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**HI-FI CHOICE**

Future Publishing Ltd, 99 Baker Street, London W1M 1FB

**ISSUE 201 - APRIL 2000****EDITORIAL**

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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**

**Jason Kennedy** reflects on the Bristol Show, the joys of a good listening session and the new *Help* section.



**D**id you get down to the Bristol Show last month? If not, you missed an unexpectedly large hi-fi bonanza - six-and-a-half floors of exhibitors representing hordes of brands and putting on some fine demonstrations. Have a look at Paul Messenger's report on p10: he spent two days there and managed to cover a lot more ground than I could.

Still, I did manage to hear some new SACD-oriented Sony speakers. The SS-AL5 MkII (already!) is a compact standmount with the bat-eared in mind. The sound was pretty nimble and more in line with British tastes than I've heard from the American behemoths (SS-M9ED) that Sony has been using for its demos thus far.

Other highlights for me included the Mana power amps and prototype Stealth speakers, the fact that the stylish Oheocha 'pawn' speakers (see p6) sounded nearly as good as they looked, and the rather attractive form of the new Cyrus CLS70 speaker.

Almost as impressive as the show itself was the fact that it was given a 15-minute slot on Sky News. I've never seen so much hi-fi on TV before, and it wasn't all gadgets and micros: they had DVD-A, DVD-RW and cables(!) in a slot that was repeated thrice over the weekend. This combined with the Pioneer DVD-RW story on *Tomorrow's World* would suggest that certain aspects of our obsession are becoming popular. No mention of pace, rhythm and timing, however!

**HOME COMFORTS**

Subsequent to reviewing the distinctive SJ Audio pre/power amplifiers for our *High End* section, I've been using the ppa100 power amp with an old Michell Argo preamp and Living Voice OBX-R speakers. This unusual combination has proved to be particularly fortuitous, winning praise from hard-bitten music enthusiasts and hi-fi nuts alike.

This was noted during one of my irregular listening sessions, when it was also mooted that the world would be a better place if more people got together of an evening and played their favourite tracks at proper levels while imbibing relaxants of choice. How many of you have had your mates round to enjoy music and pass on the gospel of good hi-fi kit in the process? Not enough of you, if the rate at which DVD player sales are outstripping those of CD players is anything to go by.

It's one thing to sit alone and appreciate the finer points of imagery but another, far more enjoyable thing, to play great music with a bunch of your friends who like the same thing. You can stick on all those albums you used to like before you could afford serious hi-fi and enjoy the look of amazement on their faces as point of high fidelity hits home.

**WHO SAYS WE FEAR CHANGE?**

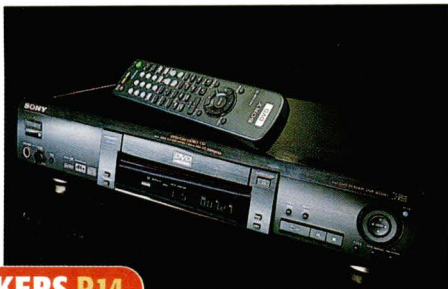
You will notice that our *Help* section has taken a new turn this month. Gone are the sections for specific query types, in their place a broader selection of problems audiophilic, ranging from the simple to the extreme. We've included some very short, basic queries and some pretty in-depth ones, too. All this combined with Del's magnificent new design mean that the new *Help* section is a more flexible, pragmatic beast, waiting to respond to the needs of the confused music lover.

In addition, Tim has introduced a buying guide at the end of *Help* which deals with a specific component type every month, and is intended to help those of you who haven't got around to writing in to us but still want to upgrade. This month it's that old *Choice* favourite, the turntable.

Finally, a question. What does your other half think of your enthusiasm for all things hi-fidelical? Encourage them to put pen to paper and we'll do a letters page special on reader's partners' problems. Who knows, we may even be able to come up with some solutions - and there's a free pair of ear plugs for every missive published.

**EDITOR'S CHOICE**

Just one example of the hi-fi manufacturer's art made the grade this month, although the Samuel Johnson ppa100 power amp would probably have made it too were it reviewed alone. As it is, Tim's enthusiasm for the PMC FB1 loudspeaker (above) proved infectious, this is clearly a very capable and entertaining design that warrants all the attention we can give it.



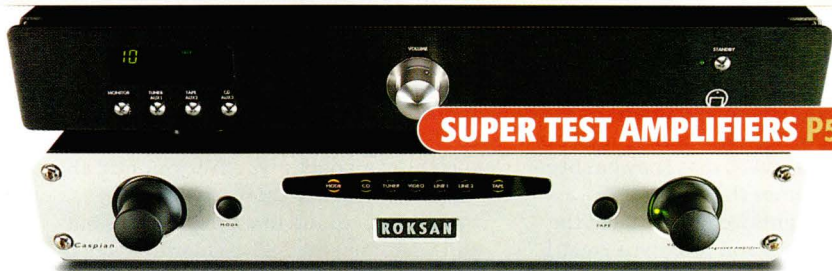
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**MONITOR AUDIO**

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# NEWS & VIEWS

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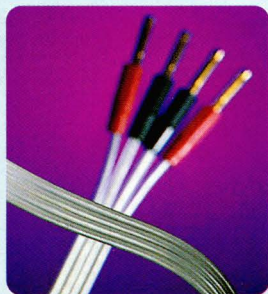
## NEWS IN BRIEF



**TEAC** has unveiled two new CD-R models to add to its 300 and 500 Reference Series of components. Both products are similarly specified and featured, and are designed to fit together with their respective mini and micro system stabilmates. The new models cost £399.95 and £449.95 respectively.  
☎ (01923) 819630

**SMV ENTERPRISES** has announced the release of Pink Floyd's *The Wall* on DVD. Mastered from the original widescreen format and remastered with a Dolby Digital soundtrack, special features include an extensive interview documentary, original film trailer and previously unreleased film footage. It will cost £19.99.

**NAKAMICHI** has added two models to its SoundSpace range of pre-packaged 'lifestyle' systems. Following last year's launch of the SoundSpace 8, the SoundSpace 5 features a three-disc CD changer and RDS tuner, and costs £800. The SoundSpace 3 is more of an upmarket CD/radio alarm clock, and costs £500.  
☎ (020) 8863 9117



**QED** has unveiled a new budget bi-wireable speaker cable. Based on the company's successful Quex Micro, the Bi-wireable version (above) offers even greater benefits for the growing number of entry-level hi-fi systems with bi-wiring capabilities. Costing £3 per metre, it's available now.  
☎ (01276) 451166

**PROTAPE** has unveiled plans to distribute speakers from Californian-based manufacturer KRK Systems, Inc. Little known on the domestic scene, the American company has a range of passive and active speaker monitors costing from £269 to £3,130 and claims an extensive professional client list in the US.  
☎ (020) 7616 500

**QED** has announced brand name changes to its Qudos speaker cable range and Qnect interconnect cables. The company has made the changes to avoid confusion with other products. Qudos and Qnect will now be known as 'Original' and 'Quex'.

## DVD goes multiplay



Denon has created the first DVD multiplay to hit the UK. The DVM-3700 uses a carousel mechanism to load up five CD or DVD-Video discs at once, giving the user hours of uninterrupted music and movie entertainment without budging from the sofa's warm, velvety embrace.

What's more, Denon claims it borrows circuitry from the company's benchmark DVD-5000 player, ensuring that performance is not forgotten in the quest for convenience. The firm's Alpha-derived 'AL24' processing lies at its heart, sporting 24-bit/96 kHz audio DACs and HDCD-compatibility, while its high-mass chassis is intended to absorb performance-threatening vibration.



Under the lid, the critical audio, video and digital control sections are separated, interference-screened and supplied by their own dedicated power transformers. The DVM-3700 costs £1,000 and is available now; expect a review in *Heat Seekers* next month.  
Denon ☎ (01234) 741 200

## Breakaway Sennheisers



Sennheiser has introduced three FM cordless headphone models. Wireless 'phones offer the ability to listen to your favourite music or TV programme anywhere around the home, free from the restrictions of cabling.

All three models are open-back designs and detect an 86.3MHz radio frequency signal broadcast via a table-top transmitter connected to a hi-fi or TV.

The RS40 is an entry-level model, which costs £79.95, with supra-aural ear pads and a purportedly balanced and analytical sound with powerful bass.

Next up, the RS60, costing £119.95, featuring circumaural ear pads with velvet-like roll-cushions and a switchable surround sound processor that claims to give a 'surround', home cinema-like experience to films and music.

The flagship of the new range is the RS80, costing £159.95, featuring circumaural ear pads and Sennheiser's HiDyn *plus* noise reduction system. Its maker claims that the RS80 gives a noise free sound with improved frequency response for a detailed and natural sound and deep bass.

All three models are available now from your local Sennheiser stockist.

Sennheiser Helpline ☎ (01494) 551571



Oheocha D2 (left); D1 (right).

## Speakers from space!



Fancy something a little... different? Take a look at these creations from new UK speaker outfit Oheocha Design. Their sculptured aluminium enclosures are guaranteed to satisfy even the deepest artistic whim, yet their maker claims their form follows function, the curved cabinets minimising the sonically damaging effect of internal standing waves.


The company is launching two separate ranges, the most conventional of which is the D1-Series. The D1-s is a 26cm tall two-way standmount with a 6mm thick aluminium enclosure and an optional wooden front. It is accompanied by the D1-f, a floorstander that employs the same essential design but extends the concept into a 107cm tall floorstander with an additional bass driver, housed in its own enclosure. Enclosures are heavily damped and lined with medium density polymers.

Those of a more adventurous disposition might care to try the D2-Series, complete with spherical head and skinny stem. It's available in two forms – the aluminium clad D2-al or the D2-ec, which replaces the aluminium with a composite available in a variety of colours. Both models can be used with or without a tripod stand.

Prices for the D1-Series start at £450, while the D2-Series ranges from £495 to £650. Look out for a review of the D1-f next month.

Oheocha Design ☎ (01564) 782 502

# Sony enters DAB race

 Sony is the latest manufacturer to unveil a DAB (Digital Radio) tuner. Like the model from Technics, the STD-777ES offers FM/MW/LW reception as well as DAB, making it ideal for the transition from analogue to digital.


The tuner's circuitry features an 'S-TACT' Pulse DAC with a sampling frequency of 128kHz, an R-core power transformer and audio grade electrolytic capacitors throughout. It also sports Sony's 24-bit variable co-efficient digital filter, with four user-definable settings, as used in

the company's 'ES' series CD players. Facilities include 99 presets and the provision of both coaxial and optical digital outputs. Price is expected to be about £600.

Sony ☎ (0990) 111999



# Massive Meridian

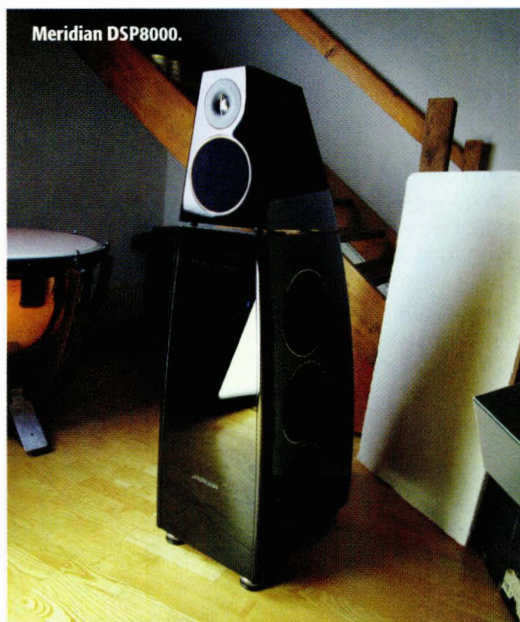
 Meridian has produced its most ambitious loudspeaker to date, the £30,000 DSP8000.

Formed by two separate enclosures, the base section houses six bass drivers together with five 100-Watt channels of amplification and four DACs.

The DSP8000 is designed to cater for the bandwidth and dynamic range of DVD-Audio, with which Meridian is fundamentally involved: hence the speaker's ability to run from digital sources up to 24-bit/96kHz and the claim that its high frequency extension runs to 40kHz. The speaker does not cater for the SACD format, but as yet there are no players with full bandwidth digital outputs on the market.

With cabinets made from marine ply and metal, these 'digital' speakers incorporate horizontally opposed bass drivers, the idea being to minimise energy transmission to the mid/treble enclosure. Other features include a pair of 100MHz DSP engines that provide crossover and user controls, an RS232 input for firmware updates and a range of durable finishes including piano black lacquer and toughened glass.

Meridian ☎ (01480) 434334



# TAG preamp mixes best of both worlds



TAG McLaren claims its DPA32R stereo preamp delivers the ultimate in flexibility. It incorporates a 24-bit/96kHz DAC, allowing it to accept digital signals in addition to analogue. That means you can hook up digital sources like CD and DVD players as transports-only, supplying a direct digital feed. In addition, users of analogue sources like vinyl benefit from an internal 20-bit/96kHz analogue-to-digital converter, so they don't have to rely on lower-specification converters inside digital recorders.

The manufacturer has also made use of the preamp's internal DAC to offer add-on DAB (Digital Radio) via an optional module. The result is claimed to provide the most cost-effective way of incorporating high performance DAB reception into your system, by sharing the DPA32R's power supplies and control circuitry, as well as its DAC.

Audiophile-grade circuit components are said to be used throughout, including Vishay resistors, Wima and Elna Cerafine capacitors, Burr-Brown op-amps and a toroidal transformer feeding nine independent supply rails. It employs the same 16-bit micro-controller found in the excellent AV32R processor, allowing inputs to be matched and individually labelled by the user. There are ten inputs in all – five analogue and five digital – plus a tape loop, and the unit is fully remote controlled.

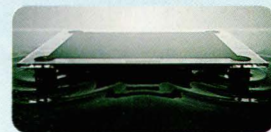
The DPA32R is available in black or silver and costs £1,695. The optional DAB module is priced at £595. TAG McLaren ☎ (01480) 415600



## NEWS IN BRIEF

respectively. Product specifications and performance remain unchanged. ☎ (01276) 451166

**QTRAX** has expanded its wall mounting equipment support system to include toughened glass shelves. The adjustable equipment support holds up to six shelves and features a useful cable tidy. Available with black or silver supports and maple or beech veneer finished shelves. ☎ (01992) 551484



**CRYSTAL CLOUD** has introduced the Isofloat equipment isolation platform (above). Made of a cast acrylic top-plate with four compliant feet, the Isofloat claims to offer dramatic improvements in clarity and definition across the audible range. Priced at £119, the platforms are stackable for individual component tuning. ☎ (01277) 260020

**AUDIO ILLUSION** has revealed that French manufacturer Cairn will now be branding its components E2O in the UK. The original specification and performance remain unchanged. It is hoped that the move will reduce any confusion with a similarly named product. ☎ (01753) 542761



**PANASONIC** has unleashed a new personal MiniDisc player. The SJ-MJ75 is touted as being a super small and lightweight player with stylish design, corded LCD remote control and 'Train' function that claims to reduce annoying sound leakage. Available in the shops now priced at £199.99.

**SACD UPDATE:** Sony has launched an SACD software Website aimed at enabling Internet users to discover and purchase SACD releases from participating record labels. The latest support for the high-end format comes from independent Scottish record label Linn Records, with the re-release of the Hue & Cry album *Next Move*. Website: [www.superaudio-cd.com](http://www.superaudio-cd.com)

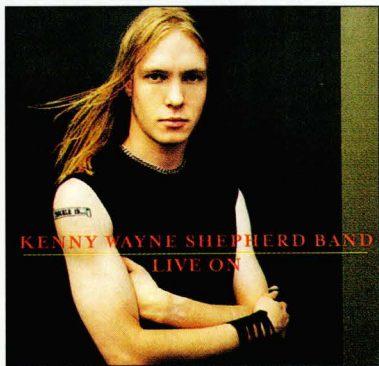
**CELESTION** has unveiled the C1 Improved loudspeaker, costing £199.99. It replaces the original model with its maker claiming further sonic design improvements. It's available in a silver finish, matching the complete C-Series. ☎ (01622) 687442

**NAKAMICHI** has released news of its latest DVD player to hit the high street. The DVD 10s follows in the wake of the company's DVD 10a, introduced last year, and claims uncompromising video and audio performance with a built-in Dolby Digital decoder and costs £599.99.

☎ (020) 8863 9117

## PREVIOUSLY UNHEARD

**Phil Strongman** digs out rare and classic tracks appearing on CD or virgin vinyl for the first time. Turn on, tune in, bliss out....



**KENNY WAYNE SHEPHERD BAND Live On**

A high-definition CD album that blends howling delta blues and pile-driving songs is always welcome, especially when much of it's cut live in the studio. The fact that wunderkid Kenny – he of the Stevie Ray Vaughan vibe – co-wrote most of it on his battered Fender is another plus. A modern blues classic from the dying months of the '90s, well produced by Jerry Harrison and superbly mastered by Bruce Ludwig. Giant HDCCD  
Music ★★★★★ Sonic ★★★★★

**BRUCE CAMERON Midnight Daydream**

Rawk guitar superstar hauls ageing pals from the Jimi Hendrix Experience, Cream, the Alice Cooper group and the Mothers of Invention into an analogue studio and lays down one of the genre's finest albums. Despite the odd dash of I'm-baad bullshit, this sounds pretty damn phenomenal with its stylish nods to heads-down boogie, metal blues and '68 psychedelia – and some amazing playing from the much-missed BC, who also took on the recording duties. Crank it up and see if your drive units are tweeters in woofers' clothing. Brain Cell CD  
Music ★★★★★ Sonic ★★★★★

**JOHNNY 'GUITAR' WATSON Gangster of Love: Best of**

Supersmooth late night funk from the singer who also happened to be, for many years, black America's finest guitarist. This selection from his 1976 to '81 heyday, has the *I Want To Ta Ta You* ballad, the Clinton-style *Funk Beyond...*, the genuinely strange *Lone Ranger* with its trad Scottish-style intro and the bluesy title track. Sequel CD  
Music ★★★★★ Sonic ★★★★★

**NEILS LAN DOKY Asian Sessions**

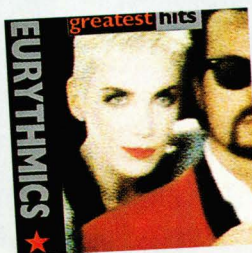
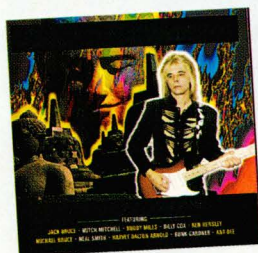
Doky does an Asian take on Paul Simon's *Graceland*, tinkling his ivories all over tracks cut in Peking, Paris and Hanoi – and very pleasant it is too. It's music that's generally mid-ground, rather than foreground, but well made for all that. The 11-minute epic *Dreaming With Eyes Open*, which features the Chinese National Trad Orchestra, is enticingly leftfield and urgent. Emary CD  
Music ★★★★★ Sonic ★★★★★

**EURYTHMICS Greatest Hits**

Just in time for the third 1980s revival – and the reunion tour – all the classy synth pop that Dave'n'Annie could fling at us including *Sweet Dreams*, *Right By Your Side*, *Who's That Girl* etc. RCA-BMG CD  
Music ★★★★★ Sonic ★★★★★

**JAMES BROWN Soul Classics**

JB's greatest hits, effectively, with *It's A Man's World*, *Sex Machine*, *Hot Pants*, *Cold Sweat* and *Poppa's Gotta Brand New Bag* showcasing the Godfather's powerful yet vulnerable voice and effortlessly rhythmic arrangements. One of Simply Vinyl's better pressings. Simply Vinyl double LP  
Music ★★★★★ Sonic ★★★★★



## Power Pass

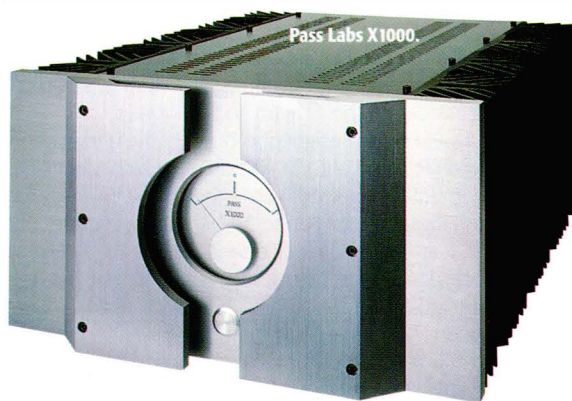


Californian-based high-end audio manufacturer, Pass Labs has unveiled details of a new monoblock power amplifier. As part of the company's X Series, the X1000 features some of the biggest and most powerful amplifiers the company has ever made and claims a dynamic range of more than 150dB for the benefit of 24-bit recordings, if not loudspeakers.

Distributed by Zentek Music in the UK, the X1000 monoblock has an output stage consisting of 80 power MOSFETs biased for class 'A' operation. To keep the current flowing, there are two large toroidal transformers and comes supplied with a special high current 20-amp power cord and requires a high current wall socket. Audio input is via balanced connection only.

Capable of even higher power operations, the X1000s can be operated in an array capable of delivering a claimed 2,000 Watts per unit. On the front panel, a meter indicates the current bias being drawn by the output stage. Available now, the X1000s are set to cost £10,500 each.

Zentek Music Ltd ☎ (01892) 539595



## These speakers rock!



Speakers with granite cabinets are the latest development from Nottinghamshire-based Hne Systems. The firm has been experimenting with granite for years, making use of its highly inert state to fashion speaker stands of some repute, and the Nonpareil speaker system is a natural progression.

The heart of the system is a granite-encased two-way 'pod' called the 16.02. This incorporates a mid/bass driver with a 17.5cm magnesium cone and a 28mm soft dome tweeter, and can be used on its own when mounted on a dedicated stand. Alternatively, this 'pod' can be coupled with a matching base unit, making up the complete 16.03 Nonpareil system as pictured (right).


A pair of 16.02 speakers will set you back £2,250, while the full 16.03 costs £4,800. Each speaker is hand built over eight weeks by a team of craftsman using luxury materials like solid hardwoods and gemstone polished granites. If the sound Hne was making at the Bristol hi-fi show is anything to go by, its choice of materials could prove rock solid.

Hne ☎ (01777) 708673





# Primare joins DVD race

 Swedish manufacturer Primare is launching its first DVD-Video player. The V20 is priced at £1,000, and the manufacturer claims its sonic performance is comparable with CD-only players in the same price range. To this end, sensitive D/A converters and audio circuitry are mounted separately away from the transport and laser assembly, as well as the custom-built power supply, to reduce interference.

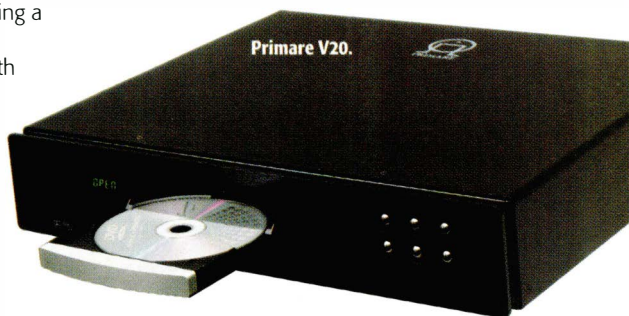
The player is equipped with a digital specification including a ten-bit D/A video converter, incorporating a video buffer for improved picture quality. Audio conversion is via a Burr-Brown DAC compatible with 24-bit/96kHz Dolby Digital (AC-3) and dts discs. However, Dolby Digital decoding is not included, as is often the case with the best-sounding DVD players – a separate processor is required to convert the Dolby Digital or dts datastream from the Primare's digital output.

Following in the footsteps of other 'music first' manufacturers, Primare has introduced two other

multi-channel products alongside the V20. The A30.5, costing £1,700, is a multi-channel amplifier with five independent monoblock sections, claiming 120 Watt output into eight Ohms. The P30, costing £2,000, is a preamp/processor touted as a high-end preamp with the addition of Dolby Digital and dts decoding.

All three models are available now from your nearest Primare stockist.

CSE ☎ (01423) 359054



## NEWS IN BRIEF



**TANNOY** has unveiled an addition to its Kingdom range of loudspeakers. The 'baby' Kingdom 12 (above) is a three-way design featuring a 30cm bass driver, 25.5cm Dual Concentric mid driver and a 25mm super tweeter. The makers claim the new model is ideally suited to the smaller listening room and costs £6,000.

☎ (01753) 680868




**IXOS** has unleashed a new digital interconnect cable. The coaxial 1051 'Argento' (above) features a silver plated solid-core copper conductor with twin oxygen-free copper braided screen. The makers claim it's ideally suited to digital hi-fi and A/V applications as an affordable upgrade. Cost is £39.95 for a metre length.

☎ (01494) 441736

**PHILEX ELECTRONIC** has launched a universal remote control system for all your audio and A/V needs. The Merlin combines a touch-sensitive LCD screen, directional pad and keypad with extensive programming facilities for controlling all your home entertainment devices from one unit. The Merlin costs £99.99.

☎ (020) 8457 2100

# Mordaunt-Short returns

 British loudspeaker brand Mordaunt-Short has unveiled its all-new line-up, following its acquisition by Audio Partnership in early 1999. The

Declaration Series was pre-viewed at January's Consumer Electronics Show in Las Vegas and goes on sale in May, exclusively through Richer Sounds.

The range incorporates four models, each featuring drive units with aluminium alloy cones. Their smooth appearance is apparently more than just aesthetic – the company calls it Continuous Profile Cone technology, and claim it delivers a fast and dynamic performance with a controlled piston action. The design is markedly similar to that employed by Eltax's Chroma range (see p33).

Declaration's entry-level is the £150 902, a 30cm tall two-way


standmount speaker with a 13cm mid/bass driver and a 25mm aluminium dome tweeter. Then comes the 904 at £250, which employs the same drive units but extends the cabinet to 80cm. The 906 weighs in at £350 and adds a second mid/bass drive unit into its 85cm tall frame, while the range-topping 908 costs £500, stands 95cm tall and augments the recipe with a side-firing 25cm bass driver.

And the line-up doesn't stop there. Also featured is the UK's first THX Select rated multi-channel speaker package – the Declaration 500. This £1,600 combination is based around the 502 front speaker, a floorstander with a specification similar to the 908 but with the addition of an integral 100W amp to power the bass driver. A 504 centre speaker and a pair of 506 dipole surrounds are also included. Mordaunt-Short says musical performance was given equal priority with movie sound during the package's development.

Audio Partnership ☎ (0800) 181355



# Exposure revised

 Exposure Electronics has forged an alliance with a Malaysian partner and started a complete overhaul of its range of amplifiers and CD players. Founder John Farlowe has moved out to the Far East to concentrate on product development while erstwhile loudspeaker designer, Andy Whittle, has taken over as MD. According to Whittle: "The intention is to consolidate the existing product line and expand into home cinema with a DVD player, AV processor and six channel amplifier."

The first fruit of this change was seen and heard at the Bristol show, it took the form of the Exposure 2010 integrated amplifier, a 50-Watt design priced at £499.

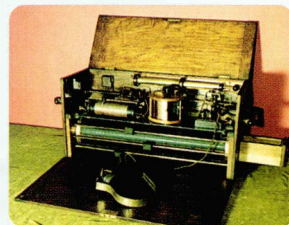
Details include specially designed and selected components, a 'tuned' short signal path, all aluminium case, optional MM or MC phono module for £100 extra, and MOSFET output devices. For an extra £100 you can have the remote volume control version, which also features an automatic sleep mode for the digital control circuitry.

Exposure also had a pre-production CD player that will be priced at £599 and should be in the shops by June, a month after the integrated amp.

Exposure ☎ (01273) 423877



Exposure 2010.



**THE NATIONAL VINTAGE COMMUNICATIONS FAIR** is being held at Birmingham's NEC on Sunday 30 April. Exhibits include the recently unearthed Edwardian crystal receiver which the exhibitors claim received the distress signal from the stricken Titanic in 1912. Entry costs £5, doors open at 10.30am to 4pm.

☎ (01392) 411565

# PAUL MESSENGER

Paul reports from the Sound & Vision 2000 show in Bristol. Severn's his lucky number...



This year's Bristol get-together, Sound & Vision 2000 (Feb 18-20), seemed thoroughly positive. Exceptionally well organised by leading independent dealers Audio T and Audio Excellence, it now more or less matches the Autumn Hammersmith event in importance, and is far more pleasant to do. This year saw a substantial increase in exhibitors, with visitors up 11 per cent and sales up 70 per cent on 1999. So the show was an unequivocal success, and the hi-fi and AV markets don't seem to be doing so badly either, despite all the technology changes that are going on.

Indeed, new technologies were probably one reason why the show was so busy. They were also the basis of an interesting press conference in which key DVD-Audio protagonists admitted their frustration with the copy protection delays in getting the format launched.

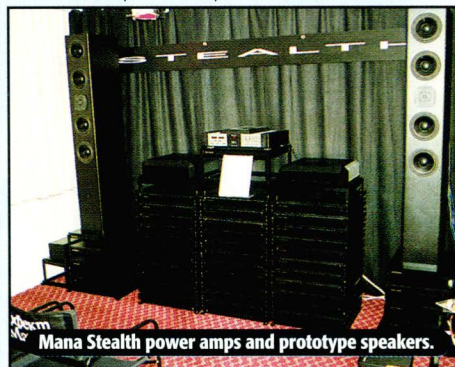
Meridian's Bob Stuart hopes an IBM/Intel solution to the copying issue will be finalised at the end of March. A further six months will be needed to prepare the chips, so a launch is still possible before the end of the year. There's now good availability of authoring software, and the music business is building up an inventory of material, so there should be a good selection of titles when the players finally appear. And it's handy to have extra time testing the interoperability of the alternative DVD-A formats – Bob reckons there are 2,840 possible variations!

Judging by the queues, there's plenty of interest in new 'high resolution' audio formats, but DAB radio was another new technology with a good presence at the show. The medium might not have won universal audiophile acclaim, but it seems to have started well enough commercially. Hitherto its prime appeal has been to those with real problems getting good FM reception, but now there's extra and exclusive programming from the commercial carriers too. Commercial DAB network Digital One reckons London residents should now get roughly twice as many DAB stations as those available on FM.

A growing number of exhibitors were demonstrating pictures-with-sound, from either film or music sources, and a number of specialist British brands, including TAG McLaren, Roksan,

Myryad and Cyrus, have recently added AV/5.1 processor preamps to their portfolios. These reflect a common concern to maximise performance when operating in stereo mode, Cyrus' Peter Bartlett commenting that although the new AV5 didn't quite match the company's new ACA7.5 stereo preamp, it was at least as good as the latter's dCA7 predecessor.

Despite the new technologies, vinyl was looking healthier than ever. John Michell told me his December sales had set a new record – and he wasn't even making the cheaper models any more. Tubes, however, seemed less evident



**"Judging by the queues at the show, there's plenty of interest in new 'high resolution' audio formats."**

than at Hammersmith, perhaps because this is a show aimed at British consumers, rather than a shop window to the world. It was good to see Audio Note's pretty silver Zero Level mini system providing a thermionic variation on the 'lifestyle' theme, as well as seriously upmarket components like the awesome DAC 5.

Wandering around the hotel room demos soon reminded one of the difficulties of getting decent bass performance in small concrete confines. All too often a system with true bass capabilities merely seemed to set off thick, dirty resonances. Dynaudio's Phil Tindale had a smile on his face, though: he'd borrowed two examples of Max Townshend's latest wheeze – pneumatic loudspeaker isolation platforms, and the Contour floorstanders had a bottom end that was noticeably cleaner than the competition. I'm intrigued to find out whether Max's devices will be as useful in a 'good' room.

In the Nordost/Aavic room, Lars Christiansen was demonstrating the audible differences between an equipment support using aluminium rods with one using titanium, the pity being that the better sounding titanium is so much more expensive. In stark contrast to

titanium, HNE is seriously into granite, and I was quite taken with some of the characteristics of its Nonpareil speaker system, built from compact but exceptionally heavy granite enclosures.

Meridian and Naim competed for honours as the most expensive system demonstration. Being 7.1 multi-channel, and with a new "flagship" DSP8000 speaker that costs £15,000 per channel, I reckon Meridian shaded it, and did a very impressive job of making a convincing case for multi-channel DVD-Audio. Yet I can also clearly recall a Handel Harp Concerto in Naim's NAP 500/DBL demonstration, not for the system's impact (which goes without saying), but for its extraordinary low-level delicacy.

One sign of the industry's rude health was the appearance of two new electronics companies. Samuel Johnson Audio's components have attractive sculpted hardwood and metal facias, while Newtonia showed an even larger range of components in an elegant brown and copper finish. Not so new, perhaps, but still little known, Morgan Audio deserves at least a name check for managing to create an exciting sound using affordable components in a tiny hotel bedroom – for the second year in succession!



Chord-powered Wilson benesch Bishops.

Whether one respects it or not, fashion is a key ingredient in the hi-fi mix, and Arcam's FMJ series is the most visible of a number of brands which are busily adding silver finish cosmetic alternatives to their electronics. At the leading edge of industrial design in packaged 'lifestyle' systems, Nakamichi looks firmly set to challenge the traditional stonking grounds of B&O and Bose. Meanwhile, Aonghus O'hEocha's startling new metal-jacketed speaker designs (see p6) attracted lots of favourable comment.

Some good news that broke at the show is that Exposure Electronics looks set for a revival: Malaysian investors have purchased a 70 per cent stake, and provided the investment needed to improve and update the range of a "new" Exposure Electronics Limited. The first product, a neat £500 integrated amp dubbed the Super 2010 and available in titanium or black, was shown for the first time at Bristol, and plans are well advanced for other new components, and for future expansion into home cinema and multi-room component territories.

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# COMPETITION

## WIN MONITOR AUDIO'S SILVER SERIES FLAGSHIP

Answer our two simple questions and you could win one of three pairs of Monitor Audio Silver 9i speakers to grace your living room.

**F**ancy upgrading your old loudspeakers but haven't got the necessary funds? No worries. Those generous guys at Monitor Audio have donated three pairs of Silver 9i loudspeakers, worth £999 per pair, to this month's super prize giveaway. And you could be one of the three lucky readers to get their hands on a pair.

Monitor Audio is a respected loudspeaker manufacturer with almost 30 years in the industry. From its factory in Cambridge, each speaker is designed and lovingly hand-built by a team of dedicated audiophiles. The flagship model of the Silver Series, the 9i is a three-way design featuring a twin mid/bass configuration with two 165mm drivers and a 25mm dome tweeter. The drive units are made from Monitor's ceramic-coated aluminium

magnesium alloy, which is one of the lightest and most rigid materials used in speaker cones today. Monitor Audio's trademark gold-dome tweeter is also made from the same material and is claimed to give a seamless frequency response between drive units right across the band.

Standing at 91cm tall, these elegant floorstanders are mass-loaded for additional stability and improved bass control. Magnetically shielded for use in A/V systems, our winners will have a choice of natural cherry, black oak and rose mahogany real-wood veneer finishes.

So, if you think it's about time your system had a sound-lift, don't delay and enter today. For the cost of a stamp these speakers could soon be gracing your living room.

