speaker size. Experience suggests that what looks right usually sounds right. Measuring roughly a foot tall by seven inches deep and seven inches wide, the CDM2 certainly seems close to optimum in a room 11ft 6 inches wide, 9ft 1 inch wide and 8ft 7 inches tall. They sound spacious and appear to image 'normally' for the available space.

Instruments and musicians don't appear full-size, but you'd only notice if you were instantaneously transported to a larger space hosting a much more substantial pair of floorstanders. In the right room, good small speakers can work brilliantly.

Unfortunately, affordability is not one of the foremost topics in this discussion. The CDM2s are fair value at £400, but sail well clear of 'budget exotica' boundaries. Look to the real luxury end of the tiddler spectrum, and even the Sonus Faber Minuetto will set you back £600. Still, this brand is a byword for build quality (sump-

tuous walnut'n'leather), sensual Italian design and crystalline sound quality. Push the boat out with these master craftsmen and you can comfortably dispose of a grand or more.

### Could there be another way?

No disrespect to the Italians, but if you could buy a pair of baby speakers with looks and sound even half as good, but costing just £250, you'd be interested, right? This is clearly the thinking behind the Mission 750LE: a quasi high-end miniature (much daintier than the rather bluff B&W), with tangibly classy production values and an almost-beer-money price-tag. If you go for the touchy-feely curviness of Sonus Faber's styling, the limited edition 750LE (only 7,000 will be made) appears irrevocably bound for 'must-have' classification.

The test samples looked particularly fetching, wrapped in a warm, lustrous, rosewood veneer. Certainly, the cabinet's curl-around cheeks and smoothly-

contoured baffle press all the right 'designer-chic' buttons. There's even a lavishly-grained leatherette covering for the base. Things look equally up-market with the grilles removed. In the usual Mission small-speaker tradition, the tweeter sits below the bass-mid cone. Another quality touch: these aren't your usual budget-box drive-units either. Aerogel, by reputation an extremely light yet rigid material, constitutes the 13cm bass-mid unit, while the soft-dome tweeter has a 25mm diameter.

Mission claims the 750LE has an equally intriguing inside story. Under the sobriquet 'Transverse Folded Technology', each cabinet is fashioned from two U-shaped sections, which lock together to form a very strong, self-bracing structure. Thick, routed panels assist in making the LE's cabinet extremely stiff, but apparently they also exhibit a high degree of self damping. Sensitivity is claimed to be a middling-to-good 86db/W/m, and there are twin sets of 4mm binding posts to permit bi-wiring.

With my Pioneer Precision CD and amp primed, I edged towards the start of a beautiful relationship with these Mission speakers. I was ready to be seduced at the least: it nearly happened, but not quite. The LE's strength is easily audible; perhaps it can be crystallised most succinctly as one of the most natural, articulate, transparent and expressive mid bands you will ever hear. I was stunned. Its treble is clear, clean, open and finely detailed. Mid and treble mesh seamlessly.

But as for the bass... well, it simply sounds small. Fast, yes. Tuneful, without question. It's even quite forceful at times. But a whole lower octave is missing — the larger B&Ws at least grab the shirt tails of deeper registers. As a result, the scale of the Missions' music making is a bit toy-town, even in a small room.

What this speaker needs, of course, is the services of a good subwoofer. We'll talk about that — and some more cables — next month. ▲

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