### HOW TO ENTER

Answer the questions below by circling the correct answers, then fill in your name, address and daytime telephone number in the spaces given.

#### WHERE IS MONITOR AUDIO BASED?

- a) Oxford
- b) Cambridge
- c) Croydon

#### WHAT ARE THE CONES ON THE 9i MADE FROM?

- a) Doped paper
- b) Ceramic-coated aluminium magnesium alloy
- c) Kevlar

#### Post this entry form to:

Hi-Fi Choice Competition (CHFC 0004A)

Future Publishing Ltd, 29 Monmouth Street, Bath, BA1 2DL

All entries must arrive by First Post, Thursday, 27 April 2000.

Please remember to tell us whether you are over 18 years of age.

Name \_\_\_\_\_

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Address (inc. postcode) \_\_\_\_\_

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Day-time Telephone Number \_\_\_\_\_

Please tick here if you are under 18.

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

Please tick one only of the following:

Are you a current subscriber? OR

Are you a regular reader? OR

Are you an occasional reader?

#### COMPETITION RULES

- 1) The closing date for the Monitor Audio competition is First Post, Thursday, 27 April 2000.
- 2) Winners of the Monitor Audio Competition will be judged from all correct entries submitted, and drawn at random after the Closing Date given in 1) above.
- 3) All winners will be notified by post.
- 4) The Editor's decision is final and no correspondence will be entered into.
- 5) The Monitor Audio Competition is not open to employees of Future Publishing Ltd, Monitor Audio, their suppliers, agents or associates.
- 6) We regret this competition is open to UK residents only.
- 7) No cash alternatives will be offered.
- 8) We reserve the right to substitute alternative prizes with equal value to those shown, in the unlikely event of stock being temporarily unavailable.
- 9) By entering the competition, you agree to be bound by the rules.
- 10) All entries must be on this official entry coupon. If you do not wish to cut your magazine, you may send a photocopy of the page instead. Please note: only one entry form per household.

**CHFC 0004A**



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TOP PRIZES  
WORTH  
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## PMC FB1 £1,000

*Tim Bownern finds joy in a floor-standing 'monitor' from PMC.*

**F**or a music fan it's a logical aspiration: a pair of genuine monitor speakers like the ones used in the studio when the music was recorded. If that's your dream it's now more attainable than ever, as an increasing number of professional manufacturers are branching out into the domestic scene. Some are more successful than others – not all so-called 'monitors' are neutral and transparent, which rather defeats the object. What's more, some of them are so damned ugly not even the most hard-bitten audiophile would give them house space.

PMC falls firmly into the 'successful' camp. Its speakers have been used to mix major albums and blockbuster movies, and if the ads are to be believed then Robbie Williams now owns the PMC he's always wanted. We love the new LB1, reviewed in *HFC199*, and the TB1 'bookshelf' monitor has done sterling service as a reference speaker in our office listening room. Now there's the FB1, a speaker that takes the TB1's essential ingredients and puts them in floorstanding form.

The FB1 was developed for domestic use, so an attractive, well-proportioned cabinet was vital. It's a metre tall and finished to the level buyers now expect, with neatly rounded edges and five real wood veneer options. It's two-way, pairing a doped paper-coned 170mm main drive unit with a 25mm aluminium dome tweeter.

Transmission-line loading is used in place of the more common reflex type, each cabinet incorporating a folded chamber with an effective length of around three metres. The mid/bass driver is positioned about a third of the way along the chamber. An approach that when implemented well gives exceptionally deep yet controlled bass.

### SOUND QUALITY

I went straight from a pair of Dynaudio Contour 1.8s to reviewing this speaker, and a quick-hit audition might find the PMC a little dull in comparison. Patience reaps rewards, however, for the FB1 pulls the listener into music over time. It is endowed with genuinely deep bass, that's not the slightest bit overblown, and plays music with pace and wonderfully understated panache. Its character is essentially neutral, with a laid-back yet deliciously transparent midband coupled to treble that's crisp but not at all metallic, despite its metal-domed origins.

I listened to a dozen CDs with the FB1 and each was handled in the same even-handed manner. It treats music with gentle respect yet sounds riveting; its soundstage is deep and broad, and the way it handles voices is captivatingly real. For some there may be the feeling that it keeps music at arm's length, but there's abundant listening pleasure wrapped up in there too. A great way to spend £1,000.

★★★★★

☎ (01707) 393002



**Puccini Remote:**  
lovely filts.

## AUDIO ANALOGUE Puccini Remote £575

*Tim Bownern gets a little bit cosy with an ear-friendly Italian. Oh yes.*

**I**n recent times, Italian brand Audio Analogue has done pretty well in the UK. That's largely down to the £475 Puccini, an attractive, musical-sounding amp that continues to impress critics and punters alike. Its warm yet expressive sound is deserving of accolade, although we were less enamoured with its big brother, the £635 Puccini SE.

Now a third Puccini has entered the fray. Moving with the times, it is the first to offer remote control and is supplied with the most scrumptious handset I've seen in a while. Cast from stainless steel, it's weighty and hugely tactile; you can be sure it doesn't come cheap. It's bound to account for a substantial part of the £100 you're paying over the standard Puccini, so consider your priorities before making a purchase.

Upgrades under the lid include a bolstered power supply, with power output increasing from 40 to 45 Watts per channel, and a few tweaks to circuit components at key points – resistors, capacitors and the like. A pre-out socket has also been added.

The last change is to source selection. A standard rotary control has been replaced by a spring-loaded selector; each twist to left or right moves up or down the input menu, as denoted by a line of LEDs. Build quality is all we've come to expect, with a sturdy steel case, thick aluminium front panel and a thoroughly well-finished feel overall.

### SOUND QUALITY

I'm a fan of the standard Puccini. It's one of the most musical amps available for less than £500. But that doesn't mean it's perfect, and some may interpret its rich (if punchy) bass as a failure to effectively resolve pace and timing. Much the same is true of the Remote, though it has a bit more 'oomph', and its price tag pits it against some very capable models.

This amp's appeal lies in its ability to sound warm and inviting yet present music with presence and detail intact. Its midrange is full of energy and substance, coupled with a bass that's fulsome and organic in character. Treble is lively, but perhaps its best attribute is an ability to plant a deep, vivid sonic image firmly between the speakers.

It sounded gorgeous playing Lambchop's acoustic lilt, and fans of symphonic and operatic styles will revel in its musical flow, but it doesn't suit all speakers. It works well with high quality 'bookshelf' models but comes a cropper with floorstanders, delivering a rather plodding low frequency performance. A decent phono stage should attract turntable users, but unless you really need remote control, and hanker for that handset, the original may prove the better value option.

★★★★★

UKD Distribution ☎ (01753) 652669

TB ♥  
PMC FB1.



## SONY DVP-S525 £450

Lee Dunkley looks at the CD-playing talents of a mid-priced DVD player.

**W**ith DVD player prices falling, more people are swapping their CD players for models that play video too, giving home cinema, multi-channel music and two-channel stereo from one box.

Sony's DVD player line-up currently features seven models, headed by the DVP-S7700 which was Recommended in HFC 198. Its new mid-price player, the DVP-S525, comes with built-in Dolby Digital and MPEG-2 decoders, plus dts digital output and analogue audio socketry for traditional stereo and 5.1 channel outputs. For video, there are two Scart sockets, one of which gives RGB component video, S-Video and composite video output.

Aesthetically the Sony may be a bit on the dull side, but its technical specification is as shiny as any, with ten-bit video conversion and 24-bit/96kHz audio DACs. It has a tilted transport mechanism that automatically optimises the player's performance for each disc, but surprisingly, the Sony is unable to cope with CD-R and CD-RW discs.

On-screen menus are clear and intuitive and set-up is quickly achieved. The alphanumeric front panel display provides a useful track calendar and is brightness-adjustable and extinguishable.

Functionality is impressive, with rapid disc reading of table of contents and track access times beating some more expensive models. Track programming, random play and repeat functions make useful CD functions and the neatly styled remote provides convenient every day control that also operates same brand TVs.

### SOUND QUALITY

An extremely competent performer, the Sony is smooth and efficient in its handling of DVD-Video, CD and dts discs. Overall the player sounds clean and dynamic and delivers the big movies with gusto.

A capable CD player as well, the 'S525 gives an enjoyable two-channel performance but ultimately lacks the transparency and spaciousness of other players or dedicated CD sources. A relaxed sounding player, high frequency detail seems veiled and presents CDs with a rather flat, two-dimensional soundstage. Bass lines are strong and rhythmic, but can sound bloated and sluggish, the overall musical balance muddled and unnatural.

But such criticisms should be taken lightly considering the DVP-S525's all-round performance, which includes good picture quality, a penchant for movie surround and extensive facilities. As a CD player it is enjoyable and musical to listen to, but may ultimately prove to be a little too laid-back and unrevealing for the audio-first crew.



Sony ☎ (0990) 111999



## HEAT SEEKERS

Vivanco FMH 7780: roamin' in the home.

## VIVANCO FMH 7780 £70

Look mum, no wires: Lee Dunkley tests Vivanco's cordless FM headphones.

**H**eadphones to roam around the home without interference? That's what German audio accessory specialist Vivanco had in mind when it introduced the FM cordless headphone in the mid '90s.

The '7780s, costing £70, are the latest model in the company's range to offer personal sound from a hi-fi or TV to anywhere in the home or garden without a restrictive cable. The 'phones have a built-in receiver that detects the 86.3MHz signal broadcast from a small transmitter connected to an audio system or TV. Fitted with two AAA rechargeable batteries, the 'phones claim to give about ten hours use between charges.

A closed-back design with ear-piece volume control, the Vivancos are built from lightweight moulded plastic in an appealing metallic silver and black finish.

Weighing in at just 130g, the 'phones are comfortable on the head with supra-aural ear cushioning and double headband with a stretchy inner band. No adjusting tension, no fiddling, just instant comfort.

The table-top transmitter can be hooked up to a 6.3mm or 3.5mm headphone socket or line-level phono outputs. A useful LCD shows output signal level and battery status.

### SOUND QUALITY

Find yourself an interference-free spot and these 'phones are an enjoyable listen with anything from classical to pumping dance and rock. They have a rather pleasing, but synthetic, character, with good, but not particularly controlled, bass and a smooth treble. It's important to remember, however, that the money is spent on the cordless technology as well as sound oriented engineering.

An overriding factor is the rather distracting background hiss and the headphones' susceptibility to noise level fluctuations when you're moving around. Activating the interference-killing 'auto-tuning' circuit did little to improve matters, but experimentation with transmitter siting gave more satisfactory results.

It's important to connect the transmitter to an adjustable output: too high an audio level and the Vivancos' 'automatic input signal adjustment' circuit cuts in and can result in level limiting, which has a pumping-type of effect, and creates distortion during louder passages of music. Therefore, listening at a lower level gives greater dynamic headroom for coping with musical peaks.

If they're carefully set up, these headphones pay musical dividends, and their freedom from restrictive cables makes even the most mundane chores much more pleasurable.



Vivanco ☎ (01442) 403020



DVP-S525: smooth and efficient.

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**DYNAUDIO**  
AUTHENTIC FIDELITY



# DAVID VIVIAN

**David goes back to his roots, realises they're overrated, and decides to go for big-buck boxes instead. Some of the time.**

**N**ot quite sure what's happened, here, but when I started writing for *HFC* a few years ago, my avowed mission was to champion all things affordable. My line of reasoning was that hi-fi shouldn't be a money pit; that the price point at which diminishing returns kicks in had been falling steadily for years. So why spend more when there's so much neat kit that won't bankrupt you?

Easy for me to say. And you're right to be suspicious. I should have turned down the expensive loan equipment and be running a system worth no more than, say, £1,500. I think Ali G would call it "keeping it real".

eclipsed by newer, cheaper kit any time soon (not always the case with CD players and speakers), it will almost certainly look and feel terrific and, perhaps best of all, it will render the whole upgrading process that much simpler, allowing you to hear what your next prospective purchase really sounds like and is capable of.

Having bought your dream amp, though, don't sweat it over partnering kit. The assumption that an £8,000 amp combo will only deliver in the context of, say, a £15k system is wrong. At least it is these days. This is where all that tasty, high-value hardware comes spectacularly into its own.

**"Having bought your dream amp, don't sweat it over partnering kit. The assumption that an £8,000 amp combo will only deliver in the context of a £15k system is wrong."**

Well, I haven't. The Chord amps I've been listening to for the past few months are worth more than £8,000. That's a Toyota Yaris. What's more, I had a hunch before they arrived that they'd sound so good I wouldn't be able to use the "ah-ha, nice casework but you can get the same sound quality for half the money" defence. You can't. They're worth every penny. In a way, I wish I could say otherwise – with some other so-called high-end amps I probably could – but there's a crucial difference between sussing out great value and believing in fairy tales. If nothing else, the Chords have nudged me towards a better sense of perspective. In the end, one axiom holds true: you get what you pay for.

But the good news, I reckon, is that if you're the least bit serious about your hi-fi, an amp of the Chord's calibre is worth sweating blood to acquire, whatever your aspirations might be. I hear the rustle of raised eyebrows. Let me explain. A top amp is a deeply cool thing to own. As I've already mentioned, its towering sonic performance is unlikely to be



**The wallet-friendly mX2s (above) will sound great on the end of a gleaming superamp like the Chords (left).**

What I'm about to say, I do without a quiver of hesitation: as a front end, a good £1,000 CD player will hack it. You may even be able to wing £500, so let's split the difference with the Musical Fidelity X-Ray at £800. No, it won't stretch the amp like a seven grand Wadia would, but that can come later. What the MF does have is a pretty immaculate, high res sound with a decent helping of high-endish warmth and space. Storming.

It's what comes next, though, that really pushes ownership of a mega-amp from the realm of the unthinkable to the tantalisingly accessible. Because, whisper it who dares, you can stick a genuinely cheap (yes, profoundly inexpensive) pair of boxes on the end of the speaker cables and breeze a sexy result. For me, this has been the real eye-opener of my time with the Chords.


It works like this. Fierce competition has turned the £150-£200, standmounted, two-way speaker (always a keenly judged product) into a modest phenomenon. The likes of B&W, Mission, Acoustic Energy, Monitor Audio, Tannoy and KEF are engaged in a grizzly and escalating struggle for ascendancy. The consequences are almost absurd – beer budget (practically loss-leader) boxes that perform extremely well in conventionally price-balanced systems, yet soar way beyond expectations when hooked up to a

300-Watt behemoth and stubbornly refuse to let the side down.

To round off our notional Amp-based, entry-level, high-end system, a few words about Tannoy's latest shot, the £150 Mercury mX2. Rash judgements first: with its fine build (made in Taiwan), funky, white bass-mid driver and classy-looking fabric dome tweeter, Ikea-friendly blonde wood finish and silver-grey grille, it looks and feels as good as many a speaker at twice the price, if a little lightweight. On a meaty stand, preferably silver to go with the grille, I'd wager no one would ever notice you're 'slumming it' downstream of the gleaming superamp.

But their ears will betray them, too. The mX2 – an updating of Tannoy's hugely successful M2 – may not have the slam and bass extension of a pricey floorstander, but the open, coherent midband, sweet treble and crisp timing sound the business. Not that the rear-ported Tannoys are lacking low down: in a budget system the bass can sound a bit over-ripe. But something special happens when a very powerful amp gets hold of a simply engineered, easy-to-drive two-way box such as the mX2. It's called grip and it cuts straight to the heart of the music.

So eight grand for the amp, £8,950 all in. With an eye to the future, I wouldn't spend it any other way.



*every  
bit  
better*

*mercury  
mX*

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# LETTERS

Hi-Fi Choice's very own 'points of view' page, where you, the reader, can express your opinions!

## LETTER OF THE MONTH

### WEB OF INTRIGUE

What has happened to the Hi-Fi Choice Website? I first suspected something was wrong when the updates to news and equipment reviews were not made. After a while it seemed that the only contributions to the site were in the chat rooms. Recently the site was unreachable without warning, as was the Home Entertainment site.

What's going on? We are now directed to the Future Publishing home page, combining all its titles from hi-fi to mountain bikes. This is like a bookstore grouping titles under publishers. Who cares? The customer certainly doesn't. It seems I'm not viewing the HFC site

any longer. When I read a magazine, whether in print or on the Net, I want to see its identity. Right now we don't seem to be getting that. Will there still be reviews and the chat room?

Sean Seneviratne, Singapore

*The Editor Replies...* As a result of our change in publishers there was a period when the Hi-Fi Choice site was not fully operational. Now that the transition has been made everything appears to be back to normal – some formats have changed, but the reviews and chat sites are all there. If you go directly to [www.hifichoice.co.uk](http://www.hifichoice.co.uk) you can avoid the other Future titles.



### WARRANTY CONFUSION

I recently bought Yamaha's S795 DVD player from Comet. I was told this model came with a one year warranty and was advised to take out Comet's own extended warranty, giving me five years cover.

January's HFC stated this model came with two years warranty. Confused, I called Yamaha, which confirmed that it did indeed come with a two year warranty.

I went back and spoke to the store manager. He wasn't able to help, so I called Comet's head office. They told me that in buying in this model from Yamaha, Comet also purchased the terms of warranty and chose to sell the player with a one year guarantee.

Can they do this? If I'd known it came with a two year warranty I wouldn't have considered Comet's extended warranty.

Mrs JM Cornish, Romford

*The Editor Replies...* Yamaha tells us the DVD S795 comes with a two year warranty period which is not affected by the retailer. Comet says that it is investigating the matter, offers a full refund for the cost of the extended warranty and wishes to apologise for any misunderstanding.

### COMPONENT MATCHING

As a long-term reader and subscriber to Hi-Fi Choice, I thought it was about time I wrote to you.

Product reviews and the Directory help us pick a fine amp or CD player based on sound quality and budget. However, the main problem arises when trying to match components and build a system. Sometimes an amp is chosen not only for its sound but also for its facilities, such as bi-wiring capability. With the amp criteria met, the process moves on to a speaker that matches it perfectly in more ways than just sound.

It would help if the Directory also identified components that work well together.

Jose L Tagarro, Madrid, Spain

*The Editor Replies...* Believe it or not, this idea has already been discussed. As a starting point, our Technical Editor is devising a method for categorising amplifiers and speakers for easier system building and component matching. Watch this space.

### DISTRIBUTION BLUES

I've been buying HFC for almost eight years. Committed? You bet. Just to let you know, the last edition never made it to the shelves in the Cheltenham area. Is this a by-product of the sale of the title? I was a bit jittery until I got a copy

in London. Hope things get back to normal with the next issue...

Now that I've got your attention, how about a regular feature on a reader's high-end system? Nothing too 'anoraky', but something we can identify with. Take a leaf out of this month's Car magazine featuring a Porsche 911 Turbo – real dream stuff – not some awesome DIY supercar with a jet engine and navigation control from the Space Shuttle. Get my drift?

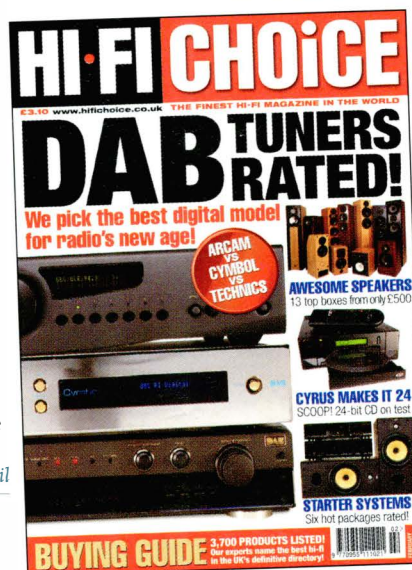
Peter Thompson, via e-mail

### WOT NO BOSE?

I am considering buying Bose Acoustimass speakers due to pressure from my wife relating to the size of my current Gale speaker units. The Bose speakers are very small and pass her criteria for suitable living room furniture. I have listened to the AM 5 package and thought they sounded very good. However, when I try to get any information on them I am unable to find any reviews. Why is there a lack of such information? Is there a problem with Bose?

Any comments on the AM 5 and AM 10 systems would be welcome.

Gavin Henderson, via e-mail

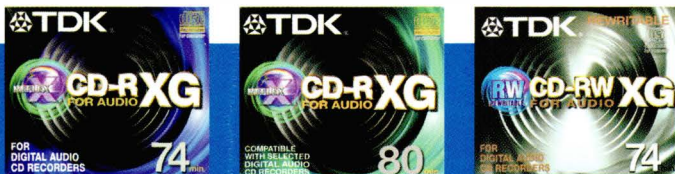


### That lesser spotted HFC 199 in the flesh.

*The Editor Replies...* It's been a good few years since we've seen anything from Bose in these pages, but we have tried the AM5's predecessors, which although initially impressive didn't manage to sustain our interest.

### WRITE TO US

Let it all flow and send us your points of view on all that is hi-fi. The author of the best letter or e-mail wins a prize for their efforts. Get writing to: The Letters Page, Hi-Fi Choice, Future Publishing, 99 Baker Street, London W1M 1FB, or send your e-mail to: [lee.dunkley@futurenet.co.uk](mailto:lee.dunkley@futurenet.co.uk)



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at the heart of it

# ON TEST!



# SPEAKERS

Need a sturdy new pair of speakers to do your tunes justice, but a bit strapped for cash? **Pauls Messenger** and **Miller** might just be able to offer you some useful buying advice...

## THE CAST LIST

Acoustic Energy Aegis Two	£249.95
ALR Entry 2M	£250.00
AR15	£275.00
B&W 602 S2	£299.95
Castle Richmond	£249.90
Eltax Chroma	£299.00
Energy e:XL 25	£399.90
Heybrook Heylios	£269.00
Magnat Vintage 320	£350.00
Mission 780	£299.00
Musical Technology Kestrel Evolution	£314.95
Tannoy mX 3	£229.90

It might seem curious, even mildly ironic, that the cheapest speaker in the cheapest group should also be one of the larger models in the whole test. But hey, that's loudspeakers for you.

Size is only one element in a complex equation where the bigger, floorstanding speakers are often, paradoxically, at some performance disadvantage compared with their smaller, standmounted rivals. The drive units are usually similar in both cases, while the

larger box has greater potential for cabinet coloration. But on the plus side, there's no need to find extra money for a decent pair of stands, and many prefer the all-in-one aesthetics of the floorstander.

As ever, among the various hi-fi components, loudspeakers offer by far the greatest diversity of choice. That fact not only makes comparative reviewing quite difficult for the likes of us, it also makes it that much more important that the customer participates in the selection process.

While it's broadly true to say that small speakers tend to be best suited to smallish rooms, and that large speakers will tend to go louder and have more bass output, it's extremely difficult to lay down any hard and fast 'universal' rules.

Any scenario based purely on performance versus price then runs straight into aesthetic preferences. In order to work properly, loudspeakers have to be placed in such a way that they're seen as well as heard, so their physical appearance is bound to have some impact.

Real wood veneerwork naturally commands a premium over vinyl imitations, even though the latter have become ever more convincing. Physical placement, too, has a considerable impact on the sound of a speaker. How close you place it to the wall behind will have a significant impact on the midbass output of a speaker: the closer it is, the stronger the midbass, but usually at the expense of some midband coloration. Designers usually take this into account, aligning a particular speaker for a specific proximity, and our tests attempt to establish the optimum conditions. However, different rooms can vary dramatically, so it always pays to experiment *in situ* to achieve the best results.

## GLOSSARY

**BALANCE:** Most loudspeakers have a characteristic frequency balance which results from emphasising some parts of the audio range and/or de-emphasising others.

**BASS:** The lowest three octaves of the audio band – hence 'low bass' refers to the bottom octave (20-40Hz); 'mid-bass' the middle octave (40-80Hz); and 'upper bass' the 80-160Hz octave.

**BI-AMP (SOMETIMES TRI-AMP):** Loudspeakers equipped with separate access terminals to each drive unit can be driven by separate (matching) power amplifiers for each driver.

**BI-WIRE (SOMETIMES TRI-WIRE):** Loudspeakers with separate access terminals to each driver can be driven by separate cable runs between the power amp and each driver.

**CROSSOVER:** A simple electrical network which divides the full bandwidth signal received from the power amplifier, apportioning appropriate parts of the spectrum to the various drive units.

**DRIVE UNIT/DRIVER:** A transducer which converts electrical energy into acoustic energy, eg main driver, tweeter.

**FREQUENCY RESPONSE:** The range of frequencies, from low to high, which a loudspeaker will reproduce.

**IMPEDANCE:** The complex electrical load that a loudspeaker presents to the amplifier which is driving it.

**MAIN DRIVER:** A drive unit which reproduces both bass and midrange frequencies.

**MIDRANGE:** The middle three or so octaves of the audio band, where the ear is most sensitive, covering the approximate frequency span from 160Hz up to 1.5kHz.

**NETWORK:** see *Crossover*.

**PRESENCE:** Critical section of the band between midrange and treble.

**SENSITIVITY:** The relative loudness generated for a specific voltage input.

**TREBLE:** The top end of the audio band, eg above 3kHz.

**TWEETER:** Treble driver.

**WOOFER:** Bass driver.





**GROUP A** £229-£270

**GROUP B** £271-£300

**GROUP C** £301-£400

**SPEAKERS GROUP A**

£229-£270

Only the two floorstanders, from Tannoy and Acoustic Energy, can properly be called 'budget' loudspeakers, since both are based closely on standmounting models costing about £150. Both are sourced from the Far East, to the best of our knowledge, and are vinyl-clad, which probably contributes to their competitive prices. The other three models are standmounts, vinyl-covered in the case of the ALR, but with real wood from the little Castle and rather larger Heybrook. The latter actually rated a Best Buy when it cost £70 more, some three years ago.

Acoustic Energy Aegis Two	£249.95
ALR Entry 2M	£250.00
Castle Richmond	£249.90
Heybrook Heylios	£269.00
Tannoy MX 3	£229.90

**SPEAKERS GROUP B**

£271-£300

Three standmounts and one floorstander here, and they don't have much in common apart from their prices. The vinyl-finish AR and the real-wood Mission are in practice more obviously direct competitors to Group A's Castle, Heybrook and ALRs than the larger standmount B&W 602 S2, or the even larger floorstanding Eltax Chroma.

Where the B&W makes no concession to fashion, with a size, shape and driver configuration that go back through the mists of time, the Chroma's shiny black finish and silver driver diaphragms are all about style, and carry a surprisingly affordable price tag.

AR15	£275.00
B&W 602 S2	£299.95
Mission 780	£299.00
Eltax Chroma	£299.00

**SPEAKERS GROUP C**

£301-£400

There are just three models in the top price group, and all are floorstanders – although again, that's more or less where the similarities end. For sheer bang for your bucks, the Magnat Vintage 320 must be one of the best deals around: it's certainly the biggest and heaviest in the group, and also has the largest main driver area.

The Energy also has two main drivers, but is altogether more discreet and compact, while Musical Technology's Kestrel Evolution is much closer to a miniature in concept, albeit in an elegant and effective floorstanding package.

Energy e:XL 25	£399.90
Magnat Vintage 320	£350.00
Musical Technology Kestrel Evolution	£314.95



**HINTS & TIPS**

The rules for getting the best out of a pair of speakers are much the same whatever models are involved. Standmounts require proper stands to ensure stable, predictable support and get the drive units the same distance off the floor as your ears. (Choice of stand can have a big influence on the sound.) Floorstanders should have spikes fitted carefully – this is a potential weak spot in cheaper models. Finding the right place to put the speakers (with respect to the room walls) is just as important. Our reviews include suggestions, but every room is different, so do take time and trouble experimenting. And don't forget to use decent speaker cable.

**HOW THE TESTS WERE DONE**

The unsighted listening tests were carried out in a room which is a little larger than average – 5.5x4.2x2.6m (LxWxH) – but not excessively so. The speakers are installed one pair at a time behind an acoustically transparent curtain, and positioned according to the results obtained from a series of sine-wave sweeps taken in the room across the listening arc. Each presentation takes roughly half an hour, covering as broad a range of music as possible, split evenly between vinyl and CD sources.

Care is taken to try to match the relative volume of each speaker, although

differences in frequency balance, bass extension and room drive unavoidably get in the way; if possible, grilles are removed to take account of the mild influence of the black net curtaining.

The tests were spread over two days, allowing for a number of repeat presentations. Extensive hands-on listening was carried out over about two weeks, allowing ample opportunity for further experimentation in positioning and alternative ancillary components.

The main reference system used for the test work consisted of the usual collection of Mana-supported Naim and

Linn components: Linn LP12 turntable, Naim ARO tonearm, Linn Arkiv B cartridge, Naim CDS CD player, NAT01 tuner, NAC52 preamp and NAP135 power amps.

Mana Stealth MA-1 monoblock power amps were also used. Speaker cables were NACA5 and Nordost SPM, and speaker stands were primarily Kudos S100s.

All published measurements were taken on the QC Suite v3.1 high-speed functional testing station.

Our usual fulsome thanks to this month's panellists: **DAVID INMAN** (Castle), **GARY MARDELL** (Gamepath),

**ANDY WHITTLE** (Exposure), **KEN WELLER** and **TOM O'BRIEN** (B&W), **DANNY HAIKIN** (Grahams Hi-Fi) and **KEITH HADDOCK**. (REL) **WHAT MUSIC DID WE USE?**

**WAITING FOR COLUMBUS** – Little Feat

**TERRAPIN STATION** – Grateful Dead

**IN THE WORLD** – Olu Dara

**EALLIN** – Mari Boine

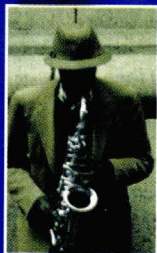
**THERE IS SWEET MUSIC** – Cambridge Singers/Rutter

**UIRAPURU** – Villa-Lobos/Stokowski/  
Stadium Sym Orch New York/Everest  
BBC Radios 3 & 4 were also used.

CAPTURE

# The Essence

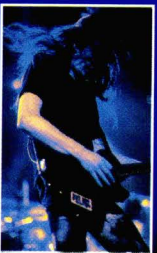
...the essence of a live performance, the passion... the power... the excitement. You just can't beat it!



But you can come close, that's why you own a hi-fi system. That's also why you need to use the very best cables you can afford, because only then, can you be sure that your system is being allowed to work to it's full potential.



We at QED recognise that the only way to ensure the best results, is to **insist on an unparalleled level of signal accuracy**. To prove this, we undertook one of the most comprehensive studies ever undertaken, on how and why cables effect system performance\*. Not that you need to worry about the technicalities, all you have to do is enjoy the results!



\*A summary of this research "The Genesis Report" is available on request.

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## Genesis Silver Spiral

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"Clarity is the name of the game here and if the information is there... you can be sure this cable will let it all through... detailed treble coupled to weighty and tight bass, ensures a dynamic and exciting performance... Genesis performs so well it's certainly worth the money."

-BI-WIRE VERSION NOW AVAILABLE-

## QED Silver Anniversary

Price around £5.00/m



"An Award winner for the second year running, this cracking little cable offers a sniff of the high-end when it comes to detail and purity, and does so at a bargain price. Used in a good system, this wire can truly amaze."

-BI-WIRE VERSION NOW AVAILABLE-

## Qunex Silver Spiral

Price from £78.00/pair



"Music is presented in a natural and unforced manner... Silver Spiral excels in detail and dynamics...If your looking for an interconnect...Silver Spiral deserves to be at the top of your shopping list."

## Qunex 2

Price from £27.00/pair



"Qunex 2 was one of the best-liked cables in the test. Qunex 2 fully deserves a Best Buy."

"Great price, great cable, well made. Nifty name, neat plugs. Five stars. Next..."

# ACOUSTIC ENERGY Aegis Two

The Aegis range is Acoustic Energy's very serious tilt at the true budget speaker sector, while retaining styling cues and the metal main driver cone familiar from its more upmarket models. The two-way, stand-mounted Aegis One (£150) was confidently Recommended in *HFC* 187, while the three-way floor-standing Aegis Three (£350), featured as a recent *Heat Seeker*, is an even more enticing prospect.

Enter the £250 Aegis Two, a two-way floor-stander which splits the price difference between the One and Three. But does it also split the performance envelope? Not exactly. The Aegis Two is actually a Aegis One sitting on an integral, matching, vinyl-wrapped, mass-loaded stand. It's actually a sensible and not uncommon strategy to take a proven two-way standmount and re-package it as a floorstander, because many allegedly prefer the aesthetics of a coherent floorstanding enclosure to a small box on a stand.

Given that you can buy some very respectable stands for rather less than the Two's £100 price premium over the One, it seems unlikely the Two will match the

One for sheer value – but I'm sure that for some customers the aesthetics will still weigh sufficiently heavily in its favour to offset such considerations.

The wrap is finished in vinyl woodprint (cherry on our samples, with rosewood or black alternatives), while a black textured front part-baffle with heavily chamfered edge stands proud of the box proper, adding extra strength but doing little for the aesthetics.

Supplied already mass-loaded, the total weight of 16kg ensures good stability when set on its spikes, despite the modest footprint.

The main driver's 100mm matt-silver metal alloy cone has to be a key selling point, coming complete with the pointy little black metal dust dome that has become an AE trademark, but here it's mounted in just a regular pressed steel basket. The tweeter uses a 25mm soft fabric dome, and a flared port

is mounted on the back panel, along with a single terminal pair. The drivers are both flush-mounted, and the grille looks acoustically innocuous.

The in-room, far-field averaged responses definitely point towards free-space siting, from the point of view of both bass alignment and midband smoothness. The broad midband looks reasonably smooth and flat, especially through the crossover region.

## SOUND QUALITY

The Aegis Two did well in the panel listening tests, attracting particular praise for its stereo imaging, and for its openness and clarity, with fine detail projection. The bottom end showed generally good control and evenness, although no great

seemed to struggle to keep up, especially with 'difficult' material such as the Mari Boine track.

Long term and hands-on, I found the Aegis Twos rather less satisfying. There's something of the 'domestic monitor' about the way they project detail, but there's also a distinctively 'shiny' quality that becomes a little relentless, even mildly irritating, over the long haul, while dynamic expression and drive both seem rather muted. Some of this might be down to system matching, but it does indicate that some care should be taken to ensure that the speaker works well on the end of the chosen components.

## CONCLUSION

The Aegis Two is a good all-round speaker at a competitive price, but there's no avoiding the observation that a pair of Ones on budget stands is likely to have the edge, on both performance and price. Nevertheless, the Twos clearly merit Recommendation, with a 'try before you buy' qualification regarding system matching. **PMe**



## THE LAB REPORT

The axial response of the Aegis Two shows a 2-3dB drop in output immediately after the 3.2kHz crossover point (with some complex conebreak-up modes immediately before), while the treble really begins to pick up above 6kHz or so. This is sufficient to account for the slight difference in quoted and 'real' sensitivities of 88.5dB and 87.7dB, respectively. Either way, it's good to see that AE has modified its original '90dB' specification in the light of our Aegis One review (see *HFC* 187). Fortunately, the third-octave in-room responses suggest the speakers will sound rather better integrated through mid and treble, even though the bass is

potentially rather prominent, implying that speaker placement is as tricky as ever.

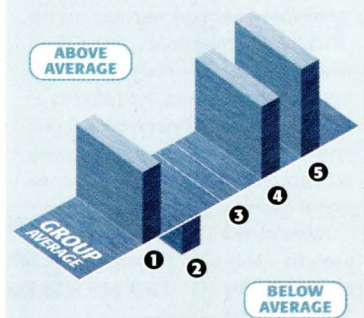
The bass is well-aligned with the driver null, impedance minimum and rear-port resonance all tuned to 53Hz. The port output is pretty clean too (unlike earlier Acoustic Energy designs) with only a small, spurious peak at 740Hz having any influence over the speaker's forward response. LF damping could be better however, so there are big 5.6-45 Ohm swings in impedance through the bass together with -40/+58° swings in phase. This is not especially 'tough', but could still influence its subjective bass quality depending on your choice of amp. **PMI**

**"The bass is well aligned with the driver null, impedance minimum and rear-port resonance all tuned to 53Hz."**

## HOW IT COMPARES

This speaker looks and measures just like an Aegis One mounted on a plinth – which, to all intents and purposes, is what it is.

1	EASE OF DRIVE	50%
2	RELATIVE LOUDNESS	-20%
3	MAXIMUM LOUDNESS	0%
4	AUDIBLE DISTORTION	50%
5	BASS EXTENSION	60%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	88.5dB	87.7dB
■ Impedance (Nominal/Mean)	8 Ohms	12.4 Ohms
■ Estimated Bass Extension	38Hz	45Hz

# ALR Entry 2M

**A** relatively new name on the scene in the UK, ALR is a German brand headed by renowned speaker designer Karl Heinz Fink, but one which also has some links to the UK through a consultancy tie-up with Ted Jordan, who was one of the pioneers of metal diaphragm loudspeaker technology some forty-odd years ago.

The Entry range is, as the name suggests, the budget collection, for those who want the ALR sound but lack the financial wherewithal for the more elaborate, real wood veneered Note models. There are four Entrys in total: the S (for small, or surround), this Entry 2M, plus larger, floorstanding 3 and 5 models.

Priced at £250 per pair, the Entry 2M is a pretty chunky stand-mount design, wide enough to accommodate a decent sized main driver, and rather deeper than average too, giving a quite generous total volume of about 13 litres.

Surface finish is an attractive vinyl woodprint on five faces, while a thick front panel (designed to maximise baffle rigidity) is finished in textured black. That said, the build feels just a little lightweight in relation to the box size, turning the scales to just 5kg, which is rather less than the Heybrook or AR models.

The main driver has a classy 120mm flared metal alloy diaphragm to handle the bass and midrange, which then passes on to a soft fabric dome tweeter to do the treble thing. A single terminal pair is fitted to the rear, alongside

a large port, tuned to around 38Hz, to augment the deep bass.

The in-room, far-field traces show unusually good bass extension for such a compact standmounter, and generous sensitivity for a metal cone device too. While the overall balance is perfectly satisfactory, it could also be a little smoother, peaking up a little in the upper midband (600Hz-1kHz) and mildly depressed through the presence region (2-4kHz).

## SOUND QUALITY

Having been asked to try to give this speaker some running in, I connected it up prior to the panel tests, and was rather impressed by its generous, good-hearted delivery, decent dynamic expression, and a surprisingly good sense of scale considering the speaker's modest dimensions.

When the time came around for the formal listening tests, however, I was disappointed by the panel's somewhat negative reaction. I resolved to run a repeat on the

second day – only to encounter broadly similar findings. The Entry 2M certainly failed to set the panel alight, tending rather to send it to sleep, most comments referring to some lack and loss of interest in the proceedings.

I have to admit that I don't entirely agree with these reactions, and continued to enjoy this speaker's good coherence and lively dynamics during subsequent hands-on work. At the same time I can neither ignore, nor on this occasion easily explain, the panel's less favourable verdicts.

## CONCLUSION

Given the discrepancy between my findings and those of the two listening panels, I can't come up with a hard and fast conclusion on this speaker. I liked it, and you might too, but the consensus

seems to point in the other direction. The basic performance envelope is rather impressive for the size, but the bottom line is that in a group context the price seems just a little on the high side for a vinyl-covered standmounter.

PMe

## VERDICT

<b>SOUND</b>	★★★★★
<b>BUILD</b>	★★★★★
<b>VALUE</b>	★★★★★
<b>PRICE</b>	£250.00

■ Metal cone standmount has a generous performance envelope, but sound quality was more controversial.

■ FIVE YEAR GUARANTEE

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☎ (020) 8642 4436

## THE LAB REPORT

**T**he averaged, axial response for the Entry 2M demonstrates a down-tilted trend with the treble energy picking up beyond 8kHz. Off-axis, the response is 'duller' still with no obvious restoration in upper treble and moreover a slight notch at 1.6kHz, preceding the fourth-order crossover at 2.8kHz.

Narrowband analysis indicates a slightly 'rippled' bass and upper bass register with prominences carrying through to 750Hz and 1,400Hz. Bass is tuned to a low frequency for the box size, with the principal port resonance at 35Hz, driver null at 40Hz and impedance minimum at 38Hz. Sadly, there's a huge (presumably) quarterwave pipe resonance

that escapes the port at around 800Hz and may be linked to the upper bass/midrange 'lumps' noted above.

The impedance minimum of 3.7 Ohms at 200Hz is one of the lowest in this test, but not especially worrisome. Distortion is usefully low at typically 0.5 per cent

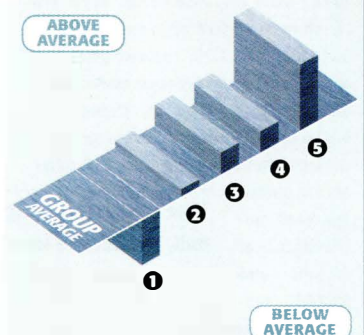
**"Distortion is usefully low at typically 0.5 per cent through the bass and 0.2 per cent through the treble."**

through the bass and 0.2 per cent through the treble, but picks up to about 2-3 per cent of third harmonic distortion across the midrange. This will add a degree of character to the sound and has been deliberately engineered by manufacturers in the past to give their products an 'edge'. But I have no evidence to suggest that's happening here... **PMI**

## HOW IT COMPARES

**A** moderately sensitive speaker with good bass extension but lacking a similarly extended treble. Big phase angles through the bass could result in a degree of amplifier-dependence.

<b>1 EASE OF DRIVE</b>	-30%
<b>2 RELATIVE LOUDNESS</b>	5%
<b>3 MAXIMUM LOUDNESS</b>	15%
<b>4 AUDIBLE DISTORTION</b>	15%
<b>5 BASS EXTENSION</b>	45%

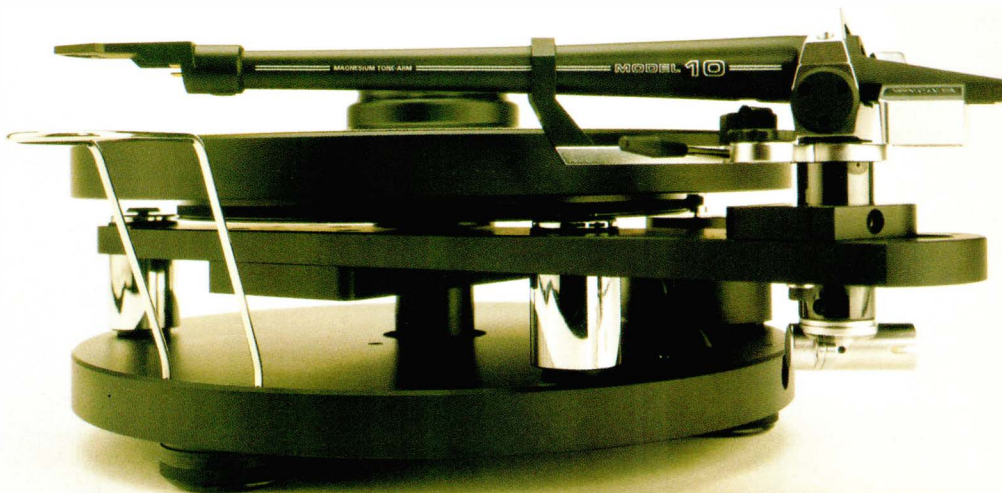


## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	89dB	88.5dB
■ Impedance (Nominal/Mean)	6 Ohms	9.2 Ohms
■ Estimated Bass Extension	45Hz	45Hz



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There's a lot to swim through

# CASTLE Richmond

Successor to the Isis, which was reviewed and Recommended some three years ago (*HFC 170*), the Richmond appeared in our recent surround sound speaker group test (*HFC 198*), where it fulfilled the role of surround speaker in the five-box Castle system.

Like all Castle models, it's finished in an attractive real wood veneer, and available in a wide range of different veneers, mostly at the 'standard' £250 asking price. But like most surround speakers, it's also a rather small affair, which is more likely to suit smaller rooms than our medium-to-large test conditions.

A two-way design loaded by a front port, with a single terminal pair on the rear, it features a classy main driver with a cast frame and a cone made from a polymerised woven carbon fibre matrix. Said cone, however, is only 100mm in diameter, which makes it one of the smallest in this group.

That said, the thing about small main drivers is that it cuts both ways. Their ability to move large quantities of air is inevitably compromised, and this will act as a constraint on the bass headroom and extension. But the small cone is more likely to preserve its rigidity towards the top end of its operating range, and the narrow source will also aid wide sound distribution and avoid the focusing effect of larger sources.

This is directly reflected in the far-field in-room responses, which show the bass end starting to tail off below 100Hz when the speaker is in free space. Placed

with backs against the wall, however, the Richmonds deliver a smooth and well-balanced bass down to around 50Hz in-room. More impressive is the behaviour further up the band, where output is impressively flat and coherent right up to 2.5kHz, with a seamless crossover and well behaved treble.

## SOUND QUALITY

Even with wall reinforcement, the Richmond's lack of bass weight and power was evident enough in the listening tests, and inevitably added a handicap to its overall scores with the panel.

At the same time, its fine mid-band coherence and a basically lively, if forward, disposition proved rather attractive, and was certainly very informative when reproducing human voices.

Commenting on the 'difficult' Mari Boine track, one panellist remarked: "Good reverb on vocals, gives an idea of atmosphere; drum lacks full extension but is dry and tight. Gets you involved; gets it together." Another noted: "It's not fazed by big transients, although there's not much low frequency extension. Tight, bright and clean; quite coherent and exciting."

That said, other listeners were a little more cautious, finding the

midband a little 'shouty' and coloured, and the treble a tad ragged, suggesting that this Castle might not suit all tastes. There's certainly a measure of character about this speaker, but at least the consensus was that it communicated well, bringing the fun and excitement of music making through most effectively.

## CONCLUSION

Clearly a speaker that's better suited to smallish rooms, the Richmond makes very good use of its diminutive dimensions to deliver an outstandingly clean and coherent midband performance, thanks to its classy carbon-fibre cone main driver.

The cabinetwork is classy too, in the established Castle tradition, so Recommendation seems to be

appropriate enough here, with the qualification that the Richmond looks like a prime candidate for use alongside a good quality active subwoofer.

PMc



## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £249.90

**Tiny real-wood miniature has a lightweight but very coherent sound – a bit in-yr-face, but plenty of fun.**

### ■ FIVE YEAR GUARANTEE

✉ Castle Acoustics, Shortbank Road, Skipton, North Yorkshire BD23 2TT  
☎ (01756) 795333

## THE LAB REPORT

The Richmond is a very surprising little speaker. Despite its dowdy appearance, it is a remarkably sensitive design, pumping out 90.1dB (re. 2.83V/1m) which is well above its 88dB spec and 6dB ahead of Mission's similarly-sized 780. In terms of straight 'loudness', that's the difference between a 20W and an 80W amp. Which is useful, because the Richmond

**"There's no attempt to provide a falsely punchy bass register, while near-wall mounting should prove beneficial."**

lacks the 780's prodigious power handling. The Richmond enjoys a very uniform axial response, with a far flatter and well controlled bass than is typical for miniatures. There's no attempt to provide a falsely punchy bass register, while near-wall mounting should prove beneficial.

Off-axis uniformity, on the other hand, is quite poor, with an overall loss of 2dB in output (200-20k) across a 30° horizontal arc. Output is especially depressed following the mid/treble crossover beyond 2.5-3kHz and will, likely as not, deplete the speaker's 'presence'. It is very important to

audition and deploy these loudspeakers spot-on the listening axis.

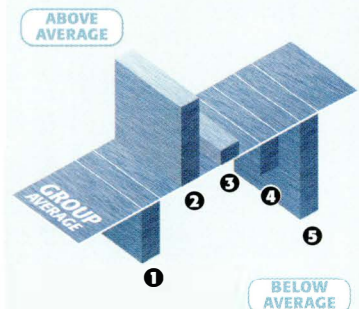
Despite the high sensitivity, distortion, too, increases through the midrange to 1.5 per cent thanks to a spray of odd-order harmonics from the woven carbon fibre bass/mid unit. Once again, the response might look 'flat' but these harmonics may still colour the sound.

PMi

## HOW IT COMPARES

A very sensitive miniature with an expertly tailored bass that's ideal for near-wall mounting. But the average 8.3 Ohm load still means the Richmond's pretty current-hungry.

1	EASE OF DRIVE	-35%
2	RELATIVE LOUDNESS	55%
3	MAXIMUM LOUDNESS	10%
4	AUDIBLE DISTORTION	-20%
5	BASS EXTENSION	-65%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	88dB	90.1dB
■ Impedance (Nominal/Mean)	8 Ohms	8.25 Ohms
■ Estimated Bass Extension	60Hz	65Hz

# HEYBROOK Heylios

Originally reviewed in *HFC* 164, the then-£339 Heylios proved a great success, earning itself a Best Buy ticket and going some way towards convincing all and sundry that the classic high quality standmount really did have a place in the scheme of things, notwithstanding the growing popularity of floorstanding speakers.

Three years down the road and two key things have changed. Heybrook has been taken over by the much larger AGI group, and production efficiencies have enabled the price to be cut – by a substantial 30 per cent compared with that quoted recently in our *Directory*. According to AGI there have been some minor changes in crossover componentry, but to all intents and purposes the new £269 Heylios is effectively unchanged in any significant way – apart from being much more competitively priced.

The shape – which somehow looks wider than it is deep (although isn't) – and the finish both have a slightly old-fashioned feel. 'Classic' is probably the official marketing term for the dark red stained, if rather anonymous, real wood veneer, decorated by beading around the baffle edge. Trendy it's not, but it should fit in very well with furnishings of a more traditional, period style.

The shape allows for a decent sized main driver, which has a moulded plastic frame and a doped paper cone about 125mm in diameter. The tweeter uses a 25mm soft fabric dome. Twin rear ports reflex-load the enclosure,

and twin terminals permit bi-wire/-amp options

The in-room responses look very promising, the careful port tuning giving an impressive combination of deep bass extension without unwanted mid-bass boom, and indicates that the Heylios is well balanced when clear of walls, but should still be able to tolerate some wall reinforcement if preferred.

The whole bandwidth is held within modest limits, with slight leanness through the lower mid-band alongside mild forwardness through the upper mid.

## SOUND QUALITY

Just as its previous incarnation had three years before, the Heylios did pretty well in the listening tests, although not perhaps quite as well; it didn't hit the top of any of our listeners' charts. "Perfectly adequate – doesn't do anything badly wrong – it's just not very exciting", was a typical comment.

The slight mid forwardness helps to create a pretty good first impression, delivering good expression without pushing so far as to create unwelcome 'shout'. It also helps to retain good voice



intelligibility at low levels, although a slight lack of 'body' and 'warmth' was noted too.

Warned that the samples would benefit from some running in, I gave the Heylios an extended hands-on workout. And while it's obviously impossible to compare these samples with those auditioned three years ago, I have to admit I was slightly disappointed by these latest examples.

This is still a good speaker, no question about it, but it doesn't seem to have quite as much dynamic freedom and bottom-end drive as I expected.

## CONCLUSION

Given that this Best Buy speaker has just enjoyed a massive price cut, it's pretty obvious that the Best Buy rating should stand. Even though the sonic performance

didn't stand out quite as obviously as with those originals, it still delivers plenty of the goods for the money, and offers a real wood veneer at a very reasonable price, in a style with particular appeal to traditionalists. **PMc**

## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £269.00

Classically styled standmount has a fine balance of smoothness and dynamics, plus real wood veneer on the cheap.

■ TWO YEAR GUARANTEE

☑ Audio Group International, Language Science Park, Plymouth, Devon PL7 5HJ  
☎ (01752) 333800

## THE LAB REPORT

Everything we said about Heybrook's Heylios in March 1997 appears to hold true for the 'new' Heylios in April 2000 – except, of course, for the drop in price. Once again, the Heylios' averaged response looks smooth enough, albeit with a slightly uptilted treble, even though a narrowband analysis indicates the two drivers could be better integrated about the 3.3kHz crossover point. Both miniature ports provide a low-Q reinforcement centred about 60Hz, although this is de-tuned (to provide some subjective bass emphasis) from the driver null and impedance minimum at 36Hz.

This broad port output extends to

380Hz, after which there is some interference from quarterwave and other resonances beyond 500Hz. Add to this a moderately high 1.5-2.0 per cent upper bass/midrange distortion (re. burst 96dBA output) and you've a recipe for colourful – if not entirely faithful – sound. Sensitivity, meanwhile, is fractionally higher at 87dB, while the 5.85 Ohm

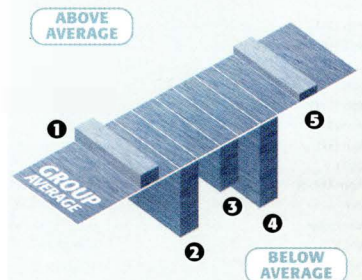
impedance minimum remains broadly distributed from 150-450Hz, and although the average is only 8.7 Ohms over the entire bandwidth, at least the phase angles are kept within +/-30°. As a result, the Heybrook Heylios remains a pretty easy speaker to drive. **PMi**

**"The Heylios' averaged response looks smooth enough, albeit with a slightly uptilted treble."**

## HOW IT COMPARES

Any small differences observed between this Heylios and the model first reviewed three years ago are the result of component tolerances and changes to the production regime.

- |   |                    |      |
|---|--------------------|------|
| 1 | EASE OF DRIVE      | 10%  |
| 2 | RELATIVE LOUDNESS  | -45% |
| 3 | MAXIMUM LOUDNESS   | -30% |
| 4 | AUDIBLE DISTORTION | -55% |
| 5 | BASS EXTENSION     | 5%   |



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	88dB	87dB
■ Impedance (Nominal/Mean)	6 Ohms	8.65 Ohms
■ Estimated Bass Extension	50Hz	48Hz

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# TANNOY mX 3

**W**hat's an mX? I wondered, when this new speaker turned up. I hadn't heard about any new Tannoy's, probably because the company recently dispensed with the services of its PR agency, but this mX-series is probably the most significant loudspeaker launch of the past twelve months.

That's because the mXs are effectively the replacements for the Mercury M-series which has dominated the sales charts over the past two or three years. They look virtually identical to their predecessors (why risk changing such an obviously successful formula?) and hit exactly the same retail price points as their predecessors, but have actually undergone a number of changes. These are mostly in the fine detail, but also include moving production from Eastern Europe to the Far East – not that one would really notice from a cursory inspection.

This mX3 therefore retains its highly competitive price tag, which makes it the least expensive model in the

group (despite being a floor-stander and avoiding extra outlay on stands). It uses the same drivers as the £149 mX2, but in a larger, port-loaded enclosure.

Naturally enough a no-frills package, while the vinyl woodprint looks quite convincing, it falls down badly on 'strokeability'. The mX3 comes in 'light maple' (our samples) or 'nearly black', and

features a silver-grey grille cloth, which makes an attractive change (but could prove the devil to keep clean long term, I suspect). The drivers are now flush-mounted into the front panel, smoothing the baffle and adding some class.

The port-loaded main driver enclosure doesn't use all the box, and access is provided to the lower cavity for adding mass load-

ing. This is probably worth pursuing, because the small spike footprint makes good stability tricky to achieve. The joinery uses tongue-and-groove joints, plus internal bracing and mass damping.

The main driver has a strikingly white, modest 110mm treated paper cone, mounted in a moulded plastic frame. The tweeter is a 25mm soft dome device. Twin terminals permit bi-wire/-amp operation, and foam plugs are supplied for blocking the port.

However, our in-room measurements suggest these bungs are unlikely to be needed, except perhaps if the mX3s are used close to a wall in a smallish room. In our larger room the bass balance was quite dry even with port loading, indicating that some wall reinforcement may be helpful.

## SOUND QUALITY

The mX3 didn't particularly distinguish itself from the herd in

the blind listening tests, but it did comfortably pass muster, which is a creditable result in view of the very modest price. It also delivered the sort of sound quality that's likely to work very well in a budget system context.

The mX3's main strength is a beautifully voiced midband, which is both informative and relaxingly easy on the ears, and always somehow invites you to keep on listening. The sound is a touch 'shut in', to be sure, but it remains coherent and has just enough dynamic literacy to convey a measure of subtle vocal and instrumental expression.

## CONCLUSION

By absolute standards this may not be a great loudspeaker, but in a market context it does represent excellent value for money.

The scale of the sound doesn't quite match up to the size of the box, but fine midband voicing and expression means the mX3 is always entertaining and enjoyable, and a deserved Best Buy. **PMe**



## THE LAB REPORT

**T**annoy's new box is not the most sensitive in the group at 88.2dB (re. 2.83V/1m), but its decent power handling will permit a real crack at high-level dynamics. You'll need a big amp (100-150W), not least because there are -40 to +60° phase angles from 730-2.5kHz and a 4.2 Ohm impedance minimum at

220Hz for it to tackle. The **"Tannoy's new box isn't the most sensitive here, but its decent power handling will permit a real crack at high-level dynamics."** and treble Ohms looks

easy on paper because the overall value is bolstered by a 28 Ohm peak at 1.8kHz.

Otherwise, the averaged, third-octave, in-room response shows a downtitled response that finally re-establishes itself beyond 8kHz. A narrowband analysis confirms this, but also shows that the ceramic

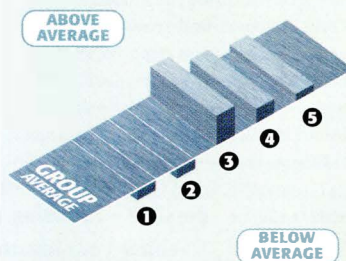
film bass/mid and soft-dome treble units are very well integrated around the (estimated) 3kHz crossover frequency. The gentle trend becomes progressively apparent as the speaker is shifted off-axis, implying that a precise, axial listening position is essential if they are to give of their best.

Distortion decreases in the midrange and treble frequencies, finally falling to 0.2 per cent even if, at low frequencies, compression causes a marked increase in THD (to several per cent) if the bass driver is pushed much beyond 94dB. This is a bit disappointing, given the mX3's moderate 88dB sensitivity and otherwise well executed bass alignment. **PMi**

## HOW IT COMPARES

**A** gentle balance gives this speaker an air of caution and while healthy dynamics are possible, the high levels of bass distortion do not augur well for all styles of music.

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



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	89dB	88.2dB
■ Impedance (Nominal/Mean)	8 Ohms	10.4 Ohms
■ Estimated Bass Extension	35Hz	50Hz

## AR15

A famous American name from the early days of hi-fi, Acoustic Research has been through plenty of changes, and received only sporadic UK distribution in recent years. The brand was brought here under the Recoton flag (one of the largest hi-fi groups around) before being passed into CSE's distributive care, and this historical doyen of the East Coast sound now operates out of a Californian head office.

AR's roots lie in the introduction of the 'acoustic suspension' principle and sealed-box loading, a technique which was particularly relevant in the vinyl era, but which is arguably less useful now that CD has become the main music carrier. Today the overwhelming majority of speakers use reflex port loading, and this new £250 AR15 is no exception. However, it does follow one other tradition for compact ARs, in being intended for 'bookshelf' or close-to-wall mounting, which is one reason the port is on the front.

It's part of a new ten-model range, collectively dubbed 'Hi-RES', whose benefits were extolled in a 16-page 'white paper'. But since this is just a two-way tiddler in the overall scheme of things, many of those features don't apply. However, it still has the "plasma-transferred, diamond-hardened titanium tweeter", plus the contiguous magnesium alloy main driver cone.

Happily there's insufficient space here to elaborate on the white paper contents, much of which seems to be devoted to dissing engineering techniques

speaker designers have been using for years.

A small-to-medium sized stand-mount, the AR15 is unusual in being as wide as it is deep, giving a chunky appearance (but also allowing said 'Magalloy' cone to be a decent 115mm in diameter). It also feels about 50 per cent heavier than you expect from its bulk – an observation confirmed by the 7kg all-up weight – indicating that extra effort has gone into providing really beefy build quality, and probably a good sized main driver magnet too.

The in-room, far-field response shows a classically well-damped bass alignment clearly intended to benefit from close-to-wall midbass reinforcement. The bass-through-midband balance is very well ordered down-tilting above 1.5kHz in a smooth and gentle manner. However, above 5kHz the treble looks far from smooth or 'pistonc'.

## SOUND QUALITY

The 15 gave a very respectable account of itself in the listening tests, albeit without particular distinction, and to some extent reflecting the panel's reaction to

the inevitable mid-band colorations of a wall-mounted design.

What was appreciated, however, was the solidity of the sound, its good coherence and timing, decent dynamic expression and wide dynamic range, all of which come together to give a surprisingly 'big' sound from such a modest enclosure.

In short, this is a good-hearted speaker which responds particularly well to driving rock material. The downside, however, is a degree of midband 'hardness' and top end 'raggedness', noted by some listeners.

## CONCLUSION

Weighing up all the pros and cons of a speaker design and putting them into an equation with its price and marketplace context is an invariably difficult task. The AR15 is a competent, capable and

rather entertaining loudspeaker, which is very solidly built and really knows how to rock'n'roll. On the other hand, it's not quite as convincing on more delicate acoustic material, and is quite pricey for a vinyl-covered box of this size. **PMe**

## VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£275.00

Neat and chunky wall/standmount certainly knows how to rock'n'roll, but is slightly less convincing on the delicate stuff.

## FIVE YEAR GUARANTEE

CSE, Unit 9, Centre Park Holdings, The Airfield, Tockwith, YO26 7QF  
(01423) 359054

## THE LAB REPORT

Despite appearances, the closest technical rival to AR's new model 15 is the Castle Richmond. Both speakers promise a very uniform in-room response, although the AR15 has the more aggressive bass, and both speakers offer a very high sensitivity. Indeed, the AR15 clocks up a massive 91.1dB

(1dB more than its conservative 90dB/2.83V/1m specification) which, with its healthy 150W power handling, means peaks approaching 108dB could be possible in a domestic environment – assuming that you've no respect for either your hearing or neighbours. However, like the Richmond, the AR15 suffers from a poor off-axis uniformity with a 4-5dB slump in

output beyond 3kHz once you move 30° off the horizontal axis.

Unlike almost all other small speakers, the AR15 is blessed with extremely low levels of bass distortion – achieving 0.17 per cent at 200Hz/96dBA, thanks largely to the combination of high sensitivity and the

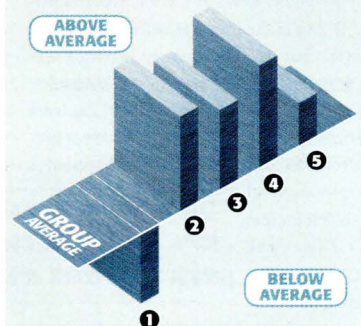
**"Peaks approaching 108dBA should be possible – assuming you've no respect for either your hearing or neighbours."**

rigid aluminium alloy bass/mid unit. There's a big glitch in phase at the 3.2kHz crossover point (including a -40° to +40° swing from 1kHz to 6.5kHz) with the real minima of 3.6 Ohms occurring lower down at 210Hz. The average 7.8 Ohm load is tougher than most, so if you want to get the most from this box of dynamite, a beefy amp is a must. **PMe**

## HOW IT COMPARES

A very sensitive, low distortion rock 'n' roller of a loudspeaker capable of very high sound levels when partnered with a (typically) costlier amp.

1 EASE OF DRIVE	-45%
2 RELATIVE LOUDNESS	65%
3 MAXIMUM LOUDNESS	55%
4 AUDIBLE DISTORTION	70%
5 BASS EXTENSION	30%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	90dB	91.1dB
■ Impedance (Nominal/Mean)	8 Ohms	7.8 Ohms
■ Estimated Bass Extension	45Hz	50Hz

# B&W 602 S2

**B**iggest of the British hi-fi companies by a comfortable margin, speaker specialist B&W exports more than ninety per cent of its production to more than 70 countries worldwide. A large and well staffed research facility provides the impetus for ranges of products which follow their own agenda, and are relatively immune to any fashion trends within the industry.

Certainly this £300 602 S2 makes no concessions to current trends. It's a substantial two-way standmount, similar in overall configuration to a succession of models which can be traced back at least 25 years.

Its immediate ancestor was the highly successful 602, which we reviewed and Recommended some four years ago, and the Series 2 replacements look almost identical to their predecessors. The asking price has risen by just £20, or about 7 per cent since 1996, from £280 to £300, but the new model does feature some significant improvements over its illustrious ancestor.

Most noteworthy of these is the radical tweeter, based on the work done initially for the upmarket Nautilus models. The neodymium magnets are compact enough to allow the sound radiation from the back of the metal dome to be absorbed down a 'transmission line' tube several inches long.

The cast alloy frame driver has a generous 140mm Kevlar cone, which has long been B&W's material of choice, partly because of the way the woven fibre matrix leads to a progressive roll-off at and

above the first break-up mode. This is reflex-loaded by a flared port built into the front panel.

No one would describe the 602 S2's large chunky vinyl woodprint box as stylish, but that's not really the point. The purpose is essentially to offer the best sound quality for the money. The shape is determined by the desire to use a single, relatively large main driver, and the vinyl is all about keeping the price down.

Our in-room responses point towards free space siting, which gives a rich, full balance, albeit a little lacking in ultimate bass extension. Some wall proximity should also be tolerable, though. The far-field balance dips down a little above 1.5kHz, giving B&W's familiar slight presence region dip, while the relative tweeter level seems to be very slightly stronger than before.

## SOUND QUALITY

Top of the lists on the first listening test day, and coming a close second on day two, the 602 S2 showed a real touch of class when presented alongside its contemporaries, which had much to do with an unusual measure of dynamic authority and accurately drawn contrasts alongside a warm and rich balance.



Crescendi were handled with noteworthy headroom and freedom from strain, and the adjective 'communicative' kept cropping up in the listeners' notes. "Big; delivers the 'live' feel very successfully," commented one panellist of our choral excerpt, although another listener referred more obtusely to a "splash and dash" character.

## CONCLUSION

The latest in a long line of speakers which have done consistently well throughout the lifetime of *Hi-Fi Choice*, the 602 S2 continues to bring honour to the tradition. It's decent sized, cast-frame, high-class main driver distinguishes it from the pack, as does the new 'transmission line' tweeter. While the presence might be a little too

restrained for some tastes, in every other respect this is an excellent speaker that's all the more impressive because of its relatively modest price. A Best Buy. **PMe**

## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £299.95

Large standmount has fine dynamic literacy and good communication skills at a very competitive price.

### FIVE YEAR GUARANTEE

B&W, Marlborough Rd, Churchill Ind Est, Lancing, West Sussex BN15 8TR  
(01903) 750750

## THE LAB REPORT

This is another well-judged package from B&W where the whole readily exceeds the sum of its parts. For example, the third-octave trend promises a very neutral, evenly-balanced midrange but with some slight emphasis of low bass and upper treble. Listen off-axis and you may become more aware of a slight depression around 2kHz, even if the upper tre-

**"The 4.1 Ohm minimum at 13kHz will only be an issue with weedy amp/bizarre cable combinations."**

ble is now better behaved. Otherwise, sensitivity is a generous 89.3dB (re. 2.83V/1m), allowing peaks around 105dB with amplifiers of sufficient dynamic power output (around 125W). Distortion, however, isn't especially low at 1 per cent through the midrange, increasing to 1.6 per cent

through the bass at 96dB (just 7dB above its nominal sensitivity).

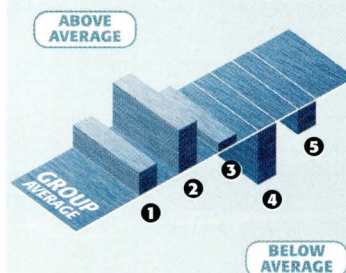
B&W typically uses fairly high-order networks so the impedance trend is often complex. Here, a third-order high pass filter invokes a -40° to +60° swing in phase from 575Hz to 2.8kHz with a mistermination at 725Hz.

The 4.1 Ohm minimum at 13kHz will only be an issue with weedy amp/bizarre cable combinations. The cone/surround mistermination in B&W's Kevlar bass/mid unit is also visible on its nearfield response and as a low-level spurious output from the front-mounted port. However, neither artefact poses a subjective threat. **PMi**

## HOW IT COMPARES

High sensitivity has been traded for moderate levels of midrange coloration and deep bass extension, but the overall package seems very well integrated indeed.

1	EASE OF DRIVE	15%
2	RELATIVE LOUDNESS	30%
3	MAXIMUM LOUDNESS	5%
4	AUDIBLE DISTORTION	-35%
5	BASS EXTENSION	-15%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
Sensitivity @ 1m/2.83V	90dB	89.3dB
Impedance (Nominal/Mean)	8 Ohms	11.4 Ohms
Estimated Bass Extension	43Hz	48Hz

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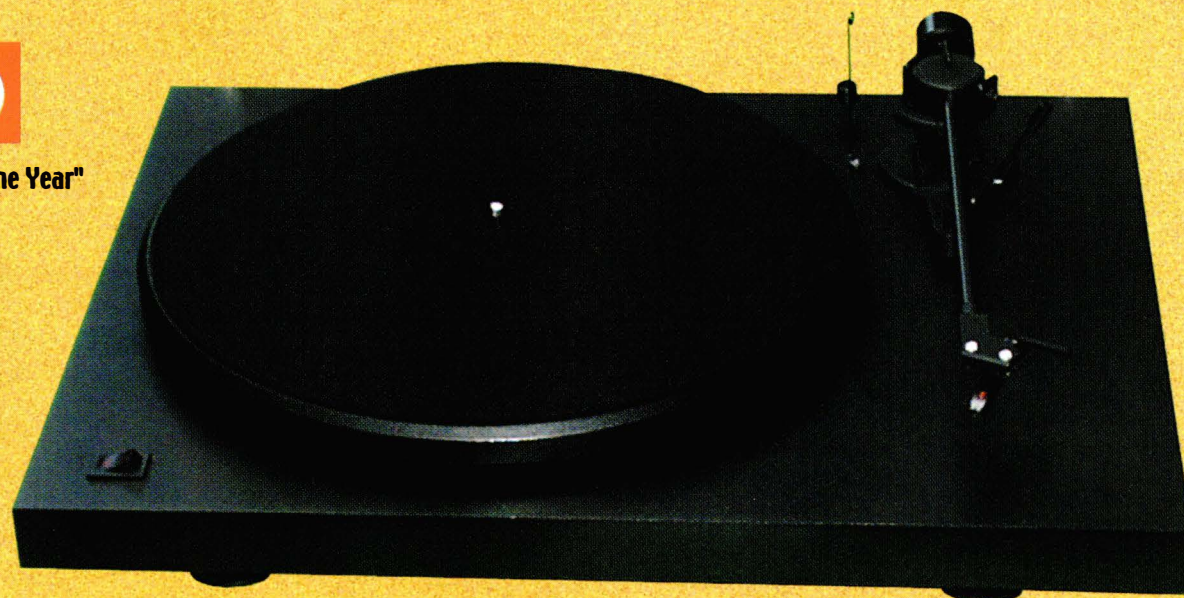


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# ELTAX Chroma Front

**E**ltax is a Danish brand that's been around since the 1950s, but has only relatively recently formed a UK subsidiary to handle distribution over here. The company has a huge range of models – or maybe that should be a huge range of model ranges, some twelve at the last count, giving a wide choice of

styles as well as configurations. And style is clearly a crucial ingredient for this Chroma Front, a speaker intended for left/right channel operation in either stereo or multi-channel configurations (and which can be used alongside the Chroma Centre, Satellite and Bipolar models as desired).

Perceived value for money has always been high on the Eltax agenda, and the Chroma is no exception. For one would have expected a package this large, this good looking and this well equipped to have carried a £399 price tag at least, rather than the ultra-competitive £299 Eltax is asking.

A slim and quite tall floor-stander, its most distinguished feature is the shiny 'black lacquer'-style laminate surface,

which always manages to look smart (unless you handle with sticky fingers). Don't scrutinise it too closely, though – you won't find it mirror-flat. Contrasting beautifully with the sharp-edged, shiny black box are the two silver 120mm main driver cones, and similar smaller tweeter.

Even the floor-coupling spikes have had the style treatment, and come as highly polished cones. A small pointy one fixes into a larger truncated one, or can be left unused to avoid damaging polished floors. Although this looks nice, there's no way of lock-nutting the pointy cones, and they're

made of a relatively soft metal that blunts easily. Bi-wire/-amp twin terminal pairs are fitted on the rear, close by a large and very enthusiastic reflex port.

The in-room, far-field measurements gave a slightly oddball result, with a balance that strongly emphasises the bass region (30-100Hz) even when sited well clear of walls, in a manner more likely to appeal to movie rather than music fans. Elsewhere the mid-band and treble are well balanced, although somewhat uneven and modest in sensitivity.

## SOUND QUALITY

Shiny by name and by nature, the Chroma has a rather 'obvious' top end which some panellists found distracting, but more obvious still is the heavy, rather amorphous (although mercifully even) bass which always threatens to dominate proceedings. The results of the listening tests were therefore a consensus 'thumbs down', but with one notable dissenter who

really liked the Chroma, describing it as: "A good all-rounder, and you can forgive the bass looseness."

The balance is certainly cleverly contrived, if a touch reminiscent of satellite/subwoofer systems, with a clean and coherent midrange-through-treble that conveys plenty of detail, but no great dynamic expression. The bass end can be quite effective in adding a good impression of weight and scale – until it's called on to do something complicated, whereupon a thuddy quality becomes apparent, lacking in drive and tonal differentiation.

## CONCLUSION

A great looking speaker for the money, no question, the Chroma Front's overall balance is distinctively bass-heavy, which suggests that in creating a design intended for either home cinema or stereo music applications, the company has leant towards satisfying the bass instincts of the typical movie viewer. If you, too, lust for lashings of bottom-end oomph, this could be worth checking out. **PM**



## THE LAB REPORT

**T**he Chroma provides more than a suggestion of a 'three-humped' response with emphasis in both upper bass, upper midrange and treble. Indeed, a narrow-band response analysis shows a very obvious peak at 3.75kHz, probably due to an undamped break-up mode in one or more

of the metal-coned bass/mid drivers. At greater

tance, the perceived integration should be better than this, although I'd still recommend not sitting too far off the speaker's axis if only to avoid its muted treble.

The bass driver's alignment is very peaky indeed (giving a subjective 'thump'), although the port resonance is of a far

lower Q and provides a broad reinforcement from 25-85Hz. In my view, a realistic in-room bass extension is far closer to 45Hz than Eltax's 35Hz specification.

The 90dB rating is also a trifle optimistic as only 86.9dB is achieved in practice (re. 2.83V/1m). Distortion is typically lower

than 1 per cent through the midrange but increases to a disappointing

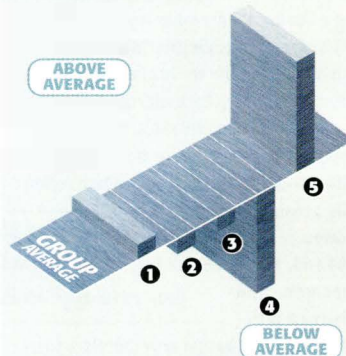
3-5 per cent over the few hundred Hz of the bass region at the same level (96dBA). Bearing in mind that Eltax rates the sinusoidal power handling of the Chroma at 150W, even with its modest 87dB sensitivity, I'd still anticipate a lower THD could – and should – be achieved in practice. **PMI**

**"In my view, a realistic in-room bass extension is far closer to 45Hz than Eltax's 35Hz specification."**

## HOW IT COMPARES

**A**n interesting speaker, not particularly tough to drive and capable of reasonable SPLs. Its bass is usefully extended but suffers from unusually high levels of distortion.

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



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	90dB	86.9dB
■ Impedance (Nominal/Mean)	4 Ohms	11.1 Ohms
■ Estimated Bass Extension	35Hz	45Hz

# MISSION 780

Now operating as an independent entity, following a January management buy-out from previous parent group NXT, this is the second of Mission's new 78-series models to come in for *Choice* evaluation.

In February (*HFC* 199) we tried the 782, a very pretty and compact three-way floorstander which performed sufficiently well to receive Recommendation. This tiny £299 780 standmount has a number of features in common with its bigger brother, effectively using the latter's midrange driver to cover bass as well as the midrange, while retaining the same tweeter and using similar enclosure design cues.

Mission has always demonstrated very superior industrial design skills, and there's no denying that this is one of the prettiest miniatures on the market. The chunky and artfully shaped, rosewood-veneered side and top panels look seriously class, yet also stylishly contemporary, and serve to emphasise the solidity of the enclosure.

The 780's bass/midrange driver uses radical new cone material Keraform, developed with drive unit specialist Audax, which is claimed to put the first break-up resonance mode comfortably above the driver's required pass-band. All materials involve some compromises, and one can't help suspecting that the mass of this cone might be a factor in the speaker's modest sensitivity.

The tweeter is Mission's familiar mechanically decoupled soft fabric dome, 25mm in diameter, while

two pairs of rear terminals permit bi-wire/-amp options.

The in-room, far-field responses indicate that some wall reinforcement is desirable here, which comes as no real surprise. Elsewhere the balance is quite smooth and well ordered, if a touch reticent through the presence region, yet slightly stronger than average in the treble.

## SOUND QUALITY

While its small size was always likely to prove something of a handicap under our listening conditions, even after making due allowances the 780 still proved slightly disappointing. Bass integration was the 782's weak spot, and the same is even more true for this 780, which also showed some power handling limitations when confronted by bass-heavy material, even at the far from excessive levels used for our listening tests.

The panel wasn't too critical of the 780, but it wasn't that enthusiastic either, finding the speaker pleasant enough – especially



through the midband and treble – but rather small in scale and dynamic aspiration. As one panel member put it: "Nothing really outstanding; it needs more of everything!"

In subsequent hands-on work, coupling the 780s to the stands using Blu-tac rather than spikes did bring a small but worthwhile sound quality improvement, but this was still insufficient to drag the speaker into serious contention for honours in this company.

## CONCLUSION

A speaker as small as this is inevitably best suited to smallish rooms and modest sound levels. The 780 is unquestionably one of the prettiest and smartest dressed miniatures around, yet while the

sound has its good points, especially in the clean midrange and treble, the bottom end was much less well received. Making that little 95mm cone do all the bass as well as the midrange duties might have been a bridge too far. **PMe**

## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £299.00

☐ Lovely ultra-compact miniature has a fine midband and clean, bright treble, but a slightly odd and detached bottom end.

### ■ FIVE YEAR GUARANTEE

☐ Mission Electronics, Stonehill, Huntingdon, Cambs PE18 6ED  
☐ (01480) 451777

## THE LAB REPORT

In our last loudspeaker issue (*HFC* 199) I had reason to question Mission's sensitivity figures for its 782, and the same doubts are raised here with the diminutive – but related – model 780. Once again, the speaker's axial response is most uniform from 500Hz to 8kHz, through which region its sensitivity

rates just **"Here we're talking about a small speaker requiring an uncommonly powerful amp to include the generate appreciable sound levels."**

increase in treble and upper bass energy (200Hz-20kHz) then it's possible to squeeze out a figure of 85.7dB (re. 2.83V/1m), but even here we're still talking about a small speaker requiring an uncommonly powerful amp to generate appreciable (-102dBA) sound levels. Fortunately, the 780 is genuinely

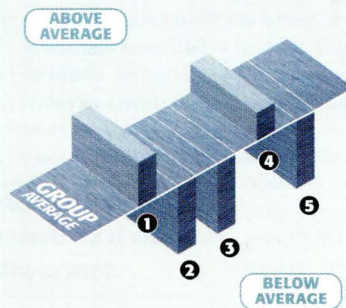
endowed with excellent power handling, so even at 96dBA, THD remains as low as 0.5 per cent through the midrange and a superb 0.3 per cent across treble octaves. Elsewhere, there's an acute and, in all likelihood, inaudible cancellation notch at 15.4kHz (from the moulded plastic sur-

round) with a sharp peak at 16.3kHz from the soft treble dome. Subjectively, it's difficult to avoid the well-tuned (70Hz) but rather 'isolated' bass register of the 780, but for the ideal mid/treble balance, I would suggest the speakers be toed-in by up to 20° or so. Meanwhile, an average 10.7 Ohm value is a good guide to its safe amplifier loading. **PMi**

## HOW IT COMPARES

Mission's use of the Keraform ceramic bass/mid cone infers lower levels of distortion but, also, a far lower sensitivity than its previous Aerogel-equipped range.

1 EASE OF DRIVE	30%
2 RELATIVE LOUDNESS	-45%
3 MAXIMUM LOUDNESS	-45%
4 AUDIBLE DISTORTION	20%
5 BASS EXTENSION	-45%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	87dB	84.1dB
■ Impedance (Nominal/Mean)	8 Ohms	10.7 Ohms
■ Estimated Bass Extension	55Hz	65Hz

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# ENERGY e:XL 25

The name Energy struck a distant chord in my memory as a large standmount speaker that *Choice* reviewed many years ago, although my computer records only go back ten years, and Energy doesn't feature in them. However, I do recall that the company is based in Canada, and located quite close to the forests which supply the raw material for the enclosures, which makes sense.

Whereas that original Energy seemed a little dated in size and shape, this e:XL 25 is bang up-to-date, as a compact, slimline floorstander with two main drivers. Although the surface finish is vinyl woodprint and the box edges and corners are sharp, it's still a very good looking speaker, attractively proportioned and unusually slim.

The drive units themselves, and the port, are all mounted on a moulded and curved sub-baffle which keeps everything neat and tidy, so the speaker looks good with or without the two grille panels in place.

One problem with very slim floorstanders like this is that they

are too easily knocked over accidentally. Energy has come up with a neat solution with little plastic mouldings that screw into the base of the speaker, so that the floor spikes are set an inch or so outside the line of the cabinet,

ensuring excellent overall stability. My only reservation is that the little mouldings could themselves be a little tougher and more rigid.

Presumably a 'two-and-a-half-way' design, where the lower of two identical main drivers, each with 100mm polypropylene cones, is rolled off earlier than the upper one, the tweeter has a small asymmetric 'horn' surrounding, directing and helping protect the output from a 19mm metal dome. Twin terminals are fitted, permitting bi-wire/-amp operation with the appropriate cables/amps.

The far-field, in-room responses indicate that close-to-wall siting is probably better avoided (although you might get away with it), and while the overall balance looks very well organised, there is a fair amount of local unevenness *en route*.

## SOUND QUALITY

The first speaker of the day is always at some disadvantage (which is why it's always repeated later in the sessions), but even at the start the e:XL 25 was rated comfortably above average. When repeated, it scored the highest mark of the day.

The reason has less to do with excelling in one particular area, than that it does everything competently-to-well, with no obvious weak spots. The sound is just a bit thin and could be smoother, but it's basically very well ordered, making a nice attempt at dynamic expression, and delivering some bottom-end grunt too. That said, the top end can get a bit wearing over time, and there seemed a slight loss of coherence when operating at very low levels.

## CONCLUSION

Typographic affectations notwithstanding, the Energy e:XL25 is very impressive in the subtle art of creating a cost-effective package which looks neat and compact, is acoustically well matched to the typical listening room, and has a pretty good all-round balance of performance compromises.

It's easy to get into and mostly satisfying over the longer haul too and, while it may not have the smoothest or most delicate sound around, Recommendation is clearly merited.

PMc



## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £399.90

Neat slimline floorstander delivers a fine all round performance for the price, but could sound smoother.

■ FIVE YEAR GUARANTEE

API (UK), Fairfax House, Goddard Road, Ipswich, Suffolk IP1 5NP

(01473) 240205

## THE LAB REPORT

This is a lively-looking speaker with, in some systems and rooms, the potential for a very 'characterful' bass. For example, the port resonance is clean, of moderate Q and tuned to 43Hz while the two polypropylene bass drivers have a modest -6dB point of 60Hz. All well and good but, for some reason, the drivers don't show a typical output

"The averaged, third-octave response shows some upper bass prominence, but its output is otherwise very uniform." caused by a cancellation from the 'step' in its separate tweeter baffle.

response also shows some upper bass prominence, but its output is otherwise very flat, extended and uniform - features that continue up to 30° off the main axis. This speaker should provide a very consistent sound over a wide listening area.

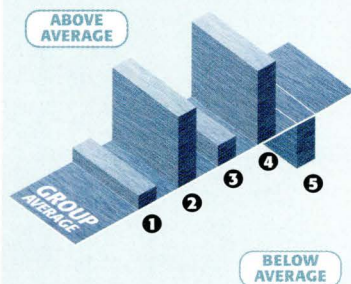
Sensitivity is also usefully high at 89.5dB (re. 2.83V/1m) even if this is less than the rather vague "room efficiency" specification of 93dB quoted in Energy's literature. It's worth noting that a narrowband response analysis shows a sharp notch in the e:XL25's output at 3.5kHz, well above the 2.2kHz crossover point and probably

However, this is a technical rather than overtly subjective issue. The average 8.5 Ohm loading suggests that the Energy e:XL25 is a little current-hungry, but the +/-36° phase angles are no big deal for any competent amplifier. PMi

## HOW IT COMPARES

An upbeat and energetic sound appears to be possible from this new speaker, which features both high sensitivity and low levels of harmonic distortion.

1 EASE OF DRIVE	10%
2 RELATIVE LOUDNESS	50%
3 MAXIMUM LOUDNESS	15%
4 AUDIBLE DISTORTION	50%
5 BASS EXTENSION	-30%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	93dB	89.5dB
■ Impedance (Nominal/Mean)	8 Ohms	8.5 Ohms
■ Estimated Bass Extension	42Hz	52Hz

# MAGNAT Vintage 320

Another of those speaker brands which has previously operated under the Recoton banner (see also AR), Magnat is actually a long established German company, whose attitudes to sound reproduction and marketing are symbolised by the use of a bulldog's head motif alongside the slogan "sound mit biss" (sound with bite).

Choice has reviewed a couple of Magnats in the past two years or so, both rather more expensive than this Vintage 320. Magnat experience had led me to anticipate packing material which had long since disintegrated, and the V320 proved no exception – partly because you do get an awful lot of speaker for your money here.

There are two decent sized main drivers mounted above and below the solitary tweeter in a tall and surprisingly massive enclosure. This is constructed from a wrap, which comprises front, back, top and base finished in textured black laminate, flanked by two hefty and curved side sections in a vinyl woodprint. The whole thing turns the scales to

substantial 19kg (without any evidence of mass loading), and is reasonably deep too, so it stands firm and solid on its 6mm spikes, no problem.

The driver layout (and room responses) imply that this speaker uses the so-called d'Appolito arrangement, where both main drivers operate in tandem through both bass and midrange up to the

crossover point. The drivers themselves look very smart, with their dish-shaped metallic diaphragms, and since each is 120mm in diameter, they combine to give a total moving area equivalent to a single 170mm diaphragm. The tweeter has a ceramic dome, while twin terminals permit bi-wire/-amp options.

The far-field, in-room responses show a balance trend that's not untypical of a d'Appolito configuration of this size.

Clearly intended to be kept clear of walls, the bass is quite strong, reasonably smooth and well extended, but output starts falling steadily above 250Hz and is roughly -9dB at 2kHz, prior to a modest treble recovery.

## SOUND QUALITY

"Sound with bite" might be the advertising slogan, but 'bite' is one thing the Vintage 320 notably lacks. The lack of vigour through the presence region, alongside a low frequency 'bloom' which loses texture and subtlety, all added up to a disappointing listening test result. "Like a bad cover band which means well but misses the point," according to one panellist. "Low distortion, but vaguely bland," commented another.

The thick, dark and slightly shut-in balance has some similarity to a 'loudness' contour. This

does help the speaker sound bigger than most when playing quietly, and also ensures it never gets unduly 'shouty' when you turn up the wick. The bass might be weighty and obvious, but it's also rather thuddy, lacking grip, poise and authority, with a tendency to plod along rather lazily. And again, because of the suppressed mid-band, the top end is a little obvious too, attracting little enthusiasm from the panel.

## CONCLUSION

Getting a d'Appolito right is far from easy, and the bottom line is that Magnat's Vintage 320 is much less successful in accomplishing this than the similar but larger Vintage 720 we reviewed (and Recommended) a couple of years back. You do get a whole lot of speaker for your money here, and it's not a bad looker either if you don't mind vinyl. There's more than ample bass on offer too, but that's part of the problem from a hi-fi perspective, where bass quantity and quality are two entirely different things. **PM**



## THE LAB REPORT

This speaker has a decent enough 89.1dB sensitivity (re. 2.83V/1m) but there's a potentially troublesome bass peak in the 200Hz region (where there's also a glitch on both phase and impedance spectra) and a real 'sting' in the high treble which peaks quite abruptly at 21.3kHz. The latter is successfully dealt with by toeing the speaker

inward by 10-20°, but then the bass prominence is all the more

**"The two bass/mid drivers are individually loaded via rear-firing reflex ports, each tuned to a low 38Hz."**

obvious. Treble distortion, I might add, is usefully low at 0.3-0.4 per cent because there is no correlation between this and any 'raggedness' in its response.

The speaker's 4 Ohm minimum load occurs around 200Hz, which is safe enough,

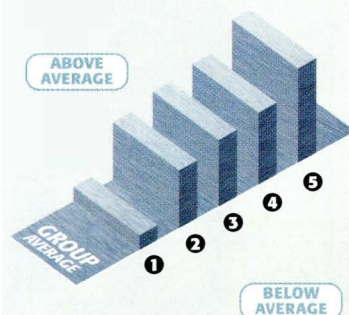
although the average 8.6 Ohms suggests the '320 is still moderately current-hungry. There's also an additional swing in phase and impedance through 2.1kHz-6kHz and what is, presumably, the crossover region. The two bass/mid drivers are individually loaded via rear-firing reflex ports, each tuned to a low 38Hz with little or no spurious peaks to colour the midrange.

I have computed the speaker's bass extension at a low 35Hz without rear-wall reinforcement but, bearing in mind my remarks about its upper bass, I'd suggest the Vintage 320 should be deployed in a truly freestanding position for best results. **PMi**

## HOW IT COMPARES

Sensitive and offering low levels of harmonic distortion, the Vintage 320 still looks rather 'ragged', lacking the sophistication and integration of the best at this price.

1 EASE OF DRIVE	10%
2 RELATIVE LOUDNESS	40%
3 MAXIMUM LOUDNESS	45%
4 AUDIBLE DISTORTION	50%
5 BASS EXTENSION	65%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	Not Given	89.1dB
■ Impedance (Nominal/Mean)	4 Ohms	8.6 Ohms
■ Estimated Bass Extension	22Hz	35Hz

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# MUSICAL TECHNOLOGY Kestrel Evolution

**W**hen *Choice* 'Best Buy' rated the original Kestrel back in 1995, it was the debut model from a new manufacturer. The SE variation fared rather less well in 1997, but the Kestrel has now moved on to yet another stage of refinement, indicating that a new appraisal was overdue.

The Kestrel Evolution has a starting price of £315, but a string of options are available at extra cost. The base version is just the speakers themselves, complete with spike kit and finished in woodprint vinyl. The very small footprint of this diminutive floorstander, however, means that it's difficult to achieve stability, and the speaker is vulnerable to being knocked over. A steel plate plinth priced at £29.95 is a pretty well essential minimum, but there's also a rather more attractive and allegedly effective ceramic plinth for £80, and this was used throughout our tests. A wide variety of real wood veneers and coloured lacquer finishes are also available as extras.

This is a very neat and attractive looking loudspeaker, and quite a small one. In enclosed volume (10 litres) and main driver diameter (100mm) it's one of the smallest floorstanders around,

although it's equally valid to regard the Kestrel as a near-miniature which doesn't need additional outlay on a couple of steel stands.

The semi-regular enclosure is actually pentagonal in plan cross-section, with the advantages that non-parallel faces help avoid focusing internal standing waves,

and internal reflections are well dispersed. Metal diaphragms are part of Musical Technology's stock in trade, and the main driver here has a classy cast alloy chassis. Twin bi-wire/-amp terminals are fitted directly through the rear box edge, leaving them a little vulnerable, perhaps, but avoiding the plastic terminal block.

Not surprisingly the far-field, in-room measurements show some bass limitations, which seem to indicate some wall reinforcement will be beneficial. However, the port output (tuned around 45Hz) is quite enthusiastic, and because the front is narrow, close wall proximity will increase midband coloration. In short, there are trade-offs here, so experiment *in situ*.

Elsewhere, the midband and treble are impressively smooth and well balanced, although sensitivity and low bass extension are both somewhat modest.

"Plenty of space... just pleasing and natural without being artificially detailed or trying too hard," according to one panellist, the Kestrel has a lovely open sound, with a smooth balance and very unboxy, transparent character, despite a touch of detectable 'cuppy' nasality on voices.

It could be more dramatic dynamically, with a bit more sheer grunt, but thanks to good resonance control, the overall dynamic range is quite wide, and total coherence rather impressive – provided you don't try to hammer it hard with demanding material.

## CONCLUSION

The Kestrel Evolution is a small loudspeaker, inherently better suited to smaller rooms and modest ultimate listening levels. Within that modest performance envelope, it is also an unusually refined and well sorted loudspeaker, giving a delicate, open and transparent sound. Throw in the cute styling and you've got yourself a Best Buy. **PMc**



## SOUND QUALITY

I initially presented the Kestrel unconcealed, in order to familiarise the panel with the programme excerpts being used, and several commented later on in the day how good the little Kestrel had sounded compared to the 'hidden' presentations. When the time came for the Kestrel to take its place behind the black curtain, it's gratifying to report that it was very well received, rating just behind the best of the day.

## VERDICT

SOUND	★★★★★
BUILD	★★★★☆
VALUE	★★★★★
PRICE	£314.95

**Cutely styled, deviously compact and a smooth, subtle and coherent performer, best suited to smaller rooms.**

### TWO YEAR GUARANTEE

Musical Technology, Unit One, Penllwngwent Ind Est, Saville Road, Ogmorthorpe, Bridgend, Mid Glamorgan CF32 7AX  
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## THE LAB REPORT

**W**ith very tightly controlled swings in phase (+25/-15°) but a harsh impedance trend that averages just 6.7 Ohms and hits a minimum of 4.1 Ohms at 2.35kHz (sub-8 Ohms from 110Hz to 20kHz), the Kestrel ranks as the toughest load of this test. Its averaged response trend is slightly downtilted but nevertheless uniform, and particularly so through the upper bass. But there is a slight promi-

**"Bass alignment is very flat, with no peakiness or offset port resonance to give an artificial 'thump'."**

nence immediately following the 1.9kHz crossover frequency, and this becomes more exaggerated off the main listening axis. Likely as not, this is due to some uncontrolled behaviour on the part of the metal-coned bass/mid driver *outside* of its

typical bandpass but, though it influences the speaker's balance, it does not unduly increase its distortion (typically 1 percent).

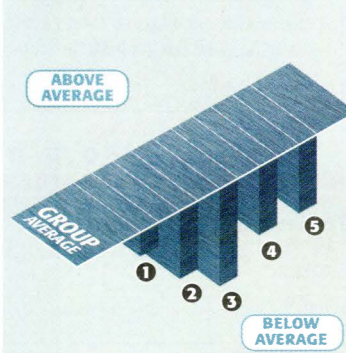
Bass alignment is very flat, with no peakiness or offset port resonance (48Hz) to give an artificial 'thump'. Bass extension is likely to be around 55Hz in a freestanding position although, because of the con-

trolled roll-off, near-wall sitting will drag this down further without a boomy or soft sound. In this regard, it is very well engineered – although, by way of recompense, the overall system sensitivity remains a low 84.6dB (re. 2.83V/1m), so don't expect clean peaks much beyond 100dBA from this little bird of prey. **PMi**

## HOW IT COMPARES

**N**ot very sensitive, not very loud, modest but consistent levels of distortion and hardly the most extended bass. It all adds up to a sound that's *different* rather than *better*.

1 EASE OF DRIVE	-15%
2 RELATIVE LOUDNESS	-45%
3 MAXIMUM LOUDNESS	-65%
4 AUDIBLE DISTORTION	-45%
5 BASS EXTENSION	-45%



## SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
■ Sensitivity @ 1m/2.83V	85dB	84.6dB
■ Impedance (Nominal/Mean)	6 Ohms	6.7 Ohms
■ Estimated Bass Extension	50Hz	55Hz

# SPEAKERS

# CONCLUSIONS

## THE BEST IN THE TEST

### BEST BUYS

#### 1 **B&W** 602 S2 £299.95

The 602 S2's decent size, cast frame, high-class main driver and 'transmission line' tweeter distinguish it from the pack. While the presence might be a little too restrained for some, in every other respect this is an excellent speaker at a relatively modest price.

#### 2 **HEYBROOK** Heylios £269.00

The sonic performance didn't stand out quite as obviously as those originals, but the Heylios still delivers plenty of the goods for significantly less money than when it originally received a BB rating, with real wood veneer in an attractive traditionalist style.

#### 3 **MUSICAL TECHNOLOGY**

#### Kestrel Evolution £314.95

A small speaker, inherently better suited to smaller rooms and modest ultimate listening levels, but within that modest performance envelope the Kestrel Evolution is unusually refined, giving a delicate, open and transparent sound. Cute styling, too.

#### 4 **TANNOY** mX 3 £229.90

This good looking budget floorstander has a beautifully voiced midband and pretty well disguised limitations elsewhere. The mX 3 favours midband sensitivity over deep bass grunt. Add mass for better stability, but poor spike socket fixing is a weakness.

### RECOMMENDED

#### 5 **ACOUSTIC ENERGY** Aegis Two £249.95

The Two is a good all-rounder at a sharp price, but a pair of Aegis Ones on budget stands is likely to have the edge on both performance and value. The sound might be a touch 'shiny' for some, so try before you buy, in a system context if possible.

#### 6 **CASTLE** Richmond £249.90

Better suited to smallish rooms, the Richmond delivers an outstandingly clean and coherent midband performance thanks to its classy carbon-fibre cone main driver. The cabinetwork is classy too, in the Castle tradition (so all it needs is a good quality active subwoofer!).

#### 7 **ENERGY** e:XL 25 £399.90

A cost-effective package which looks neat and compact, and is acoustically well matched to the typical listening room. The e:XL 25 is easy to get into, and mostly satisfying over the longer haul too, although it doesn't have the smoothest or most delicate sound around.



The sub-£500 sector of 'budget' speakers might not be the most glamorous from a reviewing perspective, but it is the sharp end of commercial reality. These are the speakers people actually buy, rather than dream about, so helping them make a well considered buying decision is all the more important.

The basic qualification for inclusion in this Mega Test was a price tag below £500, but as it turned out the cheapest entrant cost £229 and the most expensive £399, so our speakers are all around the middle of a potentially much broader price band.

Splitting them further into three groups seems a little like gilding the lily, but traditions must be maintained even if the distinctions sometimes seem marginal – and can vanish altogether if you start adding the cost of stands into the prices of the standmount models.

There's plenty of contrast between the different models, but given the relatively tight price constraints, it's no surprise to find some close similarities too. The market creates stereotypes which our group illustrates well, but it's too easy just to assume that box size/shape is the key ingredient.

Although this does play an important role, the size of the main driver cone seems far more significant. (Manufacturers quote frame sizes, but I prefer to measure and quote the actual cone diameters; note also that cone area increases with the square of the radius, so a 140mm cone has twice the area of a 100mm cone.)

## LOUDSPEAKER COMPARISON TABLE

MAKE	ACOUSTIC ENERGY	ALR	AR	B&W	CASTLE	ELTAX
MODEL	AEGIS TWO	ENTRY 2M	15	602 S2	RICHMOND	CHROMA FRONT
PRICE	£249.95	£250.00	£275.00	£299.95	£249.90	£299.00
SOUND	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
GUARANTEE	5yrs	5yrs	5yrs	5yrs	5yrs	1yr
SIZE (WxHxD, cm)	19x87x24	20x33x29	22x37x22	23.5x49x29	17x33x20	19x98x28
SENSITIVITY@1m/2.83V	87.7dB	88.5dB	91.1dB	89.3dB	90.1dB	86.9dB
IMPEDANCE (MEAN)	12.4 Ohms	9.2 Ohms	7.8 Ohms	11.4 Ohms	8.25 Ohms	11.1 Ohms
ESTIMATED BASS EXTENSION	45Hz	45Hz	50Hz	48Hz	65Hz	45Hz



True 'budget' speakers, in size and shape the Tannoy mX 3 and AE Aegis Two look like they've been shelled from the same pod. Both are based on smaller £150 standmount designs, and are much the same size and price. But when you get down to details, the distinctions are apparent. The two have quite different sonic characters, the Tannoy's pulp cone main driver opting for higher midband sensitivity, whereas the AE's smaller metal cone has better relative bass extension.

On main driver size grounds, however, the Acoustic Energy perhaps belongs with the Castle Richmond and the Mission 780, although they are significantly smaller in size and have real wood veneer. Again, the detail differences result in a very different sonic character. In terms of driver size and performance envelope, there's a case for including the floorstanding Musical Technology Kestrel too, and all are arguably better suited to smaller rooms.

The next sub-group is a three-some, representing a step up in main driver size with consequent improvements in dynamics and loudness capability. The ALR Jordan, AR 15 and Heybrook Heylios are all standmounts, but with rather more grunt than the miniatures, while the last of the three scores extra points for its real wood veneer.

It's perhaps significant that the next models up in terms of bass driver area, the B&W and the Energy, were also two of the most successful in the listening tests. There's more to it than that, of course, and the two designs are quite different in other respects – one is a largish, two-way standmount, the other a compact, floorstanding two-and-a-half-way.

But these two models do seem to represent a good all-round compromise between bass extension and sensitivity, whereas the Eltax and Magnat models both had larger total bass driver

area, and also generated excessive bass output. That's not such a good idea with music, but it does make more sense for movie reproduction, and the Chroma Front for one makes no secret of its home cinema aspirations.

Seven out of twelve models with swingtags is a pretty typical rate for speaker group tests, and while it's unusual to have more Best Buys than Recommended models, that really just reflects the fact that we're dealing with the lower rungs of the price ladder here, where basic value for money is bound to be high.

**BEST BUYS & RECOMMENDATIONS**

**HI-FI CHOICE BEST BUY** **BEST BUYS:** Our famous Best Buy swing-tag is awarded to hi-fi equipment which offers an excellent standard of performance at an attractive price. Best Buy winners are superb all-round components.

**HI-FI CHOICE RECOMMENDED** **RECOMMENDED:** Recommended products are first-class audiophile propositions, losing out to Best Buy status only because of a higher price or less competitive overall sound quality.

**UNDERSTANDING OUR BAR GRAPH MEASUREMENTS**

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

**1 EASE OF DRIVE:** This is derived from the reactive and resistive components of the speaker load, indicating how tricky it is for the amp to drive.

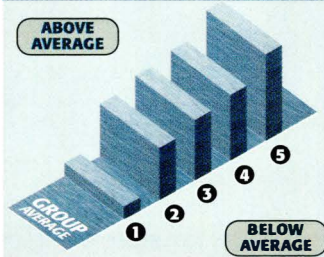
**2 RELATIVE LOUDNESS:** Speaker sensitivity is measured at 1m with a 2.83V input across third-octave bands 17-29, then weighted according to the human loudness contour to indicate how 'loud' one speaker will sound relative to another.

**3 MAXIMUM LOUDNESS:** This takes into account the speaker's sensitivity, distortion, the maximum useable amplifier power and the effects of placement in an 'average room' to gauge the maximum practical Sound Pressure Level.

**4 AUDIBLE DISTORTION:** This test momentarily raises the output to 96dBa with dynamic signals through bass, midrange and treble. This allows us to more realistically assess distortion.

**5 BASS EXTENSION:** This gives an indication of the likely bass extension in an 'average' room, according to the maker's suggestions for positioning.

**THE BAR-GRAPHS**



**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*.



**L O U D S P E A K E R C O M P A R I S O N T A B L E**

MAKE MODEL	ENERGY eXL 25	HEYBROOK HEYLIOS	MAGNAT VINTAGE 320	MISSION 780	MUSICAL TECH. KESTREL EVOL.	TANNOY mX 3
PRICE	£399.90	£269.00	£350.00	£299.00	£314.95	£299.90
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
GUARANTEE	5yrs	2yrs	1yr	5yrs	2yrs	5yrs
SIZE (WxHxD, cms)	15x87x31	23.5x36x27	25x102x30	18.5x87x26	20x85x19	18.5x87x26
SENSITIVITY@1m/2.83V	89.5dB	87dB	89.1dB	84.1dB	84.6dB	88.2dB
IMPEDANCE (MEAN)	8.5 Ohms	8.65 Ohms	8.6 Ohms	10.7 Ohms	6.7 Ohms	10.4 Ohms
ESTIMATED BASS EXTENSION	52Hz	48Hz	35Hz	65Hz	55Hz	50Hz
	<b>HI-FI CHOICE RECOMMENDED</b>	<b>HI-FI CHOICE BEST BUY</b>			<b>HI-FI CHOICE BEST BUY</b>	<b>HI-FI CHOICE BEST BUY</b>

**RIVAL BUYS**

**B&W DM302 £150**  
Probably the best balanced miniature around, if not necessarily the most involving, the 302 is very neatly styled, but dynamics and drive are a bit lacking.

**DYNAUDIO Audience 40 £400**  
With solid build quality for both drive units and enclosure, few of a similar price and size can offer the same winning combination of neutrality, dynamic range and sheer musical involvement.

**HEYBROOK Optima £259**  
A bit of an ugly duckling, the treble is notably weak, but it does deliver the bass end with a weight, smoothness and enthusiasm that many more expensive rivals can't match.

**JBL LX2 £250**  
Lively, bouncy and invigorating, if a touch crude on occasion, this good-hearted speaker reproduces music with considerable zest and enthusiasm, and offers a much more convincing dynamic performance than most at the price.

**JPW ML510 £150**  
Fine all-round material value and a beautifully engineered balance, some will find its openness invigorating and communicative, others a little too upfront and in-er-face, especially with the wrong combination of components.

**JMLAB Tantal 515 £495**  
This compact floorstander has a prosaic appearance but delivers a vigorous and communicative performance, which might be a bit bright for some tastes

**PMC TB1/TB1S £430/£482**  
Good size standmount speaker uses transmission line-type loading and a meaty main driver to give a generous sound with dynamic literacy alongside a gentle, laid-back balance.

**ROYD Doublet £485**  
Twin main driver arrangement in a very compact real wood box gives more life and drive than Royd's smaller models. Represents fine material value for money.

# THE FORMAT Factor

Paul Miller gets his brain around the intricacies of MP3 and the latest generation of MiniDisc.

The rapid growth of MP3 and 'music from the Net' is providing a wealth of material for specialist hi-fi and consumer magazines alike. Some would have us believe the data compression of 1:11 managed by MP3 encoders is achieved without significant subjective compromise, while others maintain that such 'lossy' compression makes the music unlistenable.

Likely as not, the truth lies somewhere in between, but getting at the truth is easier said than done when Walkman-style MP3 players aren't designed for connection to high quality audio systems. MP3 players have typically been auditioned via fashionable earphones, an experience that doesn't readily compare with a CD player or



MiniDisc (MD) deck driving a full-range hi-fi system.

I discussed the basics of data reduction and compression in *Oasis* (HFC 196) and compared the technical performance of MP3 and MD recorders. Those results were startling, and indicated clearly that even at a reduced throughput of 128kbps (1:11), MP3 created 'visibly' less damage to a complex audio signal than MD at 290kbps (1:5). But does this mean that MP3 will sound better than MD, or even approach CD in quality?

On the face of it, such a comparison is fraught with variables. The headphone output of an MP3 portable is not up to the quality of an MD or CD player's analogue stage, say, while the quality of their respective DACs would also 'muddy' comparison between the formats. We need to know exactly how good MP3's MPEG Layer 3 scheme can sound against MD's ATRAC and an uncompressed CD reference.

### HOW IT WAS DONE....

To achieve the fairest comparison, I endeavoured to encode several pieces of music with both MPEG Layer 3 (at 128kbps and 256kbps) and Sony's latest DSP-based ATRAC-R schemes, and then 'burn' the resulting data onto a single CD-RW disc in a form recognisable to a modern CD player. In one step, this would avoid us becoming

confused by the 'sound' of the MP3/MD players and permit a genuine comparison between the compression algorithms. Pioneer's PDR-509 was used as the CD 'transport', driving Theta's DSP Progeny outboard DAC as the single, constant-level source for our tests.

### ...AND WHAT IT SOUNDED LIKE

Blind listening comparisons between (silver) CD and those tracks copied onto CD-RW via a \*.wav file showed that the additional number-crunching does, indeed, exact its own penalty.

The CD-RW copies sounded slightly thinner, missing the fluid quality of the original; but although drier and flatter in perspective, they were "by no means an embarrassment considering the 'abuse' endured by the data through this process", it was suggested.

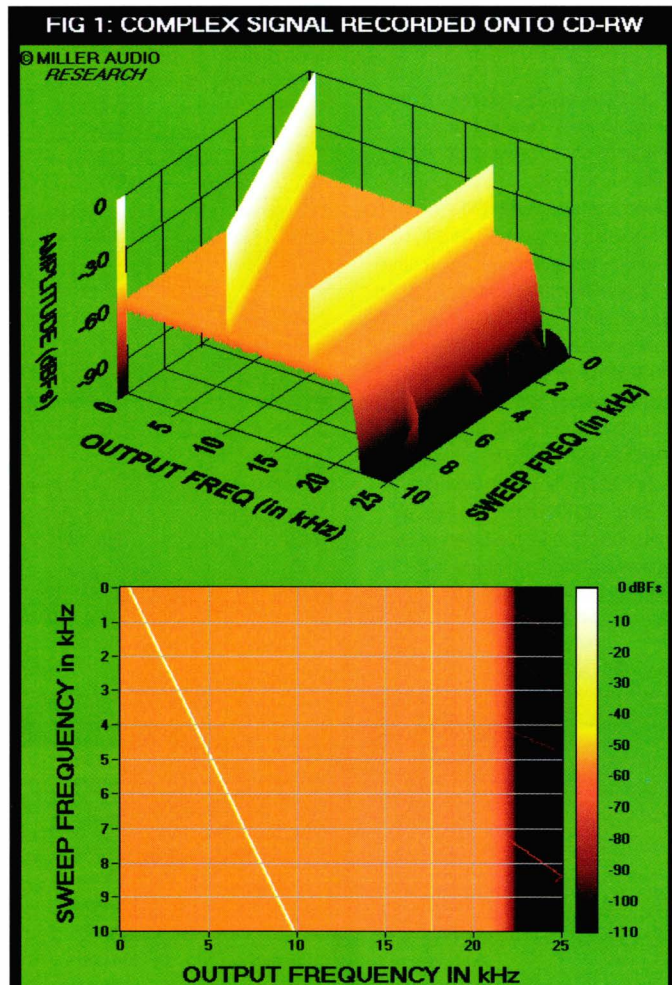


Fig 1: The reference 'image' copied from CD to \*.wav to CD-RW (see *Oasis*, HFC 196)

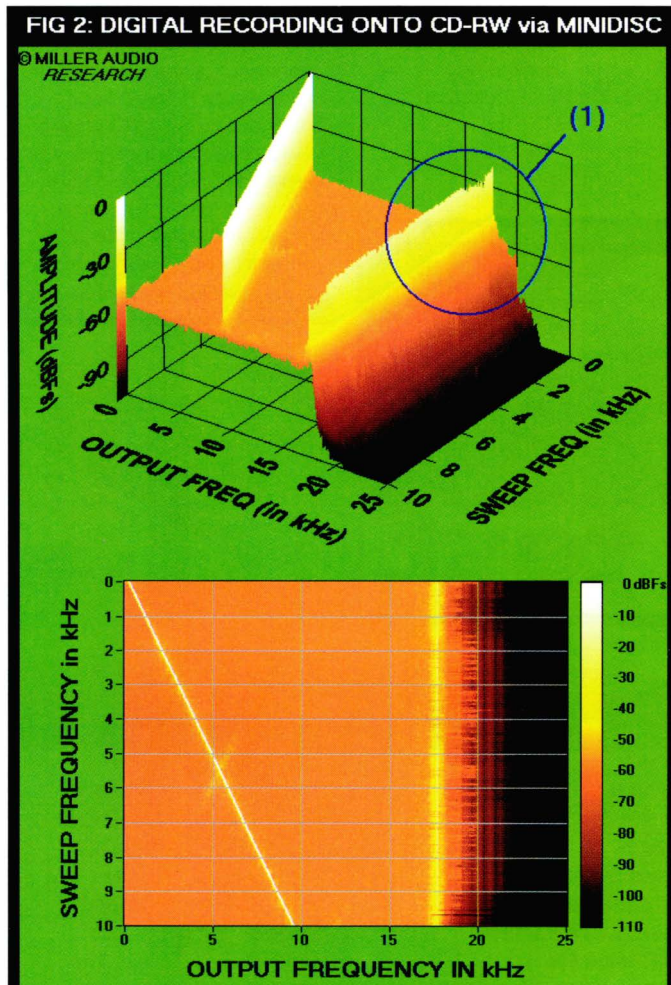


Figure 2: The latest version of Sony's ATRAC results in far less (visible) corruption.

**WHAT IS A \*.wav FILE?**

When recording music onto a computer's hard drive, it is usual to store the data as a 'wave' (or WAV) file which is denoted by a \*.wav extension. WAV files are a standardised format for sound files on the Microsoft Windows platform. Uncompressed WAV files are typically very large, as about 10Mb of disk space is required for every minute of audio recorded. A full 74 minute audio CD would require some 750Mb of hard disk space if it were converted to a WAV file. Music that's been compressed using an MP3 algorithm and then converted to a WAV file, as in our tests, may occupy a tenth the disk space, however. This helps explain the popularity of MP3 among computer buffs!

It's important to appreciate that copies taken from CD to CD-RW via a \*.wav file aren't entirely transparent, because the compressed versions, however adroitly achieved, could never live up to the subjective transparency of the original.

**COMPROMISING STUFF**

Compared with the earlier version of MD's music compression software (ATRAC), Sony's new DSP-based 'Type R' scheme produces distinctly more faithful facsimiles of the original (see Figure 2). Whereas the 3D plot in issue 196 showed great chunks of music being carved away in the name of data compression, this plot indicates

that a loss in the 'certainty' of very high frequency sounds (1) is the principal compromise.

Our listeners felt that the MD transcripts were slightly 'shrunk' in stature when compared with CD, although the performances typically possessed more life and were more vivid than their MP3 counterparts. The Christy Moore selection certainly sounded huskier and the string tone more colourful, even slightly more percussive than the MP3 copy.

The copy of Brahms' *Symphony No.1* lacked a little refinement: the bowing of low strings sounded almost identical to the original, leaving just the higher strings and horns lacking some of their characteristic sparkle. Nevertheless, as the orchestra builds up a head of steam, the musical sound-stage is progressively flattened and the performers less easy to discern as 'free spirits'. As the 3D plot suggests, it's the top end that suffers most as the track becomes busier, relying on the listener, rather than the player, to work to maintain the threads of the performance.

**ON THE FLIP SIDE...**

Our 'MP3' copies (Fig. 3) made at the maximum 256kbps data rate maintain the full audio bandwidth (2) and show improved coding of strong treble signals (3), but there's clear

evidence of distortion (modulation) of lower-level music detail (4). The blind panel interpreted this as a "dirtiness", suggesting the vocals from both Christy Moore and Cassandra Wilson copies were slightly too hard while the ambience of the original CD was now withdrawn, less vibrant and colourful.

The 'strum' of guitar strings sounded 'clipped', as if missing the full body and resonance of the CD track. Vocal sibilants, meanwhile, were just... well, a little more sibilant. Percussion is also slightly flatter, the rise and fall of the cymbal lacking the air and delicacy of the original. "It's just a little stale and cold," remarked one listener.

**HALF MEASURES**

Using the MP3 algorithm at just 128kbps (a 1:11 compression, see Figure 4) results in a clear loss of treble energy (5), although there's evidently less corruption of low-level detail (6). Our listeners certainly thought these copies sounded 'quieter' than at 256kbps, but found them fundamentally less immediate and thrilling.

Strings and woodwind were more confused, and the picking of strings was now blunted, "as if the orchestra has had its fingernails cut too short". Vocal tracks sounded small, the sense of scale greatly diminished along with the weight and

dynamics of the piece. The orchestral copies suffered weak imagery and momentum – "a very dilute copy of the original" concluded the panel.

**THE STATE OF THE ART**

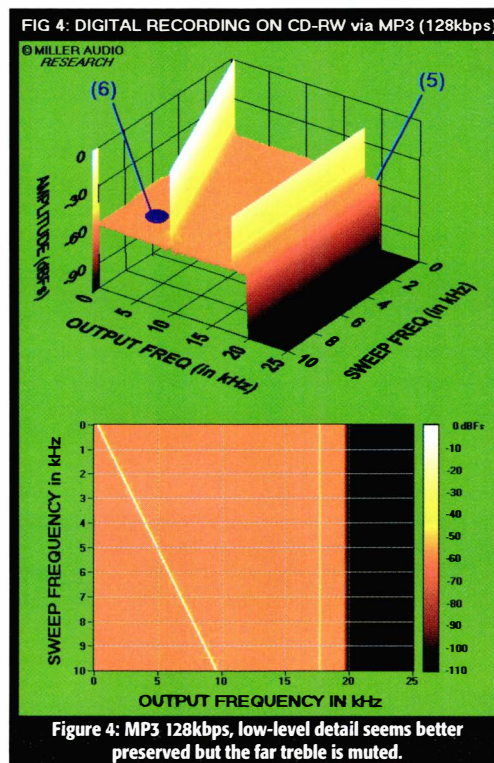
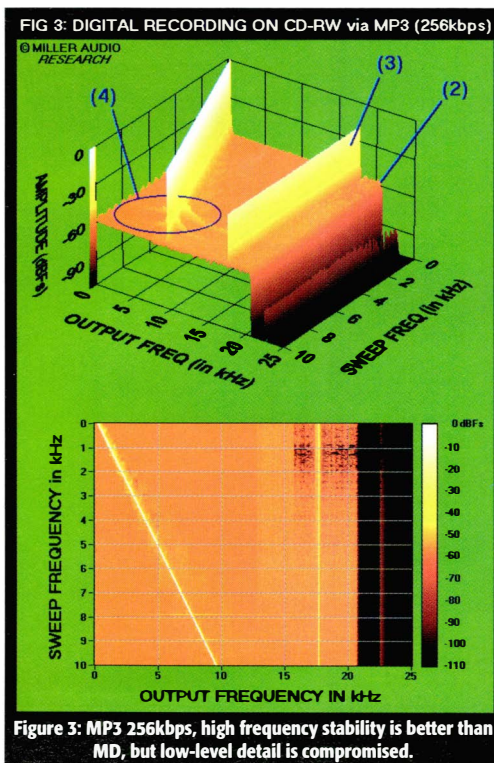
A few months ago, it looked as if MP3 had a very real edge over MD, but with the incorporation of Sony's DSP-based 'Type-R ATRAC' coding into new recorders, the digital pendulum has swung the other way.

At 256kbps, MP3 copies sound as if they have "room to breathe", the music ebbing and flowing with plausible regard to the dynamics of the original. An equivalent MD copy (at 290kbps) sounds smaller but cleaner, the music retains a sense of 'motion' and coherence but is that little bit tidier.

Recordings on both MD and MP3 sound a great deal more mechanical than CD, with stereo imagery and dynamics compacted, which is no bad thing bearing in mind their portable and in-car intentions. Thanks to its new ATRAC coding, this Sony MD recorder is just about the best we've heard to date which, with the solid-state 'Memory Stick' system, suggests that the market for compressed audio carriers is about to come to the boil.

**HOW THE TEST WAS DONE**

For this test I used a PC equipped with two SCSI-2 CD-ROM drives, including the latest spec Yamaha CRW6416S-VK CD-RW writer. Selected CD tracks were copied from the slave CD-ROM drive and converted to \*.wav files via Fraunhofer's professional IIS MPEG Layer 3 compression software. Copies at 128kbps and 256kbps data rates were made of each CD track. These compressed \*.wav files were then converted back into CD-format data and copied onto CD-RW using Adaptec's deluxe CD Creator 4. Because the file format conversion, CD-RW copying process and CD-RW substrate are all also likely to affect sound quality, the 'reference' CD tracks were also converted to *linear* \*.wav files and then to CD-format data before being rewritten onto the same CD-RW disc. These 'linear' CD copies were used to record digitally onto Sony's latest MDS-JB930 MD deck before being looped back to CD-RW for direct comparison with the CD and MP3-compressed CD tracks. MD-compressed tracks, MP3-compressed tracks and the original, uncompressed CD tracks could all then be auditioned from a single CD-RW disc!



## HELP

**Q** I'm looking for an amp with a budget of £900. I listen to Moby, Underworld, Floyd, Ravi Shankar, house, Euro, trance, drum & bass...


*Naeem Anwar, via e-mail*

**A** Audition the Arcam Alpha 10 (£800), Densen Beat B-100 MkII (£650), Electro-companiet ECI-3 (£1,000), Primare A-20 MkII (£800) and Roksan Caspian (£795)

**Don't panic! Help may have a new look, but it still contains the same nuggets of wisdom. Tim Bower fields your queries.**



## Wall flowers

 My system consists of an Arcam Alpha 8 CD player and Alpha 8R amp, with a Musical Fidelity X-10D between them, QED Qnect 4 and SonicLink Silver Pink interconnects, QED Qudos Silver speaker cable and Kimber Yello mains cables. I now need some speakers to go with it. I like disco, hip-hop and dance music, and my budget is up to £600. My room is 2.5m x 4m, and I've made alterations to my wall brackets so they protrude 34cm from the wall and are 40cm from side walls.

*David Thornton, via e-mail*

*Is it essential you keep your speakers mounted on wall brackets? Dedicated floorstanding speaker stands are a better way of mounting 'bookshelf' speakers – they tend to be a more stable, tuneable and better coupled method of support, and ensure the drive units are properly positioned at ear height. However, if they have to stay on the wall, there are speakers of suitably modest proportions that don't mind being positioned close to a rear wall.*

*Check out Dynaudio's weighty, punchy Audience 40 (£400), and the small but nonetheless potent Celestion A1 Compact (£600). The Neat Petite II is also well worth considering, although a little more pricey at £745. All these speakers have what it takes to handle your musical preferences, but bear in mind that their small dimensions mean limits to their ability at high volume levels.*



## The SE side



I want to buy a new amplifier for my Marantz CD-67MkII OSE CD player, Beogram 1700 turntable and Mission 763 speakers. I could buy a Marantz PM66SE KI Signature at a very good price, or a used Puccini (not the SE), or there's an Onix OA32. There's little price difference. What would be the 'best fit'?

Also, what's the difference is between the standard Puccini and the SE? I'd be immensely grateful if you could answer my questions – the hi-fi infection is starting to get a grip on me!  
*Michiel Diepenhorst, via e-mail*

*The Onix amp wasn't one of the brand's best and probably isn't worth bothering with, but the Marantz and the Audio Analogue are both fine models. On balance, we'd go for the Audio Analogue, providing it's in good condition – its smooth yet rhythmic delivery is hugely enjoyable and should match your speakers well.*

*To answer your second question, the Puccini Special Edition offers an enhanced power supply and an extra pair of transistors per channel. However, our review found the standard Puccini to be the better value option. But now the Puccini family has grown to incorporate a third model, the Puccini Remote. Flick back to Heat Seekers (p14) to find out what we think of it.*

*As for your nasty infection, we're sorry to say there's no permanent cure. Once the hi-fi bug has bitten, the fever is there for good!*



## Style & content



In my search for a stereo AV set-up that is both stylish and high in quality, I am considering using the NAD Silverline preamp to run a pair of Bang & Olufsen Beolab Active speakers. Is this possible, and am I likely to be pleased with the resulting sound?  
*J Heys-Limonard, W Sussex*

*We're not too familiar with B&O kit as it tends not to fit our remit, but we imagine your plan would be possible with the right connectors.*

*However, Beolab speakers aren't the best choice from a sound perspective. We'd suggest you add NAD's Silverline S200 power amp (£1,400) to the S100 pre-amp (£600), or for a less costly amp option check out Musical Fidelity's 'X' series. Then, look at your speakers...*



## Sony the lonely



Congratulations on your magazine and Website – they are the best around! Anyway, following your reviews of CD players, I have been visiting a few hi-fi retailers in London and asking them for advice regarding a CD player and speakers to go with my Rega Brio amp.

I'm particularly interested in Sony's CDP-XB930E player, which you recommend so highly, but every time I mentioned it I was surprised by the response. "Sony can't make proper hi-fi," they said, and "that player won't suit your British amp." As this so bluntly contradicts your analysis, I would like your opinion: is the Sony really worth considering, even when mixed with British products like Rega and B&W?

Nicolas, via e-mail

*The Sony is an excellent player, we assure you, and quite happy to work with amps and speakers of suitable quality whether or not their origin is British. It's an enthusiastic player, and could sound a little 'toppy' if partnered with bright-sounding gear, but your Rega amp should work quite well. Could it be that the dealers you visited don't stock Sony gear? That could be a reason for their bias. We're not so keen on every player in the Sony range, but the CDP-XB930E is definitely a bit of a star.*

*However, you should audition it against alternatives, preferably in tandem with the Brio. The Arcam Alpha 7SE is a must-listen at £350, likewise the £300 Marantz 6000 OSE – we found it a highly articulate player when we tested it last month.*

*Also, don't forget Rega when making your decision. Its Planet CD player is a little more costly at £450, but finds particular synergy with amps from the same make. And if you go that route, why not pick a Rega speaker as well? The company's complete CD/amp/speaker set-ups can sound extremely musical and involving, so consider the Aria (£250) and Jura (£450) loudspeakers.*

## Evans above



I have just bought the Pioneer A-300R

Precision amplifier, following your

glowing reviews. It sounds good to me, but I understand that it could sound even better if tweaked by Tom Evans. How do I contact him to arrange this?

The rest of my system consists of KEF Coda 8 loudspeakers on home-made wooden stands, with QED 79-Strand speaker cables, Pioneer PD-S505 Precision CD player, Denon TU-260L MkII tuner and Puresonic 5050A interconnects. However, my main interest is listening to my classical LPs. I have a Thorens TD160 MkII BC, Ortofon VMS 20E MkII MM cartridge, and ADC LMF 1 carbon fibre tonearm.

When I play vinyl it doesn't have the transparency or dynamic range of CD. Would a cartridge upgrade help, to the Reson Recca for example? Unfortunately, I seem to have lost all instructions for setting up my tonearm, and ADC doesn't exist any more, so I don't know if I could even fit a new cartridge!

Secondly, spatial resolution and transparency isn't particularly good, even with CD. Should I upgrade the speaker cables or interconnects? I know I should have proper stands, but I wonder whether I should just go for better, floorstanding loudspeakers?

Patrick Bower, via e-mail

*The A-300R is a good little amp anyway, but the Tom Evans upgrade makes it a giant slayer. You can contact him on (01443) 833570 to arrange modification.*

*As for your turntable, a change of cartridge probably would help. Using the Pioneer's built-in phono stage you're limited to MM designs, and the Reson Recca (£250) is one of the best, along with the Grado Prestige Gold (£149). Either should be easy to install – a good hi-fi store should be able to furnish you with an alignment protractor and tracking force gauge to ensure optimum set-up.*

*Your third question is more difficult. A good set of speaker stands – Partington A-4s, say (£119) – would improve things, and cables may help too. Electrofluidics' Monolith speaker cable, our Ed's favourite, is likely to take you in the right direction. Given your preference for transparency over bass we suggest you stick with stand-mount speakers such as Heybrook Heylios (£269) or the AVI NuNeutron (£500).*



## Ohhhhhhmmm



In his review of the KEF Q15 speakers, Paul Messenger said:

"The one reservation concerns an amplifier load which drops to a very low 2.7 Ohms at high frequencies. Some amplifiers won't even notice it but others might get into trouble, so some care must be taken to ensure the speaker's compatibility with the rest of the system". In Idiot-speak, at which I am fluent, what does this mean and what should I be looking for in the spec of the amp I propose to power these with?

Matthew, via e-mail

*In simple terms, impedance is the load a speaker presents to the amp. A low impedance speaker draws more power from the amp than a high one. So low impedance speakers need more powerful amplifiers. The impedance for each speaker varies with frequency. Manufacturer's specs give an average figure which can be misleading; the measurements given in our reviews are designed to give a rather more accurate picture.*

*The Q15's impedance drops to a low of 2.7 Ohms at high frequencies, which translates into a relatively taxing load for amps to handle. However, this is partly offset by a fairly high sensitivity, which makes the speaker less demanding.*

*Look out for models with a high 'speaker load tolerance' rating in our lab report bar charts – examples would be the Rotel RA-971, Marantz PM-6010 OSE, NAD 317 and Denon PMA-1500R.*



**I'm looking for a turntable around the £4,000 mark to audition against a DNM model. My music tastes are mainly classical with some jazz and world music.**

Stefano Lazzarotto, Tehran

**Consider models from Avid, Michell, Rega and SME. They may not all be obvious foot-tappers like the DNM, but they more than compensate in other areas.**

**Q** Which cartridges below £300 would you consider best?

Roger, via e-mail

**A** If you're looking for a moving coil design, check out the Denon DL304 (£200), Ortofon MC 10 Supreme (£300) and Sumiko Blue Point Special (£250). For a moving magnet alternative, they don't come much better than the Reson Reca (£250).

## Central reservations



I'd like to ask your advice about my multi-channel hi-fi system. At the moment I have a Denon DCD-635 CD player and AVR-600RD receiver, with B&W DM4s at the front, a CC3 in the centre and S100 Solutions to the rear. They're all new save the DM4s, which have definitely had their day. The other speakers show them up, so they need to be upgraded.

I enjoy listening to classical symphonic work at modest levels through five channels, and occasionally indulge in a film in Dolby Surround. I've heard some speakers around the £300 mark but they weren't much of an improvement; the B&W DM302 was too small for majestic Mahler stuff and the DM305 was too large for the room. I don't want big coffins in my room – could you recommend a pair of compact speakers (up to 50cm tall) that will suit my other equipment and give detailed, sparkling presence with a degree of warmth? My budget is up to £1,000.

Joost van der Valk, The Netherlands

*The important thing with front speakers in a multi-channel system is to ensure they match sonically with the centre speaker, or the performance won't gel. The easiest way to ensure a match is to buy from the same range, but you've already tried that with the DM302 and DM305, and they weren't to your liking. Why not try something else from B&W? The CDM1SE (£600) is an obvious choice, or even the Nautilus 805 if you can stretch to £1,500.*

*Neither of these speakers will be an exact tonal match for your centre speaker, but they're likely to be closer than switching to a new brand. When funds allow, you can upgrade to the matching centre in B&W's range. Alternatively, you could trade in your existing centre speaker and use your £1,000 budget to buy all three. If this option takes your fancy, think about speakers from Dynaudio, PMC and Ruark.*

*But although multi-channel music reproduction looks set to increase in popularity, the best way to hear "majestic Mahler" is still through a traditional two-channel amp and speakers, rather than forcing a two-channel source through a processed surround effect as you are doing right now.*



## Naim that tune



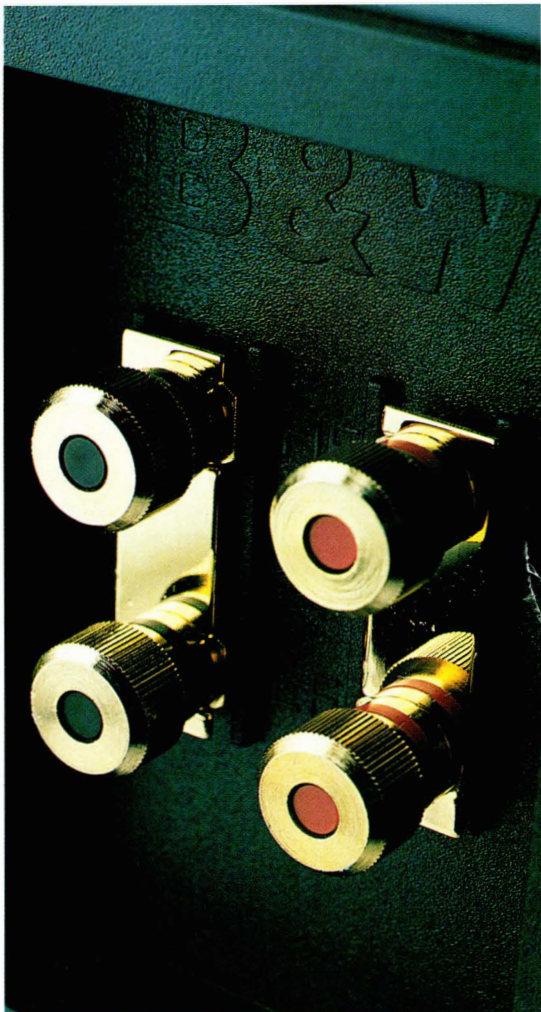
I've just got a Naim Nait 3R amp and I'm looking for a loudspeaker and CD player to go with it. I currently own a Marantz CD-63 Ki-Signature player and B&W DM602 speakers. I know they don't go well with the amp at all – could you advise me of alternatives? My system has to be a real all-rounder.

Jansen Phee, London

*Good though Naim kit is, it can be difficult to find synergetic partnering gear. You might find Naim's CD3.5 (£1,000) is your best bet, especially if you like your music with plenty of gusto. If that's pushing your budget, the Rega Planet (£450) works well with Naim kit – it's a player of similarly rhythmic ilk. Others to consider include Musical Fidelity's A3CD (£799) and RCD-991 (£750).*

*As for the speakers, again, it's worth looking at Naim: the Intro (£680) and Credo (£1,090) models combine with the Nait 3 to make a crisp, foot-tapping sound. Epos is another classic match. Finally, listen to something like Dynaudio's Audience 50 (£577).*

**Naim CD3.5.**



## Twin peaks



I recently purchased a new system, including KEF Q75 speakers and a Marantz PM-8000 amp. At present I'm single-wiring the speakers, but I'm considering switching to bi-wiring. What advantage would this give me, and what cables do you advise? I usually listen to pop music, jazz, big band and sometimes classical music.


Henk de Boer, via e-mail

*Bi-wiring involves sending twin runs of cable from the amplifier to each loudspeaker, attaching separately to high and low frequency terminals. If an amp has two sets of speaker terminals, as yours does, then you can simply buy an additional pair of cables, but amps with only a single set of terminals can also be bi-wired via specially designed bi-wire cables. However, only speakers with the requisite high and low frequency cable terminal sets can be bi-wired (four terminals in all per speaker).*

*Bi-wiring basically separates the ground paths to the amplifier which can result in lower distortion. This can mean a purer, more focused sound, but the benefits vary from speaker to speaker – some sound notably better when bi-wired, others fare perfectly well without. Your KEFs fall into the former camp, and we would certainly recommend you invest in a full bi-wire set of cables. Four runs of QED Original Silver (formerly Qudos Silver) would do the job at £5 per metre, or try Straight Wire Quartet at £8 per metre.*



## Mr Byrite

 My system consists of Mission 705 floor-standers, a NAD 312 amp, Technics SL-PS670D CD player, in-the-box interconnects and Vivanco speaker cable. I'd like to upgrade my CD player and amp but I don't want my system to become too aggressive. I like the big sound from Missions and I'm looking for some extra presence, detail and a bit more power – I think the NAD amp is a bit too weak-sounding. My room measures 5x3.7m and my music taste is wide.

I'm considering Rotel's RCD-991 or RCD-971 CD players, or maybe the Marantz CD-63II KI-Signature or even the CD-17. Amp-wise, something like the NAD C340 or maybe the C319. I don't know what it's worth spending. Please give me some advice. I want my system to be as musical as the speakers will allow.

Zoran Dolar, Slovenia

*The only person who can decide how much to spend is you, by auditioning kit at different prices and assessing*


*the difference. Start off at lower prices, with CD players like the Sony CDP-XB930E (£300), Marantz CD6000 OSE (£300), Arcam Alpha 7SE (£350) and Rotel RCD-971 (£350). Partner these with similarly priced amps from Sony, Arcam and NAD, like the C340 you suggest. Given that you don't want an aggressive sound, and the Mission's tweeter can get edgy if you're not careful, Arcam's slightly smoother treble quality might suit you.*

*Once you've found a combination you like, try swapping out the CD player and amp for more expensive components – Rotel's RCD-991 CD player (£750) would make a good choice, or an amp like Roksan's Caspian (£895). If you think the sound improves, and that improvement is worth the extra, you've made your decision. You should also look at upgrading your cables, based on the components you chose. Van den Hul's D102 MkIII interconnects (£70) and QED's Original Silver (formally Qudos Silver) speaker cable would be good places to start.*



Roksan processor/amp combo.

## Cable casualty

 I'm running my Sony DVP-S725 DVD player through a Yamaha DSP-E492 processor using three pairs of interconnects from the 5.1 output of the DVD player.

Is my processor digital? If not, would the Sony STR-DB930 digital amp do the job? I'm using the processor hooked up to a Densen Beat amp, with Scart-to-Scart connections between DVD player and TV. I'm told I should be using Scart-to-S-Video inputs. I have S-Video on the DVD player but not the TV – is S/video for sound or picture?

Mark Preen, via e-mail

*Your Yamaha processor is an analogue Pro-Logic unit, so you can't feed it directly from your DVD player's digital output. Your audio connection is correct. To upgrade your best bet is a processor/power amp combo with a serious hi-fi angle, such as those from Roksan, Tag McLaren, Primare and Cyrus.*

*S-Video connections are for picture only, how you make the connection depends on your TV and DVD player. The best approach is to use a fully pinned Scart and configure both DVD and TV to operate in RGB through that link.*

## Solid foundations



I'm not happy with my hi-fi system but I can't seem to put my finger on the problem. The thing is it just doesn't thrill me. There's no real detail, no beautiful bass; there's just sound and no music. It goes loud, but I'm into easy-going pop and gentle classical music of the string quartet/chamber music variety. My system consists of Marantz CD-63SE CD player, B&W CDM1 speakers, NAD 114 preamp and a pair of NAD 214 power amps as monoblocks, with van den Hul Clearwater speaker cables and PB interconnects. What can I do?

Iggy King, Holland

*There's nothing overtly wrong with the kit you're using, except perhaps that all the components are a little laid-back in character; however, they're all articulate in the way they present music, and their combined talents should suit your choice of music quite well. Perhaps the best option would be to look into your equipment support.*

*First port of call to inject some verve into your hi-fi would be Mana Acoustics. Its supports aren't the cheapest around, but their effect is marked: sound appears tighter and faster, with more engaging focus. Try an open and rhythmic-sounding pair of speaker stands as well, like Partington's A-4 (£119), perhaps with a couple of Mana Sound Base supports (£175).*

*But have a listen to some new components too – you may decide that replacing a major component is the way forward.*



Mana Acoustics supports.

Can you recommend speakers in the £100-£150 price bracket?

Darren Rhodes, Burnham

Try the Tannoy mX1 (£120), Acoustic Energy Aegis One (£150) and B&W DM302 (£150).





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## BUYING GUIDE TO TURNTABLES



Ever since the digital dawn, the imminent demise of vinyl has been predicted. CD has long been the dominant music carrier, and the impending DVD-A and SACD onslaught has heralded the digital discs' latest evolutionary phase. But the black stuff's proving stubborn. Turntables are still being made and they're better than ever; the companies that have remained in the business are in a love affair that will never fade. The year 2000 is vinyl's halcyon age.

So what is it that makes this cumbersome old format so enduring in these convenience-obsessed, vinyl-starved times? On a practical level, many of us have irreplaceable record collections and need something to play them on, but the appeal goes deeper. There's the satisfyingly tactile nature of software and hardware, the hands-on interaction beloved of DJs and hi-fi nuts alike; the beauty of turntable mechanics and the gorgeous kinetic sculptures formed by the most desirable designs. And most of all there's the sound – CD may offer ultra-low noise and a flat frequency response, but it can't match the dynamics and timing of a serious turntable. Perhaps DVD-A and SACD will give digital sound the chance to catch up.

### How much should you spend?

Decide how important vinyl is to you. A large record collection is likely to prove an important source of music for years, so spend as much as funds will allow. However, if vinyl is really a secondary thing for you there are several budget designs that offer serious sound for your pound.

Another thing to consider is ease of operation. Some turntables at the lower end of the scale offer automatic or semi-automatic operation, which makes things more convenient, but few of the type compete sonically. The best performing entry-level turntables are usually manual, even down to the user shifting the belt on the spindle to change speeds. But further up the scale are some excellent models offering electronic speed change – handy if you regularly switch from 33.3rpm to 45rpm.

### What else do you need?

Some turntables come without tonearms and cartridges, so you may need to budget for them. However, that's part of the fascination of a good turntable – there's so

much scope for customising and improving the sound. On the arm front, Rega's ubiquitous RB300 (£174) is superb value and compatible with most turntables. If you can stretch further, there are more exotic designs available from the likes of SME, Naim and Wilson Benesch.

A good cartridge is paramount to a turntable's performance – you'll find some useful recommendations in our *Directory*. Make sure you choose one that's compatible with your amp's phono stage – some only take moving magnet designs, as opposed to moving coils, which need additional amplification to raise their signal to line level. If your amp doesn't have a phono stage built in, or you're looking for an effective upgrade, turn to p75 for reviews of the latest standalone phono stages.

### Setting up

Turntables are highly sensitive devices which use a transducer (cartridge) to translate the mechanical undulations of the vinyl groove into an electrical signal. As a result they're highly sensitive to setup.

As a starter, ensure that the surface supporting the deck is level – it's best to use a dedicated support, like those from Mana. If you have to use a support occupied by other equipment, consider extra isolation like a Townshend Seismic Sink; if your speakers are close to the deck you may find wall-mounting the best option. Next, use whatever means is on the deck itself to ensure the platter is level. Suspension systems require tuning to achieve optimum results.

Cartridge alignment is vital to performance, and one advantage of dearer tonearms is they're easier to adjust. Use an alignment protractor to set optimum tracing angle and use your ears and eyes to set VTA (vertical tracking angle) by adjusting arm base height. Tracking force is also critical and should be set via the tonearm according to the cartridge manufacturer's instructions (and your ears).

### Taking care of your records

Your records should give many years of noise-free pleasure – just handle with care. There are some expensive but highly effective mechanical cleaners available, like the VPI HW 16.5 (£425), but for most users a carefully-used carbon fibre brush should suffice. Alternatively let your stylus do the cleaning instead, then clean the stylus tip.



## SIX OF THE BEST

### AVID Acutus £4,995

A gorgeous turntable with no apparent shortcomings. Worth every penny to a vinyl obsessive.

### LINN LP12 Basik £1,100

The entry-level version of the original high performance turntable. One of the few hi-fi components that truly deserves its classic status.

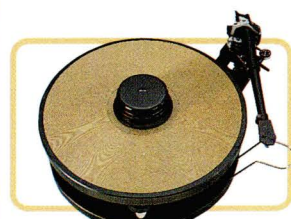


### MICHELL Gyro 'SE' £775

The stripped-down version of the Gyrodec, still one of the most desirable turntables available.

### REGA Planar 2 £214

This classic budget turntable is arguably still the best way into vinyl, although there's now strong competition from Czech-based Pro-ject.

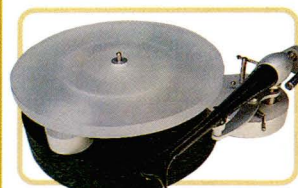


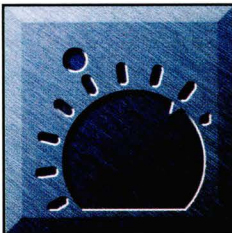
### SME Model 10A £3,333

For some, SME is the only make of turntables and tonearms worthy of consideration. This is the 'entry-level' model, complete with Series V/309 hybrid arm.

### WILSON BENESCH The Circle £795

Sheffield-based Wb has used its design prowess and carbon fibre to create a turntable beautiful in both form and function.





# PAUL MILLER'S OASIS OF SANITY

Paul does realise that not everyone listens to their favourite tunes under lab conditions, you know...

**W**hile all hi-fi magazines, including *Hi-Fi Choice*, are content to recommend their favoured separates and systems, it's almost impossible for us to legislate for the different and often conflicting environmental conditions endured by our readers. The most obvious example of this lies in the effect of different room shapes, sizes and acoustics on the 'real world' performance of your chosen loudspeakers. After all, what works well in one room may sound far less impressive in another. Anyone who's moved house and transplanted a once-familiar system into an alien environment will know precisely what I mean.

The pollution of your system's electrical environment can be equally damning, not least because its perpetration is largely invisible and its symptoms unpredictable. Even with the raft of accessories that are available, such as mains conditioners, specialised IEC power cords and RF filters, it's still difficult - if not impossible - to get a grip on what's going on. The fact that different types of mains-borne and radiated interference change throughout the day, depending on local supply loading and what you and your neighbours have powered up at any time, just makes the 'pea soup' less easy to forecast.



The massed audiophiles were so upset by its RF interference that they decided to lynch the Great Big Light.

Close Encounters of the Third Kind courtesy of Columbia Tri-Star.

**"What works well in one room may sound far less impressive in another. If you've moved house, you'll know what I mean."**

Neither is CE-compliance any guarantee your new amp or CD player will sound consistently marvellous in every location. This chunk of Euro-regulation was conceived to cover gross incompatibilities, such as preventing vacuum cleaners and sewing machine motors from sending sparkles across your TV picture, for example. It was not designed to ensure that hi-fi sounds great. In practice the reverse is often true, for in a

heavy-handed attempt to pass RF emissions and susceptibility tests, many manufacturers end up compromising the *sound* of their products.

Furthermore, just because a hi-fi product has a CE sticker slapped across its posterior, this doesn't mean it'll be immune to every type of electrical interference encountered in real-life locations. When I say 'electrical interference', I'm not talking about your hi-fi picking up

broadcasts from the local cabby or ambulance station. The sort of environmental rubbish that affects the average hi-fi is far more insidious, often encouraging the sort of harsh and grainy sound associated with long-term listening fatigue.

Ever wondered why your system sounds smooth and spacious one day and somewhat 'flatter' and less colourful the next? An intermittent, low-level interference could well be the cause, whether it's your central heating system whirring into life, your neighbours vacuuming their house, or using fan-assisted electrical heaters, cooking the Sunday roast or a dodgy dimmer switch



Figure 1: Distortion trend of amplifier under ideal conditions.

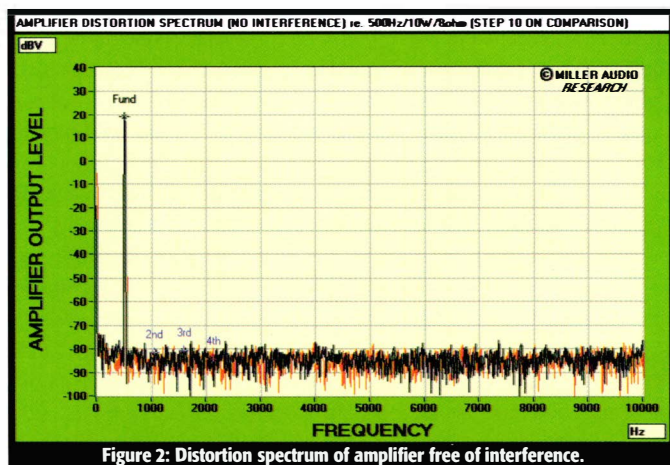


Figure 2: Distortion spectrum of amplifier free of interference.

kicking out a cloud of RF (radio frequency) noise.

Wherever you turn, something, somewhere, is polluting the electrical environment of your hi-fi system. These problems are typically magnified for hi-fi that's auditioned in large office buildings where vast air-conditioning systems, photocopiers and leagues of networked PCs join forces to give the most resilient of kit a hard time. Fortunately, *Hi-Fi Choice's* group tests are typically conducted in rather more representative, domestic settings.

**SMOOTH OPERATOR**

If we take a look at the distortion spectrum at point (1) on figure 2 then it's clear that any harmonics (labelled 2nd, 3rd and 4th) are buried within the noise over an impressive 100dB range.

For example, the fundamental peak at 500Hz is labelled "Fund" at +20dBV while the noise lies below -80dBV, yielding a range of over 100dB or 0.001 per cent distortion. This, combined with the amplifier's other technical virtues, encourages a very smooth and trans-

performance of the amplifier.

The answer lay in a fluorescent lighting strip some distance from the listening area, a 'tube' with a faulty starter that was causing it to flicker very slightly. This, in turn, resulted in bursts of RF interference both via the mains supply and as a radiated emission.

**ILLUMINATING THE MAIN PROBLEM**

While these high RF frequencies are well outside the audio band, semi-conducting elements within the amplifier circuit were demodulating this energy and releasing a noise-like distortion back into our audible range. The process is called intermodulation or IMD, whereby an amplifier handling two or more frequencies produces a small distortion component at the *difference* between the two values. For example, tones at 19kHz and 20kHz might result in distortion at a lower 20-19=1kHz.

In the case of RF IMD, noise at many MHz may, in some amps, result in a momentary 'bounce' in noise across the audio range that is detected, during measurement, as an increase in distortion. This momentary increase in noise by 10dB or so is clearly visible on Figure 4 (compare with the 'equivalent' Figure 1).

Subjectively, we don't hear this noise modulation directly, but it does make listening more tiresome as our brains try to 'process' the music relative to a fluctuating noise floor. Noise that's constant, even sufficiently high to be directly audible (like tape or valve amplifier noise), is more readily ignored during extended listening, but noise that's 'moving about' in

sympathy with an external source of interference has no relation to the music at hand and typically results in a poor sound. In our case, once the offending fluorescent tube was identified and removed, the amplifier spontaneously resolved its composure.

Naturally, while such lighting strips are common to offices, neither are they entirely absent from domestic environments. Many people still use fluorescent tubes in the kitchen, workroom or garage, for example. So, if your hi-fi system sounds a little untidy for no good reason, try switching off those fluorescent tubes and dimmer switches, no matter how far away from your listening room.

**Do you have a subject for the Oasis? Please contact Paul Miller via e-mail at MILLER\_AUDIO\_RESEARCH @compuserve.com**

**"Wherever you turn, something, somewhere, is polluting the electrical environment of your hi-fi system."**

**OFFICE POLITICS**

I was given a timely reminder of this when conducting a series of listening tests on a new (CE-approved) amplifier at a purpose-built facility in an office complex.

Tested under strict laboratory conditions, the performance of this amplifier proved to be right on the money with particularly low distortion through mid and lower treble frequencies (typically between 0.001-0.002%) before picking up again at higher treble frequencies where its negative feedback had less impact (see Oasis issue 190, May 99).

Twenty individual points are plotted on Figure 1 to show the amplifier's pattern of distortion versus frequency, with the left channel shown in black and the right in red. The tenth point on this curve (roughly halfway, or 500Hz on a log scale) is highlighted (1).

parent sound that's both brimming with musical detail without sounding particularly busy or distracting. And yet during one listening test, the amplifier had sounded rather flatter, less able to capture the atmosphere of the piece and generally less engaging.

**TUBE TROUBLE**

So what was the cause? Running the same distortion versus frequency test at the same power level (10W into 8 Ohms) now revealed a very different trend. In this instance, intermittent increases in distortion were evident through the midrange, not least at point 10 (1) on the curve where the value had jumped from just over 0.001% (1) to nearly 0.006% (2).

Fair enough, these little 'jumps' in distortion are hardly enormous, but it does tell us that something is happening there to compromise the basic

**GLOSSARY**

**FUNDAMENTAL PEAK:** The main and typically the lowest frequency of any musical note is called the fundamental. Harmonics are integer-multiples of this. Test tone sine waves contain only the fundamental so any 'harmonics' constitute distortion.

**IMD (INTERMODULATION DISTORTION):** Unwanted signals caused by the interaction (or 'beating') of two - or, typically, more - musical signals (see RFI).

**NEGATIVE FEEDBACK:** Within the circuit, a small fraction of the amplifier's output is returned in anti-phase to its input. This determines the amp's gain (or boost) while controlling noise and distortion (see HFC 190).

**RFI (RADIO FREQUENCY INTERFERENCE):** Audible interference (clicks, pops or momentary increases in background noise) caused by electrical or radiated signals well outside the audio range (typically >100kHz).

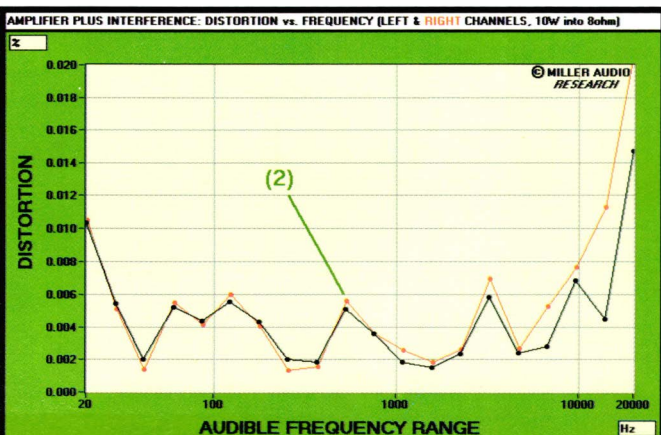


Figure 3: Distortion trend of amplifier under non-ideal conditions.

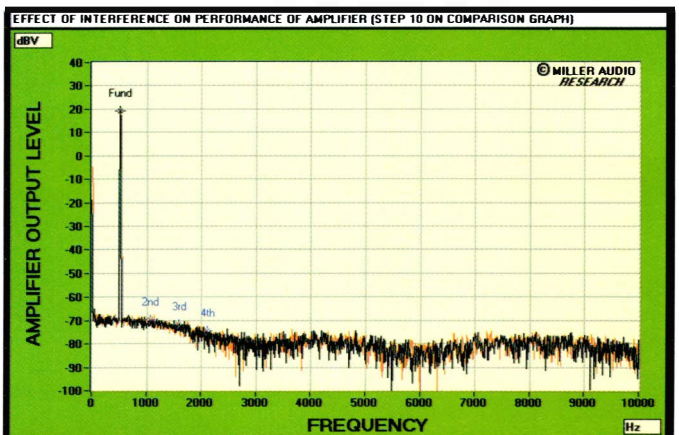


Figure 4: Increase in noise-like distortion caused by interference.



# One of Life's affordable luxuries . . .



## Hi-Fi Choice

(December '96)

Cable Talk Studio 2  
Sound \*\*\*\*\*

## THE VERDICT

▲ Tonally, dynamically and rhythmically a truly first-class cable

▼ Very little to criticise.

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(August '98)

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# TAKE Five

Yes, we know, you don't read *Choice* for all that multi-channel nonsense. But **Tim Bown** asks: what if a processor can do stereo well?

**“W**ho would have believed in the last days of the twentieth century...” the hallowed pages of *Hi-Fi Choice* have been invaded by surround sound. If this seems alien to you, relax. There's no cause for alarm. This is, and shall remain, a music-oriented magazine focused on high-fidelity performance; the synthetic 'thrills'n'spills' of home cinema are not what we're about. So why give space to surround sound processors like the Cyrus AV5?

The answer stems from DVD. This disc-based format's soaring popularity comes down to its multi-faceted talents, its players' ability to handle both two-channel music software and multi-channel movies. This has led to increased demand for single set-ups that can do both jobs without sonic compromise, and staunchly hi-fi electronics specialists are rising to the challenge. Companies

ethos. It is designed to be the heart of a multi-channel system, acting as a preamp to which one can attach all manner of source components, from DVD players to turntables (given the addition of a phono stage). It has all the on-board processing required to handle current multi-channel software, movies and all, yet promises real hi-fi performance when switched to stereo. This is the area that lets so many similar processors down, yet it is a vital consideration for anyone who requires their multi-channel system to play music, and play it well.

Our focus here is the £1,000 AV5, but rather than rest there, we thought it would be interesting to examine the concept in its most likely setting – a complete Cyrus amplification system. We also trace the various upgrade paths available, from the firm's entry-level amp system to its flagship monoblock set-up.

**“Anyone concerned by the complexity of many high quality multi-channel processors will find the AV5 a breath of fresh air.”**

like Myryad, Primare, Roksan and TAG McLaren all seeking to satisfy a demand that can only grow if, as expected, multi-channel music takes off too.

Of course, Cyrus has been in this market before, with fairly successful products like the AV Master bridging the gap between the disciplines of hi-fi and home cinema. Indeed, it believes such a gap should not exist – the ideals should be the same, and with careful design genuine convergence can be achieved. This is the kind of multi-channel kit we're interested in at *Hi-Fi Choice*, gear that promises more than a simple home cinema experience.

Cyrus' AV5 multi-channel processor was born from this

## THE PROCESSOR

Anyone concerned by the complexity of many high quality multi-channel processors will find the AV5 a breath of fresh air. Pull it from the box and its simplicity smacks you in the face: the usual shoe-box sized Cyrus case and a clean, stark fascia, with only the Dolby Digital and dts logos and a slightly oversized display hinting at its true purpose. This was all part of the game plan, as Cyrus toiled to make “the most saleable processor available” – compact and easy to use, yet of genuine hi-fi quality.

Setting it up is a relative doddle. Around the back are six



digital inputs, two optical and four of the more desirable coaxial variety. Into these the user can put any digital source – CD, DVD, DAB and so on – leaving the AV5 to deal with signal conversion from digital to analogue. There are also three analogue inputs, which one might use to connect a phono stage, say, or a CD player with a particularly high quality internal DAC, or perhaps a tuner and a VCR. There's also a 'tape' output for recording purposes.

Once you've hooked up your source components, and wired your power amps and speakers to the relevant sockets, you can be up and running in mere minutes. Accurate set-up of a

**How to make a hi-fi reviewer a very happy man: couple your basic AV5 with five aPA7s, crank it up – then duck.**

multi-channel system usually requires the use of a sound pressure metre, but here there's the option of automatic adjustment of volume and delay levels via a tiny microphone supplied in the box. It's a system developed for previous Cyrus multi-channel components, and simply involves placing the mic in the main listening position and waiting for a response to individual speaker tones. It takes a few seconds and seems very effective.

With only source and volume adjustment available via its fascia, you wouldn't want to lose the remote control. Mind you,



Your starter for five: Cyrus' entry-level combination of AV5 processor with three 50 Watt stereo XPA power amps.

the handset itself is pretty simple, with variables kept to a bare minimum, and the same goes for the AV5's processing baggage. You don't get any subsidiary effects or proprietary modes, just the contemporary essentials: Pro-Logic, Dolby Digital and dts. The relevant decoding system switches in automatically according to the source being played, and straight stereo is selected via a button on the handset.

But despite such relative simplicity, is it inevitable that on-board processing will hamper basic stereo performance? One processor that proves it doesn't need to is TAG McLaren's AV32R. At just under £2,000, it's a highly impressive multi-channel processor and a capable two-channel preamp. To gauge the AV5's abilities I compared the two directly, hooking up Arcam FMJ CD and Pioneer DV-717 DVD players via both analogue and coaxial connections. I used amps from Cyrus and Musical Fidelity, and a five-channel speaker package from Dynaudio's Contour range.

The AV5 with Cyrus Power plus PSX-R: the intermediate stage in our man's quest for multi-channel enlightenment.



Listening to the digitally linked Cyrus first, two-channel music performance was neat and well ordered, with good control and focus. It sounded notably more musical than the majority of similarly specified processors, yet it couldn't match the transparency of the TAG McLaren. The AV32R offered greater textural resolution with more authority in the bass, and appeared to give a little more dynamically.

Switching to analogue inputs but remaining in stereo mode, the Cyrus sounded rather more muted – still cohesive and controlled but lacking the leading edge detail a high calibre stereo preamp would provide.

However, there's no doubting the quality of its Crystal-derived processing when listening in surround. A five-channel Lyle Lovett dts CD and the film *Blade* on DVD highlighted considerable dexterity, although it still lacked some of the TAG McLaren's bite.

The TAG is also a more flexible beast in terms of its socketry, processing options and programming facilities, although at the expense of the Cyrus unit's appealing simplicity. And remember – the AV5 is half the price.

### THE COMPLETE AMP SYSTEM

The entry-level Cyrus processor/five-channel power amp combo employs three XPAs, the company's basic £350 stereo power amp rated at 50 Watts per channel. One of these is assigned to the main front speakers, one to the rears and one to bi-amp the centre speaker. For the purposes of review, I employed a Pioneer DV-717 as the source.

The first thing I listened to was Lambchop's *Nixon* on CD, a fragile concoction of soul and country, infused with Pulpesque tension. First impressions were of a coherent and controlled sound, pleasantly even but lacking some expression.

Comparison with Audio Analogue's £650 Puccini Remote stereo integrated amp put it in perspective: the Cyrus partnership sounded tighter and perhaps a touch more dynamic, but rather opaque overall. The Puccini was looser in the bass but more organic sounding, delivering finer detail and greater three-

dimensional depth: essentially a more musical performance.

But such criticisms lose some relevance when you consider the combo's multi-channel abilities. It beats most five-channel partnerships I've heard with Dolby Digital and dts-encoded music, bathing the listener in an unusually articulate sound field. Likewise, only punters seeking a particularly visceral experience could complain at its delivery of film soundtracks at this kind of price level.

### THE FIRST SYSTEM UPGRADE

To raise performance a notch, I swapped the XPA driving the stereo front speakers for the £500 Cyrus Power, a 50 Watt per channel power amplifier with a higher specification. For music fans this makes a highly effective option – in stereo mode this is the only amp employed, and the comparative effect when playing a CD is like lifting a veil from the music.

Instruments and vocals gain presence, and the whole thing twists into sharper focus. From a multi-channel perspective, any fears that the amp change may upset tonal balance prove unfounded – everything continues to gel, and both music and movies benefit from an extra degree of definition.

### FURTHER UPGRADES

From there I tried adding an optional PSX-R power supply to the Power amp – an upgrade not available with the basic XPA – and found small but worthwhile gains in detail and focus, particularly notable with stereo music sources.

Fine so far. But how about changing the centre speaker's XPA for the top-ranking, zero feedback aPA7 mono power amp? This 150 Watter doesn't come cheap at £950, but its superiority was clearly evident. In fact, its increased power and resolution somewhat unbalanced the system, dominating proceedings through the centre channel.

This made me eager to try more, so I swapped out the Power amp for a further two aPA7s to drive the front stereo speakers. Now things were really cooking. Music was presented with superb grip and drive; more open, detailed and dynamic. I completed the

### TIM'S CYRUS AV ODYSSEY, STEP-BY-STEP

1. Start with the entry-level system – the AV5 with three XPA power amps: £2,050.
2. Swap the XPA powering the front stereo speakers for a Cyrus Power: £2,200.
3. Add a PSX-R power supply to the Cyrus Power: £2,550.
4. Swap the XPA powering the centre speaker for a mono aPA7: £3,150.
5. Change all remaining power amps to aPA7s – five in all, one for each channel: £5,750.

set-up with a final pair of aPA7s powering the rear and the quality was obvious – as a means of delivering both stereo and multi-channel sound, this is one of the best amp systems I've heard. True, the calibre of its two-channel performance is largely down to the superb (if a touch dry) aPa7 partnership and in spite of the AV5, rather than because of it. A top-notch stereo preamp would help deliver even more of the music, yet this remains one of the least compromised full-on multi-channel systems around.

### CONCLUSION

Music is the great leveller where multi-channel processors are concerned. They may thrill with a movie soundtrack, but few can play music with real hi-fidelity credentials. On this score the AV5 comes closer than most, especially at its £1,000 price point. What's more, when matched with Cyrus power amps it forms a discreet, practical and flexible multi-channel solution.

Perhaps it won't suit avid fans of *Changing Rooms* – it lacks the metaphorical frilly cuffs – but its thoughtful simplicity is refreshing (and pretty rare).

Hi-fi quality multi-channel for the real world? That just about sums it up.

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £1,000.00

It won't match a top-notch preamp with stereo material, but few processors are as adept with music. An effective multi-channel solution for music fans.

■ ONE YEAR GUARANTEE

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## DASHING YOUNG THINGS

Do Samuel Johnson Audio's first amps perform as smoothly as their seductive curves would suggest? **Jason Kennedy** finds out.

**A**s recent newcomers to the industry go, Samuel Johnson Audio appears to be one of the more media-savvy. Proprietor Jim Cooper clearly knows a thing or two about marketing; you can't have been reading the hi-fi press over the past few months and not noticed the brand's distinctive approach. Advertisements featuring SJ's dictionary-writing namesake and, presumably for contrast, a Marilyn Monroe lookalike have appeared across the board. Then there's the products themselves – a small range of components dressed in very classy containers. The look was inspired by the dashboards of fancy cars, but few vehicles I have come across use real wood and anodised aluminium quite as effectively as Samuel Johnson Audio has.

Each fascia is made up of a precision-cut aluminium extrusion and a matching solid wood fillet, the two butting together perfectly and forming a very attractive curve. You can order almost any practical combination of anodised finish and wood: SJ Audio has a tantalising chart of the possibilities for you to choose from.

The power buttons are quite unusual too, sitting in dimples that could have been formed by pressing a small egg into Plasticine, but are in fact milled out of the extrusion – a process that took an awful lot of perfecting, I'm told. But if you want a classy looking product you've got to pay close attention to the detail as well as the whole.

The pca100 preamp, ppa100 power amp and pdc100 digital-to-analogue converter are the first SJ Audio components to make their way to retailers and reviewers alike. For the time being, we're sticking to the amps – when the CD transport we saw at the Bristol show makes it through production, we'll have a go with SJ Audio's front end too.

The pre/power combo costs £4,000 all in, taking it into some pretty competitive terrain. I'm told that it's actually easier to sell distinctively styled kit in the high end than it is in hi-fi's 'mass market', so it looks like Jim has been doing his homework here too.

### HE IS THE EGG-MAN

The audio engineering in this small but attractively formed range comes from Norman Johnson, a hi-fi enthusiast whose career took him through sound engineering at the BBC via military electronics into control circuitry and networking systems before he decided to have a go at hi-fi for a living.

This background may have something to do with the unusual control system on the pca100 preamp, a remote control device with two rows of LEDs which indicate the

The remote itself is more desirable than most, a solid aluminium 'egg' anodised to match the amp's fascia and fitted with four blue, rubber buttons. Using these to precisely set volume is a fine art, however: I had some difficulty balancing volume with an SPL meter, but in general use it's not a big issue.

The internal design of both units shows almost as much attention to detail as the exterior. The preamp features four separate power supplies, each with its own toroidal transformer, a four-layer PCB and



**"The remote itself is more desirable than most, a solid aluminium 'egg' anodised to match the amp's fascia."**

source being heard and the source being diverted to the tape output, or 'listen' and 'record' as they are more usually known; it's just that I don't recall an amp with such neat means of selecting the two.

This one operates with two buttons on the dinky four button remote, or via two of the five buttons on the unit itself. The system does have one minor shortcoming, which is the inability to tell visually what level the volume is set at.

'the finest quality audio grade components'. All professional stuff, but the company's rookie status was revealed with an intermittent fault on the first sample of the preamp and a loose connection on the second. I suspect that packaging quality may have been the real culprit – it takes experience to realise how tough carriage can be on precision equipment.

The more expensive of the two components is the ppa100 power amp at £2,200. This is conservatively rated at 50 Watts



into eight Ohms and is claimed to double that into four, and the results I got would suggest this is likely to be the case. Specifications include twin mono design down to the 300VA toroidal transformers, star earthing and the use of what SJ Audio considers to be the finest components.

The most unusual thing about this amp is the use of Neutrik Speakon loudspeaker terminals, bayonet-type connectors into which bare speaker wires are clamped. It's probably a superior connection to 4mm plugs, or even spades, because of the self-wiping aspect of the plug, but the closely spaced 3.5mm cables sockets and plastic collet mean that many types of cable can't easily be used. However, I'm told that SJ Audio might revert to more traditional terminals should the response from dealers be less than enthusiastic.

**SOUND QUALITY**

I brought this pairing into the system one component at a time in an attempt to separate their performances. First up was the pca100 preamp which features six line inputs, four

line outputs, two tape outputs and an optional phono stage (not fitted). That's nearly as many outputs as inputs, which suggests SJ has more than half an eye on the multi-room market.

Also included is a rear-mounted headphone socket, an approach that Cyrus has used in the past but one that's going to be hard to access in a lot of installations.

The preamp's sonic character seems to be highly neutral and transparent - except for a subtle treble edge that affects everything that passes through it. On the plus side, you get a great sense of detail and the unit's inherent transparency certainly lets a lot through; it also has a good sense of timing. Whether the latter is entirely due to the emphasis on higher frequencies is hard to tell, but timing qualities are usually associated with the definition of leading edges and these are generally in the treble range.

On the negative side, there's a tendency toward fatigue with certain instruments, but on the

whole this isn't a problem. Non-acoustic music seems to benefit as often as not, and the characteristic can be countered with careful cable selection. In other respects, the pca100 is hard to fault. It images well and copes with all manner of material in a controlled and coherent fashion.

The ppa100 is much harder to pin down. Initially I couldn't hear anything untoward coming from this compact unit. It seems to do just about anything that the signal asks of it, and does so in a nimble and controlled manner.

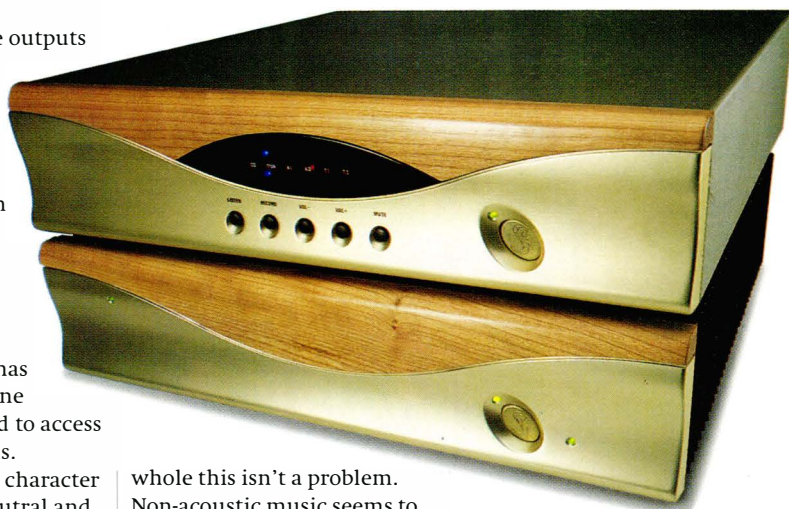
I was concerned that the step down from the very able 200

Watt Gamut I normally use might be a large and ungainly one, but the SJ seemed to follow in its footsteps in almost seamless fashion. It dealt with Nautilus 804s and Living Voice Avatars as if they were two-way standmounts (neither is a particularly easy load), producing solid lows and sparkling highs without duress.

Its chief talent lies in its good sense of timing, but this time without any undue emphasis on treble energy. There is a slight dryness that won't suit all loudspeakers, but this was much less apparent with the Living Voices.

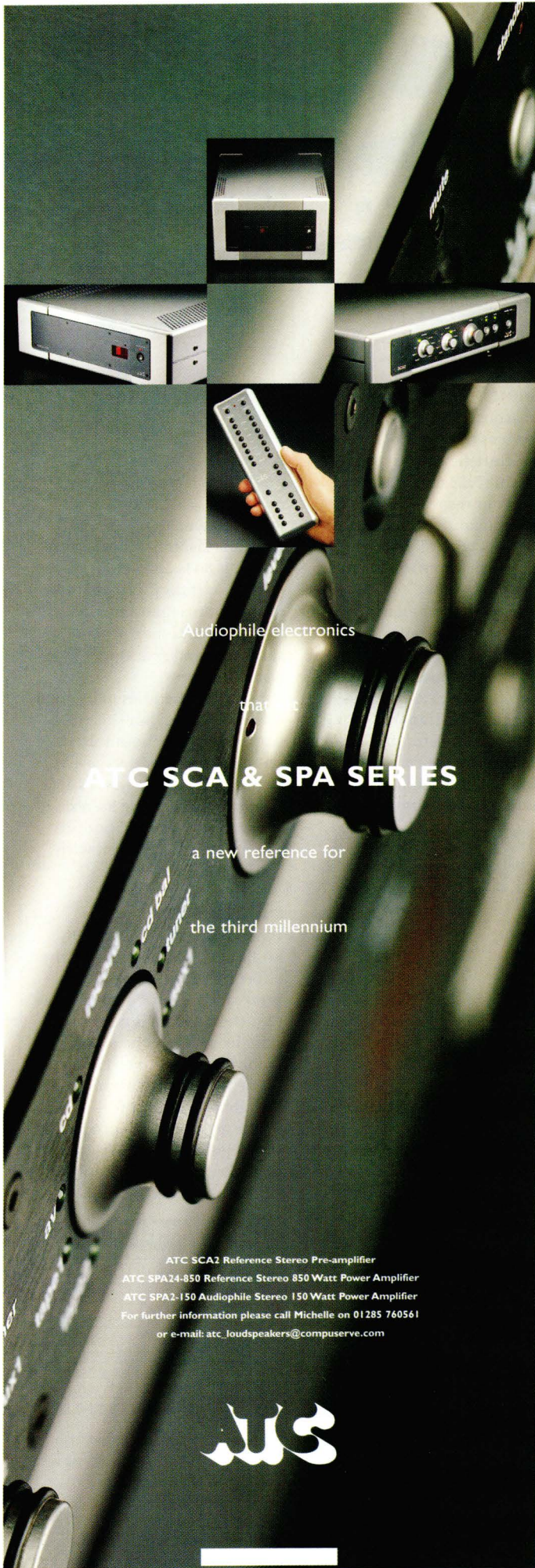
**CONCLUSION**

When I first saw the SJ Audio kit I was concerned that all the effort had gone into the very pretty facias, but I'm glad to say that their appeal is more than skin deep. While the power amplifier seems to be the better of the two halves here, neither is shabby when it comes to the subtle art of audio reproduction. I look forward to seeing (and hearing) new components from this distinctive brand.



Samuel Johnson decided to emulate the dashboards of luxury cars with its facias.

VERDICT	
SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	pca100 £1,800.00
PRICE	ppa100 £2,200.00
<p>Two great looking components with clean, neutral sound. The power amp is the stronger of the two but neither is likely to hold the sound back.</p> <p>■ TWO YEAR GUARANTEE</p> <p>(01292) 470000</p>	



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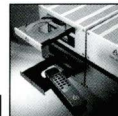
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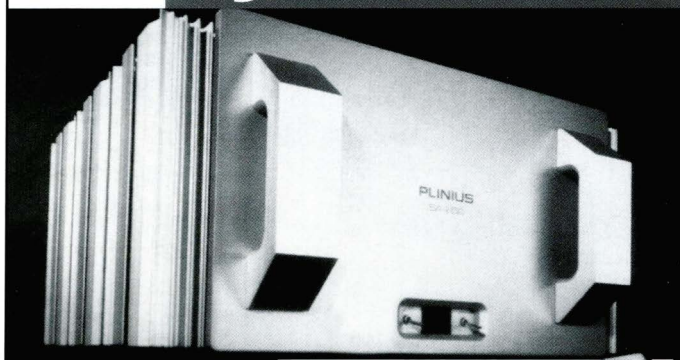
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# SUPER TEST

# AMPLIFIERS

**Alvin Gold** reviews six new amplifiers and discovers they're not all as clever as they look.

## THE CAST LIST

Arcam FMJ A22	£999.90
Electrocompaniet EC1-3	£1,000.00
MVL A2	£970.00
Opera Aida	£795.00
Primare A-10	£499.95
Roksan Caspian	£795.00

The six amplifiers in this group range between £500 and £1,000, and deliver power outputs between 50 and 100 Watts per channel. Some have phono facilities (or can have a phono board added internally), but most are line level amps with fairly rudimentary facilities which rarely include tone controls, although the MVL model makes a virtue of just this with a rather different kind of tone control.

Remote control has thankfully become part of the furniture these days; most of the models tested are equipped with some form of remote control, and another – the Opera Aida – should be available in a version which has remote

## GLOSSARY

**CLASS A:** The way of using an amplification device with the minimum of distortion. However, an output circuit operating in Class A yields only about 20 per cent efficiency; it dissipates the other 80 per cent as heat. That's why Class A amps run warm and offer relatively low power.

**POWER SUPPLY (PSU):** Alternating current (AC) from the mains swings between large positive and negative voltages. A hi-fi amp needs a few tens of volts at an unvarying level, ie direct current (DC). In crude terms, the amp steps down the mains, 'rectifies' the positive and negative alternating current to give fixed voltages, and finally smooths everything to be as clean as possible.

**WATTS PER CHANNEL (WPC):** In electrical terms, one Watt is the result of multiplying one Amp of current with one Volt. An amp's power rating in WPC thus describes how much electrical energy it can dissipate into a loudspeaker for each channel.

**MONOBLOCKS:** Stereo amps have two channels of amplification, for left and right speakers. Monoblocks have only one amplification channel.



**"Most amps are what might be called 'dumb', consisting of a pre and power amplifier and a bunch of switches and sockets in a box."**

controllable volume by the time you read this.

Other features that have become popular are split pre/power amp connections which allow outboard power amps to be used, often to bi-amplify a loudspeaker, which can be done with any speaker with bi-wireable inputs, although true bi-amping with active, low-level crossovers remains virtually unknown.

Another distinguishing feature that splits the models in this group concerns their fundamental architecture. Most are what might be called 'dumb', consisting of a pre and power amplifier and a bunch of switches and sockets in a box,

and very little more. The rest include a certain amount of 'intelligence', a good example of which is the Roksan Caspian, whose microprocessor performs a power-on self-test, monitors the output for overheating and other faults, looks after the remote control, drives the display and monitors power status (on/standby), as well as handling the source switching.

You might initially have trouble distinguishing a dumb amplifier from an intelligent one. Not all remote control amplifiers, or amps with output protection circuits, could be described as intelligent in any meaningful way, although the

Roksan Caspian, for example, does betray its heritage in various ways, for example with its particularly slick source switching, which is freed from the need for mechanical switches.

But the difference between the two groups becomes obvious with amplifiers like the Arcam FMJ 'butter-wouldn't-melt-in-its-mouth' A22, which is a ferment of technology inside. Its party trick is the ability to be reconfigured into a home cinema amp, or a multi-room server. Intelligence has been used in interesting ways in this design, with alpha-numeric readouts and a volume control that ignores rapid clockwise rotation on the basis that it was probably a mistake.

All of this is only a beginning. Intelligent amplifiers – and the Roksan and the Arcam are only examples of a burgeoning breed – will become more popular, especially as home networking begins to take off.

There are already prototype IEEE1394 (Firewire)-compliant systems which allow the user to control a multi-room system in very sophisticated ways.

The real beauty is that, unlike traditional extras like tone controls, it appears to be possible to add such features without spoiling the sound. This is an area we will be following as it develops, but develop it will...

## HOW THE TESTS WERE DONE

Each of the models on test was run in over an extended period, and thoroughly warmed up prior to each listening session. Source components used included Arcam FMJ CD25 and Krell KAV-250cd compact disc players and an Arcam FMJ DT26 digital radio tuner. Loudspeakers included the JM Labs Mezzo Utopia (every amp's worst nightmare) and Ruark Prologue One R loudspeakers (a more representative load for mid-priced integrations).

### THE TEST MUSIC

A wide range of music was used, but tracks from four CDs were used to provide some consistency, and are referred to in the review texts. They were:

**BILL FRISSELL:** *Blues for Los Angeles* from *Gone, Just like a Train* (Nonesuch 7559-79479-2)

**MAHLER:** excerpt from 3rd movement of *Symphony No 6* – Simon Rattle, City of Birmingham Symphony Orchestra (EMI CDS 7 54047 2)

**LORNA HUNT:** *Long Hard Road* from *All in One Day* (Classic Records RTHCD 1015)

**BRAHMS:** Evgeny Kissin – extracts from *Paganini Variations* (RCA Red Seal 0902668910-2)

## HINTS & TIPS



Amplifiers are a glutton for electricity. They need to be preconditioned with the stuff for some days before they reach peak form (but see MVL review), and they also like a shot of the stuff, typically for up to an hour (although even five minutes can make a surprising difference), before each listening session begins. Keep amps away from CD players and the like, ideally on their own shelves, and allow plenty of room for ventilation. One interesting trick that often works really well is to place a heavy non-metal object like a brick on the top of the amplifier – avoiding ventilation holes, of course.

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EXCELLENCE

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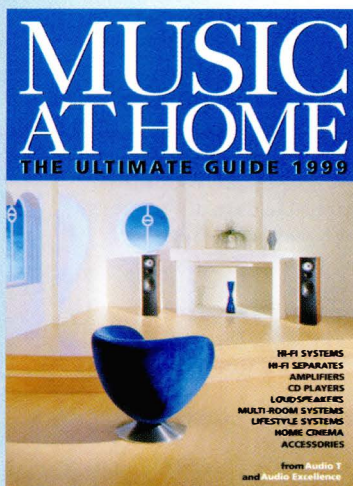
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# ARCAM FMJ A22



In one sense you might say that the FMJ series was designed to address the criticism that the familiar range had become rather tired aesthetically. Arcam's electronic designs over the same period have often been quite adventurous, and although there have been some clear misses, they have also chalked up some real successes. But all that time, the Alpha bodywork has soldiered on, looking increasingly like the audio version of a Ford Cortina, the serious intent of the circuits hidden inside partially undermined.

The FMJ A22 is essentially a transplanted version of the Arcam Alpha 10, in turn a clean sheet design intended not only to deliver more real world power than existing Arcam amplifiers, but also to offer class-leading flexibility.

On one level, then, the A22 is a stripped-down 100 Watts/channel stereo integrated amp with five standard line inputs, two tape circuits, a headphone socket and no tone controls. On another level, the multi-turn, high resolution switchable volume and balance control, and the large dot matrix display look rather like overkill for the job description.

There is method in the madness though, which is that the FMJ A22 employs an intelligent internal bus and a display so that the

**The A22's back panel features a plate where the MARC multi-room or DAVE multi-channel module fits.**

**"If it wasn't always the most exciting amp in the group, it was one of the most consistent, and most consistently enjoyable."**

amplifier can be reconfigured by adding internal modules. We're not talking about phono modules here (although an MM/MC step-up is available as an extra), but the MARC multi-room controller that turns the A22 into the core of a multi-room system, with additional zone amplification using the matching P25 power amp – which, incidentally, can also be used for bi-amping with the A22.

The alternative is the DAVE module which, with a 3-channel version of the P25, turns this model into a high-performance, 5.1 channel Dolby Digital and dts multi-channel amplifier.

The FMJ house look is based on a steel base with an aluminium wrap in a light grey paint finish, and a superb extruded aluminium fascia, which is thickest near the base, with fully machined controls. The finish and detailing of the A22 are first class, easily justifying the necessarily higher cost. A full system remote control is included.

### SOUND QUALITY

Early samples of the Alpha 10 sounded rather bright and coloured, but there seems to have been a learning curve, and the FMJ A22 is a much more refined and capable animal. The amp was

auditioned extensively, both in and outside the test group context, with consistent results.

In the formal comparative tests, the Mahler orchestral excerpt sounded relaxed, smooth, slightly distant and mellifluous, and similarly the piano recording sounded open and realistic, if not quite as vivid as with the Primare, for example. The Bill Frisell track, which features a very difficult bass line, was marked as just 'OK', but it clearly sounded rather plodding driving the JMLabs Mezzo Utopia speakers. However, this is a particularly stiff test for any integrated amplifier, and none of the other models in this test performed much better: it needed a Krell pre/power amplifier to bring this track to life.

Overall, the FMJ A22 is a better than average amplifier that sounded harmonically interesting and flowed well. Imagery was stable and consistent, with just a hint of image scale contraction, and dynamically it is the epitome of good manners, sounding sweet, tidy and reasonably, but not excessively, dynamic.

If it wasn't always the most exciting amplifier in the group, it was one of the most consistent, and most consistently enjoyable.

### THE LAB REPORT

With the capacity to sustain 110 Watts into 8 Ohms (both channels driven), Arcam's FMJ A22 is not only the most powerful amplifier in this survey but, thanks to its heritage in the form of the older Alpha 10, is also the most tolerant of difficult speaker loads. The electronic protection remains a little 'twitchy' however, causing the amp to mute before full power is reached at high frequencies. Still, better to be safe than sorry. Distortion, too, is very low both at high and low power, although the MOSFET output stage does witness a sudden jump in THD (from 0.007 to 0.15 per cent) in the last audible octave of its range. **PMI**

### CONCLUSIONS

The new looks aren't just about image. The use of aluminium reduces the ferrous content of the case, and increased structural integrity should pay its own aural dividends. Indeed, this appears to be the case, although correlating cause and effect is far from an exact science.

What can be said, however, is that the FMJ A22 is an excellent amp design with plenty of seamless power on tap, and that it gives a consistent and believable account of the music. It also looks the part, and on balance rates as fine value. **AG**

### VERDICT

SOUND	★★★★★
BUILD	★★★★★
VALUE	★★★★☆
PRICE	£999.90

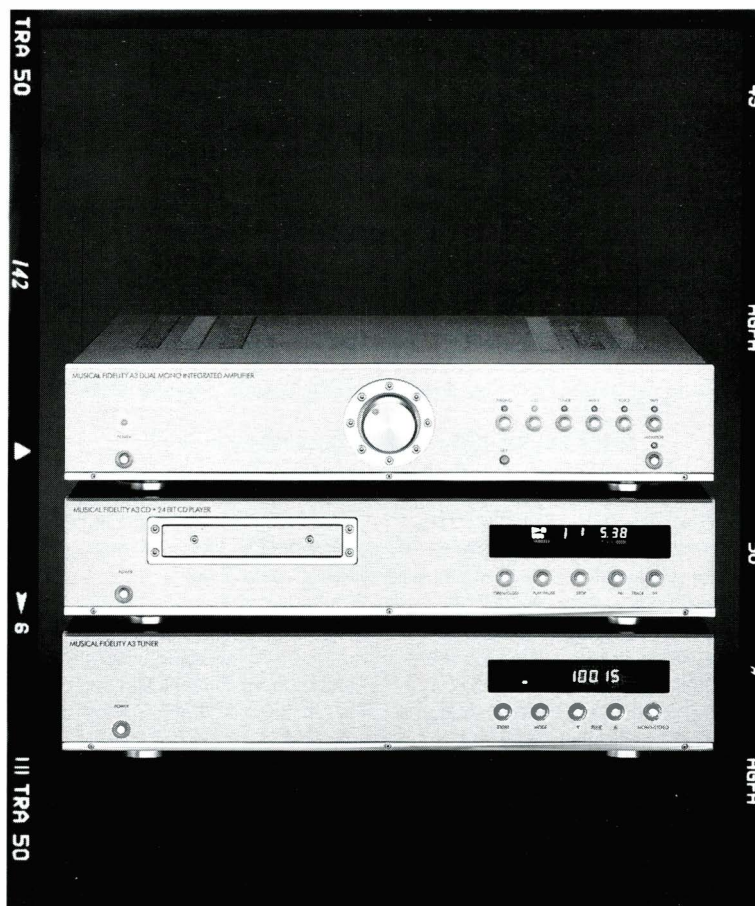
The sharpened-up styling and improved finish are matched by subtle mechanical and other improvements that finally see the repackaged Alpha 10 make good.

#### TWO YEAR GUARANTEE

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# ELECTROCOMPANET EC1-3



**T**his uncompromisingly bulky design has the usual Electrocompaniet hallmarks, including a visually very effective Perspex panel adding distinction and individuality to what otherwise might have been a rather dour piece of kit. The usual gold finished push-buttons are fitted too, but are used in an unusual way, the main control cluster operating the motorised volume control and selecting inputs. One of the inputs is balanced with a pair of XLR terminals on the rear, and this is matched to a balanced line output, which could be used to drive an external power amp.

The native controls simply switch inputs by relay – six line level inputs are fitted, including two for tape – but a remote control adds armchair convenience, and access to the 'mute' switch (actually a standby facility as it also cuts the main and tape outputs).

Control settings are echoed by clear labels for the inputs, and a rather vague blue LED which meanders uncertainly around the 'E' motif near the centre of the fascia. There is no balance control, which is a pity due to less than perfect channel balance at some volume levels. The company says a full system remote control will shortly become available, replacing the dedicated remote control supplied here.

The EC1-3 is moderately powerful at 75 Watts/channel, increasing

**Note the XLR socketry for the balanced in and outputs on the Electrocompaniet.**

**“Subtlety was generally at a premium, yet this most paradoxical of amplifiers was not beyond the odd very welcome surprise.”**

to a rated 120W into 4 Ohms, and 160W into 2 Ohms. Stability is guaranteed to 0.5 Ohms, and the unit has a very high input impedance – 330kOhms – which should ensure a predictable performance with most line level sources. The amp's output stage is driven by MOSFETs and is DC coupled, with full output protection (despite the inherent robustness of MOSFETs, which don't normally suffer from thermal runaway), coupled to an output relay.

### SOUND QUALITY

Balanced operation is an unusual provision on an integrated amp, and may even be unique, so we didn't waste much time connecting it up to a Krell KAV-250cd CD player and the output to a Krell KAV-150a power amp, in both cases using the balanced connections. The results were at best no better than the unbalanced inputs. This often happens when the internal circuitry between the balanced input and the balanced output is not maintained in fully balanced mode.

Tonally, the EC1-3 sounded a little dull and lacking in transparency, refocusing attention on the midband, which in many ways was everything it should be: expressive, raunchy, full of depth

and articulate. The bass was good too, but tended to run out of steam at high replay levels driving the JMLabs Mezzo Utopias.

The EC1-3's forceful quality stood it in good stead. A Ravel piano recording sounded percussive and solid, but with a slightly rasping edge to the higher notes, especially when played loud, although the dynamics were handled well.

Surprisingly, the Bill Frisell test track, which was handled poorly even by some of the better amps, sounded propulsive and dynamic through this one, and it was all but unique in being able to portray a sense of the power and range in the recording.

“Edgy”, “muscular” and “occasionally crude” were notes that arose on more than one occasion with this amplifier, which became clearly less comfortable when it was being hammered hard, especially when the source material had a substantial mid and high frequency content.

Subtlety was generally at a premium, yet this most paradoxical of amplifiers was not beyond working the odd and very welcome surprise, almost as though its very particular voicing just happened to work well with some music types and not others.

### THE LAB REPORT

**T**his is a very unusual amplifier, capable of sustaining a good 70W output via both channels from 200Hz to 10kHz (into 8 Ohms) while enjoying an exceptionally wide 97.3dB A-wtd S/N ratio (re. 1W/8 Ohms). Distortion, too, holds up well from just 0.002 per cent at low bass frequencies to 0.015 per cent at 20kHz. This is reliable up to about 15W into 8 Ohms, whereupon levels of distortion jump quite alarmingly to 0.2 per cent within 5W or so. Strong power supply interference is also evident around 20W/8 Ohms, suggesting that the EC1-3 will sound very different when driving relatively insensitive speakers. **PMI**

### CONCLUSIONS

Electrocompaniet amplifiers have a house sound which at best treads an uneasy line just the right side of hardness and opacity, but which can also be raunchily dynamic and oddly compelling.

In this case, the line seems to have been traversed, and although many positive qualities were in evidence here, they were offset by a plethora of problems, some of them major, some minor, which ultimately got in the way of the music.

The talent is there, however, and the EC1-3 should be well worth a listen. **AG**



### VERDICT

<b>SOUND</b>	★★★★☆
<b>BUILD</b>	★★★★☆
<b>VALUE</b>	★★★★☆
<b>PRICE</b>	<b>£999.00</b>

**Bold and dynamic, but a little too rough and ready for formal commendation, and there were disappointing findings, such as the channel imbalance and poor performance of the balanced circuits.**

#### ONE YEAR GUARANTEE

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# MVL A2

M V L A 2

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The MVL A2 B/B is an unusual, even revolutionary design that is also available in an enhanced '+’ version, with prices extending to £1,460. Here we’re testing the ‘base’ version (an optional remote control is available for £199).

Rated at 100 Watts/channel into 8 Ohms (no 4 Ohm figure is given), there are nine inputs, one a phono input, and five tape circuits, with off-tape monitoring available from three using different settings of the listen and record selectors. The headphone socket’s drive circuit is one of four Sound Sentinel enhancements included as standard, along with a pair of tone controls (also Sound Sentinels) with no centre detent.

Their most neutral settings are far removed from the notional flat settings, and their behaviour is closer to a slightly elaborated version of the traditional Quad tilt control, with limited action at the frequency extremes, but a significant effect in the midband.

A final Sound Sentinel works with the phono input to filter out noise and rumble, and an option pack (built into senior versions) is designed to perform such tasks as removing digital ‘edginess’.

The Sound Sentinel enhancement systems are circuits that work in the analogue domain – digital was tried but found to be

**The well stocked rear panel gives little away about the Sound Sentinel filters.**

## “The amp runs cool, with all components operating at no more than 50 per cent capacity, which should enhance reliability.”

intrusive, I was told – that are designed to assist rather than interfere with the sound. Their design is proprietary and confidential, but I was told the groundwork was laid over several years, and involved some thirty musicians.

A MOSFET design, the amplifier runs cool, with all components operating at no more than 50 per cent capacity, which should enhance reliability. As with almost any new product, there are some rough edges. The standard of finish isn’t ideal, and in particular the ‘play’ (actually ‘listen’) and ‘record’ controls are extremely stiff, and fitted with smooth, semi-conical controls, which will cause some finger problems.

The main transformer has noisy laminations, and there are significant levels of hum harmonics at the output, with noise becoming just apparent at the listening seat at high playback levels.

### SOUND QUALITY

The amplifier is rated at 100 Watts/channel, but in practice the results through the test loudspeakers belied this. It may be that the amplifier can deliver enough to meet – or at least approach – its power specification, but well

before it runs out of grunt, the sound changes and deteriorates, and even at moderately high volume levels the amp tends to sound constrained and shut-in. In other words, if the power is there, it is not usable in the sense that a similar output from some of the MVL’s competitors is usable.

There was also clear evidence that the amplifier’s voicing changed according to the nature of the speakers. This is not unusual, and in my experience is an issue only directly addressed by a few designers, but MVL states explicitly that its amplifier remains consistent from 0.5 Watts right through to maximum output, as well as claiming that no burn-in or warm-up time is required, and that the ‘sound is correct from first turn on, with no degradation of sound for the life of the unit’. Sadly, I would suggest that the amp lacks the transparency necessary to make this kind of claim.

And this really is the problem. The A2 simply doesn’t live up to the company’s promises. The Mahler recording sounded good but overblown in the bass, but the higher strings and, in other recordings, woodwind and brass, sounded edgy, yet dull and lacking

## THE LAB REPORT

With no centre detent for its dual tone controls, the Sound Sentinel A2 only provides a flat response when the bass knob is turned to 10 o’clock and the treble knob is set to 4 o’clock. This is hardly a position you are likely to arrive at by accident so, in most demonstrations, I imagine that the A2 will exhibit a somewhat colourful balance. Power output reaches 90W through the midrange but collapses to 40W through the treble, while distortion, although largely constant with power output, increases from 0.03 per cent through the bass to nearly 2 per cent at 20kHz! **PMi**

in detail or space, and our adjustments of the tone controls failed to address the underlying problems. The word “transistory” appeared in the notes, and in the Bill Frisell recording the bass sounded deep and powerful, but appeared to modulate the upper frequencies.

### CONCLUSIONS

The Sound Sentinel circuits are clearly important here, but there is no way to distinguish their effect from the amplifier’s performance as a whole. As it stands, the MVL A2 is idiosyncratic and messy, and moreover, changes in sound with level in a clearly audible way, and this is no basis for a recommendation. **AG**



## VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £970.00

A real oddity – which is really another way of saying listen for yourself, but this amp doesn’t meet our criteria for successful design.

### FIVE YEAR GUARANTEE

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# OPERA Aida



**O**pera is developing a complete line of electronics that are intended to maintain visual and musical compatibility with its extravagantly engineered range of loudspeakers

The Aida integrated amplifier is first fruit of the programme, and the first electronics product from the Opera stable, but it is manufactured for the company by Audio Analogue. Although independent in Italy, Opera and Audio Analogue share a UK importer, and the two brands frequently co-operate on the ground. Each uses the products of the other in their research and development programmes, so it's hardly surprising that Opera should turn to Audio Analogue to source its first amp.

The Aida is based on the Audio Analogue Puccini SE, but has been upgraded with the power supply from the Donizetti (a 60 Watts per channel power amp), which results in power output increasing from 50 to 60 Watts per channel. Other components have been re-specified for higher power operation or to improve production tolerances, and a protection circuit has been added.

In common with other Opera products, the Aida is well, if idiosyncratically dressed. The main carcass is a black-painted wrap, and the fascia has a rather crudely applied brushed aluminium panel.

What sets it apart is that the two end sections are dressed with well

**The Aida is based on Audio Analogue's Puccini SE, with a boosted power supply.**

**"Cosmetically, the sound started out well. Hum and noise levels were vanishingly low, for example."**

finished mahogany caps, shaped at the front to correspond with the almost kidney-shaped (or is that BMW radiator?) aluminium front. It's certainly different, although slightly offset by the rough-and-ready panel graphics and some awkward detailing.

Rated at 60 Watts/channel into 8 Ohms, the design is externally about as simple as they come. On one side of the fascia lies the volume control, and on the other side is the source selector, with indents for phono (internally selectable MM and MC), four line inputs and tape. There is no tape monitoring facility, headphone socket or any other gadget, unless you count the bi-wire speaker terminals and the solitary discrete indicator LED.

### SOUND QUALITY

Cosmetically, the sound started out well. Hum and noise levels were vanishingly low, for example, but it didn't take long to run up against some problems. There is very limited real-world power on tap with this amp before the treble starts to sound fragile and tinkly, and then breaks up, which is also accompanied by a flattening of the mid/bass region.

In any case, the bass feels rather wooden, and the midband

often sounded congested and lacking in clarity, especially when the music became dense or difficult. However, simpler (classical chamber or simple accompanied vocal) material often held up well, thanks in part to a solid and slightly prominent sounding upper bass and lower midband.

The Aida came a cropper with the test piano recording, which lacked presence and a proper sense of the percussive quality of individual notes.

The piano sound even became a little uneven with this piece, especially at higher volume levels, as though the bass was pumping in response to the high frequency music content – an odd and slightly unsettling effect, although not an easy one to pin down.

The Bill Frisell track sounded constrained and lacking in weight, and the Mahler symphonic excerpt seemed slightly blurred, although it did manage to convey a real sense of menace for the first and arguably the last time on that day.

### CONCLUSIONS

Although a solid state amplifier, the Opera Aida could be accused of sounding rather like one of the less successful breed of low cost valves. There's that tell-tale lack of definition and, although it did

### THE LAB REPORT

**A**lthough the response of the Aida is very flat and even, and though its 60W output is sustained right across the audioband, this amplifier may, nonetheless, prove sensitive to your choice of partnering speakers. Specifically, distortion remains very low at <0.006 per cent up to outputs of 20W into 8 Ohms, but then increases quite substantially to 0.2 per cent by 30W and to 0.4 per cent by 50W. Otherwise, the pattern of distortion versus frequency shows a mild increase in the bass, rather than mid and treble octaves. This suggests a shift in the 'colour' of the amp's sound, depending on how hard it's driving those loudspeakers... **PMI**

perform erratically well, it is just too loudspeaker and music-dependent to be fully satisfactory at present.

A remote control version fitted with the Alps Blue motorised volume control has been developed, and by the time you read this it should be available for a £75 premium. **AG**

### VERDICT

SOUND	★ ★ ★ ★ ★
BUILD	★ ★ ★ ★ ★
VALUE	★ ★ ★ ★ ★
PRICE	£795.00

As a toe-dipping exercise, the Aida can perhaps be forgiven its rough edges, but the wise money should see it as work in progress.

### TWO YEAR GUARANTEE

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# PRIMARE A-10



**T**he two best looking amps this month are the Arcam FMJ A22 and this one, the Primare A-10, which is a real chip of the old block, the A30.1 – which was described when we tested it as “arguably... the best looking and best turned out amplifier in [that] group, and this is praise indeed as there are some strong contenders”.

The A-10 is slimmer than the A30.1, but is otherwise similarly constructed from interlocking U-section alloy base and steel top panels, with a black painted, alloy slab front panel, and the trademark front panel extension to highlight the fact that the circuits for the front panel display are housed in a fully screened cage. This is an elaborate way to prevent the display electronics from making a monkey of the music, and could probably be more easily and economically handled by a screened internal cage, but what a great effect it has on its looks!

Operationally, this Primare is very straightforward, with a single, continuous turn (rotary impulse generator) volume control which operates with 1dB resolution over an impressive 79dB range, with channel balance accurate to within a claimed 0.1dB at all volume levels. Three buttons select the required input and invoke tape monitor, with provision for six line inputs, including tape, plus pre-out and main amp inputs.

This is a remote control amplifier whose handset offers volume, balance and source select, and basic controls for a tuner and CD

## “The A-10 got to grips with the intriguing temporal and tonal relationships and subtle dynamic shifts that punctuate this music.”

player. An aluminium-bodied remote is available as an option.

The input section uses a J-FET to define certain input parameters, which takes some days to come on song and should be kept powered by leaving the amp in standby. The power supply consists of a 220VA toroid and 20,000µF of reservoir capacity feeding several local supplies, some regulated.

The circuit is based on surface mount devices to minimise signal path lengths and maximise consistency. The output stage is bipolar, and DC offsets are controlled by servo rather than capacitors, but any substantial offset triggers a protection circuit.

### SOUND QUALITY

There are no doubts about this one. Here is an amplifier that knows how to boogie, even if it isn't quite well enough endowed to rock'n'roll with conviction when the volume's turned up. Nevertheless, this is a decently powered amplifier at the price, and moreover, one that remains consistent in sound quality and voicing over the whole range of volume settings within its compass.

The new Primare entry-level amplifier (£500, remember) even managed to hold its own with heavy-duty orchestral material

such as the Mahler excerpt (from the third movement of the 6th Symphony). The basses and 'cellos sounded full and weighty, with a full bodied sound at moderate volume levels (that is, within the amp's power envelope), and the violins and violas were brightly lit, yet still quite refined in time.

The Lorna Hunt vocal track sounded a little more forward in balance than usual, and again the voice had the brightly lit quality noted with the Mahler. Oddly, this track showed some loss of muscularity more clearly than the Mahler, but it remained tactile, the vocals articulate and easy to follow.

A piano recording showed just what a clean, subtle amplifier the A-10 is (which makes one wonder why it was named after an American military ground attack aircraft: after all, there's no way the Primare would pass as American). Although it lacked the physical presence of some of the models in this month's group, it got to grips with the intriguing temporal and tonal relationships and subtle dynamic shifts that punctuate this music. A good performance.

### CONCLUSIONS

Although not as powerful or as muscular as the best in group, the new Primare sounds sharper and livelier than the senior A30.1, say,

### THE LAB REPORT

**T**his solidly constructed amplifier will deliver in excess of 65W into 8 Ohms from 20Hz-20kHz. Distortion, too, is consistent across the audio spectrum, measuring around 0.008 per cent at low bass frequencies to a maximum of 0.06 per cent at the highest (20kHz) treble. At very low power levels, the Primare suffers little or no crossover distortion at typically 0.003 per cent and this figure climbs, albeit very mildly, with increasing power until a figure of 0.03 per cent is reached at 60W/8 Ohms (re. 1kHz). The response is essentially flat, crosstalk a little weak and the A-wtd S/N ratio 'spot-on' the 'average' value for most modern amps at 84.5dB. **PMi**

although it is not beyond sounding perceptibly warm and cuddly when the occasion demands.

There is nothing sterile or mechanical about this amplifier, but resolving power is high, and it is consequently awarded Best Buy status. **AG**

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

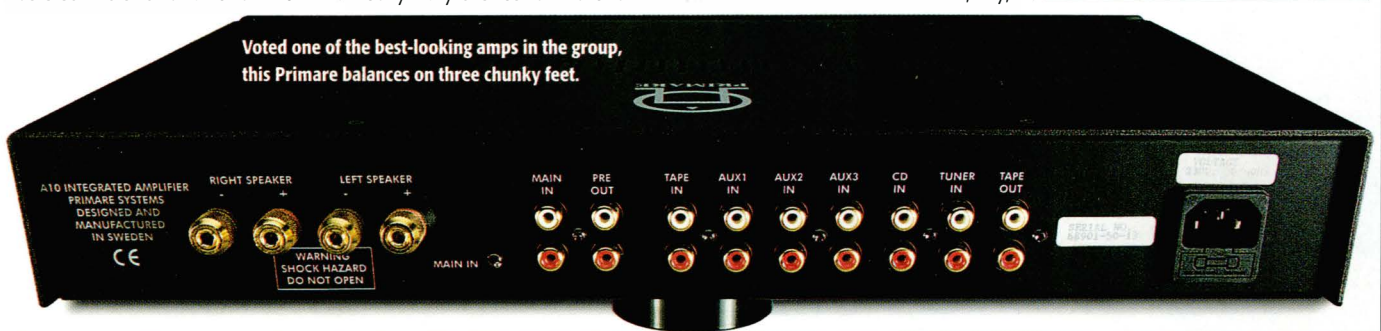
**VALUE** ★★★★★

**PRICE** £499.95

■ An excellent performer, not the most powerful on test, but refined, clean and lively, which injected some much needed *joie de vivre* into the listening.

#### ■ TWO YEAR GUARANTEE

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### Definitive Audio Starter System 1995

*"A real sonic beauty. A very potent and cost effective route to audio nirvana"*  
Paul Messenger HFC

### Definitive Audio Not so Starter System 1997

*"Great music becomes fanatastic, addictive and totally engrossing"*  
Jason Kennedy HFC

### Definitive Audio Starter System 1998

*"The hardest thing here is to express just how good this system is. I have heard systems in excess of £40,000 which exhibit only fractional amounts of this cleverly-matched outfit's musical dexterity"*  
Alan Sircorn HFC

### Definitive Audio Starter System 2000

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Jadis JA80, 60w monos, 18 months old, perfect, boxed.	£4500	£10000
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Audio Innovations S.800 Mk.I, 25w Class 'A'	£400	-----
Audio Innovations S.800 Mk. III	£600	£1000
Audio Innovations S.800 Anniversary -- (delightful).	£800	£1550
Audio Innovations S.1000 Mk III monos -- (silver circuit).	£1000	£2500
Art Audio Quartet, Nearly new.	£1400	£1850
Living Voice Auditorium - Walnut -- (HFC Best Buy)	£900	£1500
Living Voice Avatar, Battle scarred, ex - dem.	£1800	£2400
Snell E + Huygens 4 leg, Classic, bargain.	£800	-----
Snell J + Pirate 4 leg, Classic, bargain. -- (2 pairs!)	£650	-----
Snell K + Huygens 4 leg, Classic, bargain.	£400	-----
Border Patrol Power Supply -- (excellent).	£400	£575

Our stock of part exchanged items is constantly changing. Most items come and go before they can be included in these monthly ads. Call for specific requirements.

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# ROKSAN Caspian

ROKSAN CASPIAN

Visit Our Website: www.hifichoice.co.uk



**R**oksan has had its share of disruptions in the past, with a confusing number of ownership and address changes since it was founded in 1985, but the key personal have remained in place, in some cases from day one, and as luck or judgement would have it there has been a consistent design thrust all along.

There may not be the same emphasis on high-end turntables that there was when the company's Xerxes, was launched, (although Roksan remains one of the few still in that business), but its electronics designs were always soundly based, and the most recent ones are in a clear line of descent, building on the strengths of their earlier counterparts.

The Roksan Caspian, revisited here because of changes that have been made since our original review back in 1997 (issue 168), is a mid-market amplifier, rated at 70 Watts per channel (8 Ohms), rising modestly to 100 Watts/4 Ohms, but with a healthy current delivery of 50 amps peak-to-peak from its substantial power supply, which is headed by a 350VA toroidal transformer.

It has six line level inputs, one of which is for tape and which has off-tape monitoring; a preamp out/power amp in link is available for outboard processors, and a second preamp output is available to drive a second power amplifier in a bi-amplified system.

An indented, continuous rotary

**The amp's intelligent features include full output protection, which mutes the amplifier once triggered.**

## "This is a consistent amp that performs much the same, irrespective of the spectral or dynamic content of the music."

control selects the appropriate input, with a clear illuminated sign showing whether the unit is under power, what input has been selected, tape monitor status, and finally whether the 20dB mute facility has been selected.

It's a neat and attractive arrangement, and build quality is excellent, with finish only a little behind the best in group.

The amp's intelligent features include full output protection, which mutes the amplifier once triggered and will perform a self-test before reconnecting itself to the loudspeakers.

The microprocessor and logic circuits that drive all this technology are on a separate board which has its own dedicated regulated supply and is positioned just behind the fascia. A motorised ALPs volume control and logic input source switching lend themselves to remote control, which is handled by a system handset.

### SOUND QUALITY

The Caspian received a clean bill of health on test. The Mahler recording sounded rather different through the Roksan, with a forwardness and richness of instrumental textures I hadn't previously noted among its rivals.

The Lorna Hunt recording was well controlled, especially in the bass, while the midband was even

and powerful. Similarly gratifying results were had from the piano recording which sounded sharp and powerful, with good timing and well separated notes in busy passages, although some of the beauty of the harmonic relationships seems somehow slightly watered-down when judged by the very best standards.

One of the best features of the Caspian was an area where more than one of the others came to grief: this is not just a good amplifier, it's a consistent one that performs much the same, irrespective of the spectral or dynamic content of the music, and whether the volume was set low or high – within the bounds of the amplifier's ability to deliver, of course.

Despite the relatively modest power rating, the Caspian was consistently capable of playing louder, usually quite a lot louder, than the MVL, for example, which is rated at 100 Watts, and it also cruised more comfortably at higher levels than the similarly specified Electrocompaniet.

Adding some interest to the Caspian was what is best described as an almost understated feel. There's nothing too overt about the sound, and in part this can be attributed to the way that the Caspian held the frequency extremes in check. The bass is certainly powerful, but

### THE LAB REPORT

**O**f all the amplifiers in this test, the Caspian has the most ideal balance of low distortion, both with respect to power output and frequency. The maximum 80W/8 Ohms delivery is held right across the 20Hz-20kHz spectrum, for example, where distortion varies from just 0.002 per cent at 20Hz to 0.01 per cent at 20kHz. The merest suggestion of crossover distortion increases THD to 0.005 per cent below 1W/8 Ohms while, from 1-75W, it hovers at a very consistent 0.003 per cent. Noise remains a moderate -85dB and the response flat to within +0.0/-0.3dB. This all adds up to a very solid performance indeed. **PMI**

more important, it is tuneful and times well; and the treble is clean and detailed without being aggressive or bright.

### CONCLUSIONS

The Caspian is an excellent amplifier, with microprocessor control to give a smooth operating feel and remote control, along with the ability to recover from electrical stress that would floor some amps; but most of all this is an excellent amplifier because this is how it sounds, almost all of the time, whether played loud or soft, with most speakers and with most types of music. It is therefore Recommended. **AG**

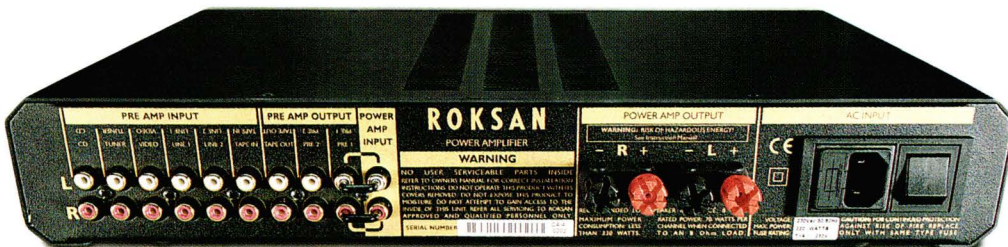
### VERDICT

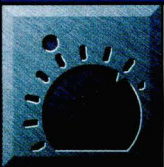
<b>SOUND</b>	★★★★☆
<b>BUILD</b>	★★★★☆
<b>VALUE</b>	★★★★☆
<b>PRICE</b>	£795.00

**An excellent all rounder, with adequate power reserves, and the kind of unflappability that makes it a safe choice in a wide range of systems.**

#### TWO YEAR GUARANTEE

Roksan Audio Ltd, Unit 6, Northfield Industrial Estate, Beresford Ave, Alpton, Middlesex HA0 1NW  
(020) 8900 0734





# CONCLUSIONS

# AMPLIFIERS

The outcome of this test is a slap in the face for those who continue to assert that modern amplifiers are much of a muchness, but even I was surprised by the scale of the differences on this occasion, and by the rather basic nature of some of the weaknesses I encountered.

Perhaps the most obvious and fundamental problem with one or two contenders was an inability to remain consistent in sound quality at different volume levels, which can usually be linked to a distortion signature that varies with level.

This kind of failing is not easy to excuse, as there is plenty of evidence, empirical and otherwise, that the ear latches onto changes of this type whereas constant elements in the sound tend to be filtered out, which is precisely the mechanism that underlies the so-called 'cocktail party effect' (the definitive audiophile social gathering!) Amplifier design isn't rocket science, and the nature of this problem, and ways to resolve it, are widely recognised.

The most disappointing model was the MVL, which is the one that makes the most extravagant claims. The Sound Sentinel features are the main selling points here, and their aim, which could be paraphrased as an attempt to humanise the reproduction of music using input from a large number of musicians, is certainly ambitious and worthwhile, but the result is at best messy and uneven. Anyone interested in this amplifier should set aside some time to experiment with the tone controls: 10 o'clock for the bass,

and about 4 o'clock for the treble control are good starting points.

The Opera Aida is the first electronics product from this company, and was designed by Audio Analogue, a manufacturer with a known record. Aesthetically it looks interesting, if flawed, but in practice it was musically lacklustre

by this group's standards. The Electrocompaniet EC1-3 was clearly more talented, and is capable of excellent results, but again it lacked consistency.

The plaudits go to the remaining three amplifiers, the Primare A-10, the Roksan Caspian and the Arcam FMJ A22 – which, as luck

would have it, cost £500, £795 and £1,000, and offer 50 Watts, 70 Watts and 100 Watts per channel respectively. These are all clean, modern designs with strong aesthetic virtues, excellent controls, and strong all-round music making ability. And all three are pretty intelligent, too!

## BEST BUYS & RECOMMENDED AMPS



### BEST BUY: ARCAM FMJ A22 – £999.90

A development of the Alpha 10, the FMJ A22 sounds better than ever in its new suit of clothes, and has class-leading flexibility, with bolt-in multi-room and home cinema modules.



### BEST BUY: PRIMARE A-10 – £499.95

Baby Primare A-20 and A-30 derivative has learned its lessons well, and has much of their qualities, minus some gravitas, but in a slightly livelier, fresher form.



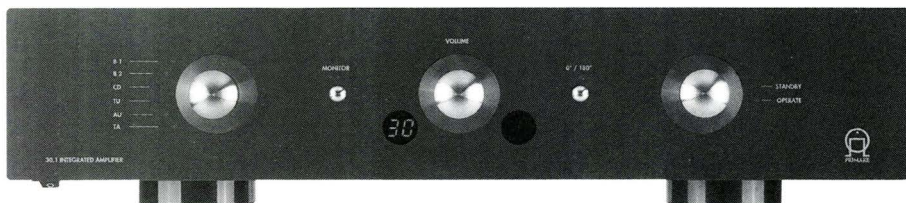
### RECOMMENDED: Roksan Caspian – £795

A mid-power amplifier appropriate for a wide range of systems has attained an accomplished standard of performance, with no obvious weaknesses and excellent build quality.

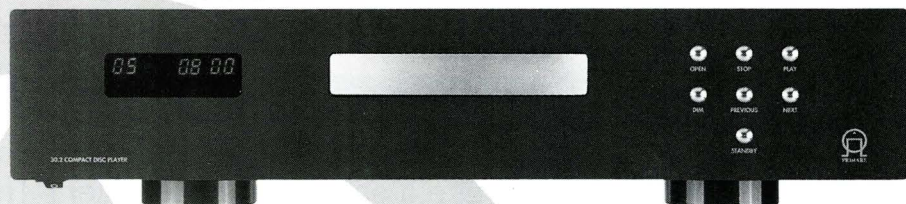
## AMPLIFIER COMPARISON TABLE

MAKE	ARCAM	ELECTROCOMPANIET	MVL	OPERA	PRIMARE	ROKSAN
MODEL	FMJ A22	EC1-3	A2	AIDA	A-10	CASPIAN
PRICE	£999.90	£1,000.00	£970.00	£795.00	£499.95	£795.00
SOUND	★★★★★	★★★★☆	★★★☆☆	★★★★☆	★★★★☆	★★★★★
BUILD	★★★★★	★★★★☆	★★★☆☆	★★★★☆	★★★★★	★★★★★
VALUE	★★★★☆	★★★★☆	★★★☆☆	★★★★☆	★★★★★	★★★★★
GUARANTEE	2yrs	1yr	5yrs	2yrs	2yrs	2yrs
CONTINUOUS POWER OUTPUT, 8 OHMS	110W	70W	90W (max)	60W	70W	80W
DISTORTION 20HZ-20KHZ, 1W/8 OHMS	0.0015-0.015%	0.002-0.015%	0.03-2.0%	0.003-0.02%	0.008-0.06%	0.002-0.013%
S/N RATIO, 1W/8 OHMS	83.5dB	97.3dB	79.0dB	84.0dB	84.5dB	85.0dB
FREQUENCY RESPONSE 20HZ-20KHZ	+0.0dB /-0.1dB	+0.0dB /-0.3dB	+0.05/-0.30dB	+0.0dB /-0.1 dB	+0.0dB/-0.25dB	+0.0dB /-0.3dB

A 30.1 INTEGRATED AMPLIFIER

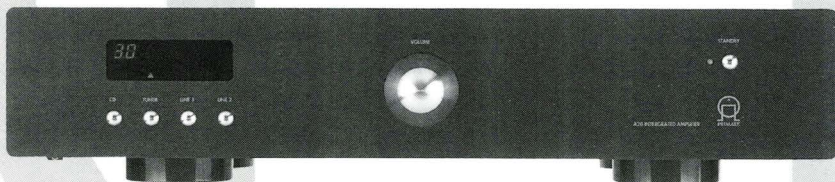


D 30.2 COMPACT DISC PLAYER

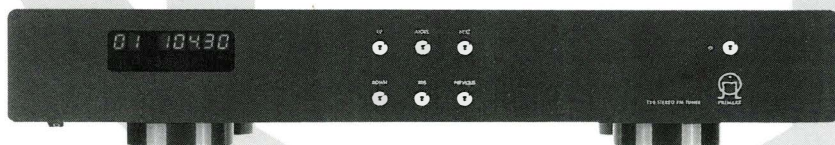


# Primare Systems a perfect partnership

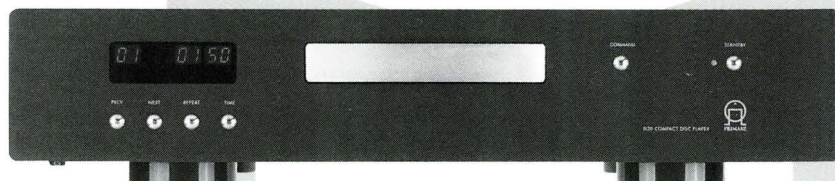
A 20 INTEGRATED AMPLIFIER



T 20 STEREO FM TUNER



D 20 COMPACT DISC PLAYER



CSE Sales + Distribution, Phone: 01423 359054  
E-mail: cse\_uk@compuserve.com

**Primare Dealers:**

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Audio Concept, Ealing. 0181 567 8703  
Audio T, West Hampstead. 0171 794 7848  
Musical Images, Covent Garden. 0171 497 1346  
Sound of Music, Horsleydown Lane. 0171 357 8882

**SOUTH EAST**

Audio Designs, East Grinstead. 01342 314569  
Audio T, Epsom. 01372 748888  
Audio T, High Wycombe. 01494 558585  
B&B Hi-Fi, Newbury. 01635 32474  
LMD Audio, Margate. 01843 220092  
Musical Images, Edgware. 0181 952 5535  
Musical Images, Beckenham. 0181 663 3777  
P J Hifi, Guildford. 01483 504801  
The Sound of Music. 01892 547000  
B&B Hifi, Bracknell. 01344 424556  
B&B Hifi, Reading. 0118 958 3730.

**EAST ANGLIA**

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Sounds Perfection, Helston. 01326 221372  
Spectral Sound, Chippenham. 01249 654357  
Audio Excellence, Bristol. 0117 926 4975

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Music Matters, Solihull. 0121 742 0254  
Sevenoaks Hifi, Worcester. 01905 612929

**NORTH EAST**

Acoustica, Chester. 01244 344227  
Hifi Showrooms, Congleton. 01260 280017  
Practical Hifi, Preston. 01772 883958  
Practical Hifi, Carlisle. 01228 544792  
Romers Hifi, Rishton. 01254 887799  
The Sound of Music, Crewe. 01270 214143.

**NORTH WEST**

A Fanthorpe Ltd. 01482 223096  
Gilson Audio, Middlesborough. 01642 248793  
Sevenoaks Hifi, Newcastle. 0191 221 2320  
Vickers Hifi, York. 01304 629659  
Eric Wiley, Castleford. 01977 553066

**SCOTLAND**

Glasgow Audio, Glasgow. 0141 332 4707  
Holburn Hifi, Aberdeen. 01224 585713  
The Music Hall, Edinburgh. 0131 555 3963  
Loud and Clear, Edinburgh. 0131 226 6500

**IRELAND**

The Hifi Shop, Belfast. 01232 327604  
Lyric Hifi, Belfast. 01232 381296

**Wales**

Audio Excellence, Swansea. 01792 474608



# 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





# for Value

**specialist dealer if you are searching for real hi-fi satisfaction**

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 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

**"If music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority."**

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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0171 226 5500

**SW11 ORANGES & LEMONS**  
61/63 Webbs Road, Battersea  
0171 924 2040

**W4 MARTIN-KLEISER Ltd**  
109 Chiswick High Road  
0181 400 5555

### SOUTH

**Ashford, Kent**  
**SOUNDCRAFT HI-FI**  
40 High Street  
01233 624441

**Chelmsford RAYLEIGH HI-FI**  
216 Moulsham Street  
01245 265245

**East Grinstead**  
**AUDIO DESIGNS**  
26 High Street  
01342 314569

**Kingston-upon-Thames**  
**INFIDELITY**  
9 High Street Hampton Wick  
0181 943 3530

**Lakeside Retail Park**  
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01708 680551

**Rayleigh, Essex**  
**RAYLEIGH HI-FI**  
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01268 779762

**Southend-on-Sea**  
**RAYLEIGH HI-FI**  
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**Uxbridge UXBRIDGE AUDIO**  
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01895 465444

### MIDLANDS

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01295 272158

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152a High Street, Bloxwich  
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**Leicester CYMBIOSIS**  
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0116 262 3754

**Northampton LISTEN INN**  
32 Gold Street, 01604 637871

**Shrewsbury**  
**CREATIVE AUDIO**  
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0161 428 7887

**Oldham AUDIO COUNSEL**  
12/14 Shaw Road  
0161 633 2602

**Sheffield MOORGATE**  
**ACOUSTICS**  
184 Fitzwilliam St  
0114 275 6048

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# ROKSAN *Caspian* at Musical Images



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*'An exceptionally refined system that provides a fair measure of excitement and thrills'*

REVIEW OF CASPIAN AMPLIFIER, CD PLAYER & ROKONE SPEAKER SYSTEM, WHAT HI-FI, JANUARY 1999

*'The Caspian is a terrific amp - a real class act. It combines a strong technical ability with a rare addictive feel for music making'*

*'To be brutally honest the integrated amp is superior to most bi-amp combos...two Caspians are dynamite. They could end your amp wanderlust for good'*

REVIEW OF CASPIAN AMPLIFIER, HI-FI CHOICE, NOVEMBER 1998

*'It is gloriously vivid and involving sound; looks the bizzo too'*

REVIEW OF CASPIAN CD PLAYER, WHAT HI-FI, AUGUST 1998, ★★★★★

*'Makes a Rockin Upgrade'*

REVIEW OF ROKSAN POWER AMPLIFIER, WHAT HI-FI, DECEMBER 1998, ★★★★★

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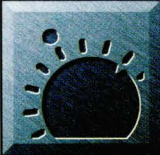


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# SUPER TEST

# PHONO STAGES

**Richard Black** digs out his Roxette LPs to put the latest phono stages through their paces.

## THE CAST LIST

Clearaudio Symphono	£740.00	p76
Musical Fidelity X-LP2/X-PSU	£499.00/£129.00	p76
Pass Labs XOno	£2,995.00	p77
Primare R-20	£499.99	p77
Pro-Ject Phono Box	£40.00	p79
Tom Evans Audio Design 'The Groove'	£1,500.00	p79

The phono stage might be a rather specialist bit of kit, but there seem to be plenty around: we reviewed ten this time last year, most or all of which are still very much around, and here are another half dozen. LPs have never had it so good.

Of course, the separate phono stage only really came into its own when the arrival of CD had encouraged manufacturers to produce preamps and integrators with no phono compatibility. In a way, it's a bit of an anomaly that such a thing should be required: believe it or not, some domestic tape decks from the 1950s had a direct output from the tape head

## GLOSSARY

**MC/MM:** moving coil/moving magnet cartridge. A description of the basic mode of operation. In practice, the former usually has a much lower output voltage, but frequently achieves superior mechanical characteristics. **LOADING:** in this context, the input impedance of the phono stage. The value of this can have an audible effect upon the performance of many MC cartridges.

**OUTPUT LEVEL:** the output level of any phono cartridge is normally quoted in mV (milliVolts) for modulation levels equivalent to 5cm/s stylus velocity. However, actual levels on records can rise as high as 50cm/s, so any phono stage needs considerable 'headroom'.

**HEADROOM:** the amount by which the output of a phono stage (or other amplifier) can exceed the nominal operating level. Insufficient headroom in a phono stage, with a given cartridge, can lead to severe distortion.

**RIAA:** the name of the equalisation (pre-emphasis) curve applied to records in the cutting, and applied in reverse, within the phono stage, in the playing.



**"Don't fall into the trap of thinking that because the noise of a hi-fi component isn't really obvious it isn't getting in the way."**

which could feed a preamp with a suitable input stage, but the logic of incorporating the electronics within the deck soon prevailed.

Turntables, however, soldiered on with the slightly bizarre business of shipping the tiny signal from the cartridge along a yard or more of cable to a separate amp, and we've come to accept it. A few manufacturers incorporated a phono stage into a deck, but the complication in 'true hi-fi' circles of having deck, arm, cartridge and phono stage from different brands made this a bit of a tricky prospect.

Anyone who's ever investigated the business of high-fidelity LP reproduction will know that one of

the biggest enemies of sound quality is spurious noise. The best pressings can and should be very quiet, but it's all too easy to spoil that by careless amplification of the cartridge's output. It's therefore a major target of every phono stage designer to minimise this.

By the way, don't fall into the trap of thinking that because the noise of a hi-fi component isn't really obvious it isn't getting in the way: even barely audible levels of noise can be shown to have a surprisingly large effect on our perception of musical detail. At the same time, there are various kinds of distortion: headroom (see *Glossary* – and note that if this is

too small, one of the most obvious effects is to worsen the impact of record surface noise), frequency response, and so on.

Evidently designing a good phono stage, whatever the available budget, isn't easy. But when you consider that different cartridges have different output levels (moving coils, that is: moving magnets are pretty much standardised) you'll soon realise that selecting a phono stage isn't always straightforward either.

With a relatively high-output cartridge, say a nominal 0.4mV or so, the noise of any phono stage will be less obvious than with a cartridge that only puts out 0.15mV, as some do. Other sonic factors might then come to the fore – so when listening to phono stages at your friendly local dealer's manor, do try to use the same model of cartridge that you use at home, or at least, if possible, one of similar output.

This group covers a price range of 75:1, which is a bit sublime-to-ridiculous, but it does show what a wide range is available.



## HINTS & TIPS

Given the incredibly low signal levels involved it's inevitable that all phono stages will be somewhat sensitive to hum, so positioning can be critical – keep well away from any mains transformers! Also ensure that makers' earthing recommendations are followed. Some turntable motors radiate hum too. Some MC phono amps feature adjustable cartridge loading, which can be well worth experimenting with. Don't be tempted into snap judgements as to what's 'better', as loading also affects level and that can be misleading. Don't neglect basic 'LP hygiene' – keep your records and stylus clean. A good phono stage will show up the effects of dirt, and of incorrect turntable set-up, all the more obviously. The phono stages in this group all have an active MC stage, but many folk swear by transformers for boosting MC output volts to MM levels. There's a financial price to pay, but it can be worth a try.

## HOW THE TESTS WERE DONE

Much as in last year's group, each unit took its turn in my regular system, including Pink Triangle deck, SME 309 arm, Highphonic MC-A3 cartridge (low output MC: supplemented by Shure VST-V for listening to MM inputs), EAR amps and Quad ESL57 loudspeakers alternating with ATC SCM20s. I played a selection of tracks, including those mentioned below, with each phono stage.

I also listened to each unit re-amplifying the signal from a CD player which had been suitably attenuated in a pair of precision inverse-RIAA filters, with the level set to match that of a cartridge with a moderate 0.3mV of output. This allowed very critical bypass testing, revealing a great deal about tonal neutrality in particular.

All units were also given a quick once-over in the lab, to check for any remarkable behaviour.

### MUSIC USED

**RAVEL:** *Daphnis and Chloë* – Boston Symphony Orchestra/Munch (Chesky RC15)  
**MAHLER:** *Symphony No. 2* – Symphonica of London/Morris (Symphonica SYM7/8)  
**ENESCU:** *Violin Sonata No. 3* – Lupu/Cymerman (Altarus AIR-2-9012)  
**GRACE JONES:** *Island Life* (Island GJ1)

# CLEARAUDIO Symphono

A smart little box with few external pretensions, this unit offers one surprise in the large amount of heat it generates, not only from the internal power supply regulators (the external power supply produces only roughly smoothed DC), but also from a large number of unidentified op-amps, several of which run unusually hot.

Features are few: gain is fixed (suitable for most MC cartridges except possibly the very lowest output ones) and the only adjustment available to the user is the subsonic ('rumble') filter, which is defeated by removing a jumper underneath the unit. Input impedance is claimed to be 'self-adjusting', but appears to be fixed at a highish 510 Ohms.

Clearaudio has provided balanced outputs as well as the usual unbalanced phonos, and the sockets, like the general construction, are professional quality rather than 'tweaky audiophile'. However, the proliferation of components inside the case, some of which I suspect aren't cheap, seems to justify the price.

### SOUND QUALITY

The Symphono produced rather mixed results. In general it



**"It's a lively performer with rock'n'roll, and also seems at home with more laid-back, simple musical styles."**

demonstrates a neutral tonal balance with fine bass (tested with the subsonic filter out of circuit) and is capable of good imaging.

Detail is also good, although in

the heavily-scored Mahler recording it seemed to bottle out slightly when the entire orchestra got going, somewhat losing focus and delineation of the various orchestral sections. It can

also become a little thin at times, especially on slightly worn records, seeming to emphasise wear and tear on the disc. On the other hand, it's a lively performer with rock'n'roll, and also seems at home with more laid-back, simple musical styles.

Background noise is very low, although hum is just about audible. Measurements are mostly good, but overload headroom could be better at high frequencies, especially given the relatively low gain.

### CONCLUSION

This is basically a good unit and fair value in many ways, but its performance doesn't truly outshine that of some cheaper competitors. **RB**

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £740.00

**Slightly inconsistent balance mars the performance of this lively performer.**

#### ■ ONE YEAR GUARANTEE

Audio Reference, Units 889 Enterprise Park, Slyfield Ind. Est., Guildford, GU1 1RB

(01483) 575344

# MUSICAL FIDELITY X-LP2/X-PSU

Monoblock power amplifiers are common enough, but I think this is the first monoblock pre – of any sort – I've seen. It sounds sensible if extreme, but there's probably a lot to be said for not pursuing this path: for a start, it's likely to increase pick-up of noise and interference. Nor is there any very strong justification for it – indeed, although the circuit board in each module stretches the full length and width, internally there's enough height to stack two of them.

Both MC and MM cartridges are catered for, with switchable loading for MC. Circuitry is based on discrete transistors and construction is generally tidy, but variable component quality is in evidence. The X-PSU is nothing more than a toroidal transformer, as big as can be accommodated in the case, with a separate winding feeding each of the four outputs – the spare pair can be used for other MF X-series components.

### SOUND QUALITY

A year ago in these pages I reviewed the 'normal', stereo, X-LP and said nice things. But it's slightly disappointing to compare my listening



**"Dynamics are unconstrained and the sound is one with which one can become quite involved."**

notes on that model with those for this new arrival (at five times the price) and find some rather similar phrases. They're still mostly complimentary, but it would have been

great to be able to report that imaging, for instance, was better than just 'good with pretty good front-back' and that detail was more than just 'quite good'.

At least the tonal balance is highly neutral, and in this respect the X-LP2 clearly surpasses the X-LP. Dynamics are unconstrained and the sound is one with which one can become quite involved, but it's the inability to hear into and through the small details that is the main weakness.

### CONCLUSION

Measurements are fine, with noise low (although not the lowest in the group) and hum barely perceptible. This is probably a good choice for listeners who aren't too bothered about detail, but falls a little short of formal recommendation. **RB**

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £499.00/£129.00

**An enjoyable listening experience in its way, but a bit short on inner detail.**

#### ■ FIVE YEAR GUARANTEE

Musical Fidelity, 15/16 Olympic Trading Estate, Fulton Road, Wembley, HA9 0TF

(020) 8900 2999

## PASS LABS XOno

Clearly well into 'exotica' territory, this beast doesn't have the most attractive exterior, but is immaculately put together and (of course!) features a wide selection of audiophile parts inside.

It's particularly flexible too, with both MM and MC inputs, adjustable gain for MC, input impedance variable in very small steps from 5 Ohms to 1,000 Ohms, and balanced outputs. Maximum gain is unusually high, making this a good choice for owners of very low-output cartridges. Circuitry apparently adopts the difficult discipline of no feedback, with J-FETs at the input, details such as full dual-mono power supplies can be taken as read.

### SOUND QUALITY

At its elevated price, this phono amp would clearly need something a bit out of the ordinary to justify its existence – and it does indeed offer it. For a start, it offers the kind of soundstage that most of us simply learn to live without: deeper, broader and more precise than your run-of-the-mill component.

There's no feeling of either lack or excess in the bass, which is strong but never forced, and treble is open



**"There's no feeling of either lack or excess in the bass, which is strong but never forced, and treble is cleanly extended."**

and cleanly extended. Noise is low and altogether there's admirably little to interfere with the listening experience and everything to draw one into it.

That's with a real turntable connected. Listening to CDs via my

inverse RIAA filter, an odd effect popped up: the sound was rather larger than life. Given that this test allows a fair comparison with the 'original', the inescapable conclusion was that the XOno actually adds something to the sound. In fact, it

made CDs sound more like the best points of LP, especially the soundstage, which was now bigger than via the direct connection.

### CONCLUSION

In the lab, the XOno gave great results in all areas but distortion, where it added quite low but not necessarily negligible levels (around 0.02% to 0.1%) of low harmonics – just enough to add the smallest amount of 'euphonic coloration'. In fact, fine unit though it is, it's not strictly accurate. Despite that, it's so lovely to listen to that I'm going to swallow a few principles and Recommend it.

RB

### VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£2,995.00

Not absolutely neutral, but the overall result is so beguiling it's hard to resist.

#### THREE YEAR GUARANTEE

Zentek Music, Lizanne House, Mount Sion, Tunbridge Wells, TN1 1YQ

(01892) 539595

## PRIMARE R-20

There's some definite Scandinavian quality to the appearance of this smart unit, an understated elegance and practicality which extends to all aspects of the design.

The only slightly odd feature is the position of the mains switch, which is underneath the left-hand edge, but since most users will leave a phono stage on all the time (it uses less than a unit of electricity in a day) it hardly matters.

The back panel is neatly and intelligently laid out, with the input impedance and gain switches clearly labelled; the only internal control is a jumper link which can be used to raise MM gain if necessary.

Be aware that the impedance switch also affects MM cartridges, which won't work at all well if it's left set to ten Ohms! MC gain is a little low and may not suit the lowest output levels.

Primare has included the mains transformer in the main chassis, with a little shielding ensuring that hum is kept low. The audio circuits, using both discrete transistors and op-amps, are mounted on a pair of relatively small circuit boards.



**"It is probably at its best with what one might call 'civilised' music, but even so it can handle rock or jazz with confidence."**

### SOUND QUALITY

Despite its not unreasonable price, the R-20 put in a good performance. Its weakness lies with dense, heavy music, which tends to put it into a flap with consequent loss of precision, coherence and bass. Under

most conditions, however, it has an even-handed balance which makes for pleasingly natural sounds from all instruments and voices, and good – indeed, very good – imaging.

It is probably at its best with what one might call the 'more civilised'

kinds of music, but even so it can handle the raw excitement of rock or a lively jazz band with confidence, the slightly imperfect precision not really having much effect under the circumstances. It's only when one tries to hear every part in a large operatic ensemble, for instance, that the flaws surface.

### CONCLUSION

Measurements are fine, although hum is not completely vanishing (and just audible). It's not quite a phono stage for all seasons, but it's sufficiently capable to merit Recommendation.

RB

### VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£449.99

Fights a little shy of densely scored music, but generally an enjoyable and neutral performer.

#### TWO YEAR GUARANTEE

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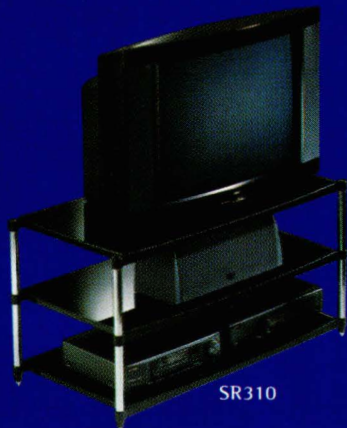
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## PRO-JECT Phono Box

There's not much one can get in hi-fi for £40, but Pro-Ject seems determined to offer the utmost: this diminutive case contains a surprising number of components and is remarkably flexible.

Unlike the basic NAD and QED units tested in *HFC* 189, this one can handle MC cartridges (although admittedly the gain is only suited to those with an output of at least 0.25mV nominal) and even has adjustable input impedance.

To keep costs down, changing gain and impedance must be done inside the case, by moving jumper plugs, but it's easy enough and perfectly safe. Powered by the ubiquitous wall wart, the Phono Box has high enough voltage supplies to offer decent overload headroom.

The only slightly dodgy feature is the construction, which apart from the expected proliferation of cheap components relies on electrical connections to support the circuit board. This means that one corner effectively floats free, but it seems to hang together nonetheless. I wish Pro-Ject had put the earthing post somewhere sensible – as it is, it's too far for the earthing leads on some tonearm cables to reach.



**"The Phono Box is listenable and a perfectly acceptable add-on to a phono-less integrated amplifier."**

### SOUND QUALITY

As an MM stage this is a modestly capable unit and not surprisingly – given a certain commonality of design – sounds somewhat like the above-mentioned NAD and QED. That's to say that although there are no glaring colorations in the sound (and indeed the frequency range is

largely unrestricted, apart from a slight lack of bass weight at times), there's not ever so much detail to be found, and imaging is decidedly small-scale and imprecise with it.

Still, it's listenable and a perfectly acceptable add-on to a phono-less integrated: most budget integrated amps with a phono stage will have

one that sounds much like this.

The MC input sounds broadly similar, but not only is it a bit on the hissy side and arguably even woollier than the MM setting, it hummed badly on first use. A little modification largely cured this problem (Pro-Ject is looking into implementing such a mod in production as I write). But not many people would use a £40 phono stage with an MC cartridge anyway.

### CONCLUSION

It's a perfectly honourable product and it is very cheap... go on, then: Recommended. **RB**

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

**VALUE** ★★★★★

**PRICE** £40.00

Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price.

#### ONE YEAR GUARANTEE

Henley Designs, The Old Coach House, The Street, Crowmarsh Gifford, Wallingford, Oxon, OX10 8EH  
(01491) 834700

## TOM EVANS AUDIO DESIGN The Groove

If the name of Tom Evans is familiar, it's because he has designed for many companies in the past, most notably Michell but also Pioneer and Acoustic Precision among others.

This new product still bears some family similarity to amps gone by, not least the Michell Iso (*HFC* 189). For a start, the casework is likewise built of dark Perspex, although this unit is considerably bigger (not least because the mains transformers are inside instead of in a separate box) and the sockets on the back panel are well spaced apart and clearly labelled because, as Tom so rightly noted, not everyone who listens to LPs has the nimble fingers and eyesight of a 20-year-old.

The inside is also reminiscent of other Evans amps, with high quality op-amps (complete with glued-on heatsinks) and more regulator ICs than you can shake a stick at.

Everything is true dual-mono, right down to the twin mains transformers, and construction is rather, er, hand-built, but solid enough. Gain is fixed and suitable for all MC cartridges up to a nominal 0.4mV output (other levels can be specified).



**"It's hard to find any fault in the tonal balance: The Groove handles the full sweep from bass to high treble seamlessly."**

### SOUND QUALITY

In contrast to the Pass unit, which seems to offer a very subtly rose-tinted version of events, this amplifier clearly aims for the whole, unvarnished truth. In the most critical test, comparing music off CD (via the inverse RIAA filter) with the original, line-level version, I reckon

that it was just possible to hear a tiny bit of coloration on bright sounds such as trumpet; however, that's neither pronounced nor in the least bit distracting.

Otherwise, it's hard to find any fault in the tonal balance: The Groove handles the full sweep from bass to high treble seamlessly.

Detail is among the best, only very slightly compromised, and imaging is precise and broad, with good front-to-back. Solo vocals could seem a bit harsh, and on speakers with good bass a hint of hum may just be audible in silences.

### CONCLUSION

There's a very small treble lift which may tie in with the coloration, but otherwise all's well and bandwidth exceeds the audio range by three octaves at each end. The price is rather high, but Recommendation still seems to be justified. **RB**

### VERDICT

**SOUND** ★★★★★

**BUILD** ★★★★★

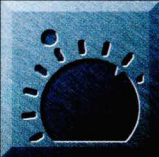
**VALUE** ★★★★★

**PRICE** £1,500.00

Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP.

#### LIFETIME GUARANTEE

Tom Evans AD, Unit 40, Valleys Enterprise Cntr, Bowen Ind Est, Aberargoed CF81 9EP  
(01443) 833570



# CONCLUSIONS

# PHONO STAGES

Looking back on this group, I seem to have been less than unequivocally enthusiastic about even the Recommendations. It's just the luck of the draw, though, and these are all decent components – but they're up against some stiff competition. The middle ground is probably the most hotly contested area, but even the Pro-Ject has two direct rivals.

Said Pro-Ject is really an add-on for occasional LP-dusting-down duty, and certainly not a likely purchase for a true aficionado. At the other end of the scale, the Pass Labs XOno is clearly a treat for any hi-fi system, and not many folks will have the luxury of being able to consider one seriously. It's the region below £1,000 where most people will be looking for that elusive combination of clarity, neutrality, dynamics and listenability.

Under that heading, the Primare R-20 looks like a good bet. The Musical Fidelity combination is worth a try, too, at a slightly higher price: it's the sort of sound that you may simply love to bits, in which case its slight lack of finer detail may prove less of an issue than I found it to be. But don't overlook MF's much cheaper X-LP, which looks like something of a bargain. It's not as good as the X-LP2/X-PSU, but it comes closer, perhaps, than some would admit.

Clearaudio's MC-only stage has a distinct weakness in its lack of high-frequency headroom, and that may have something to do with its slightly thin sound. Low-output cartridges used with it will make the low headroom less of an issue, but then overall output will be low too (although noise performance is good) and you'll

need a following preamp with a fair bit of gain to achieve decent listening levels. Tom Evans' offering has the same headroom but more gain, and is clearly intended for use with low-output MC models, making it less of a problem.

That kind of juggling act is, I suppose, part of the fun, but the best equipment simply avoids it

by over-the-top design – that's certainly true of the Pass Labs XOno. Its gain is among the highest around (even at the lower internal gain settings it's pretty high), but the unit can still handle high levels without distress. Not all high-end kit is so well behaved, and it's nice to see such flexibility.

Playing records well isn't such a

tall order these days, and really any of the units tested here (possibly excepting the Pro-Ject, in the nicest possible way) will give very good results with a decent cartridge. But do make sure you have such a beast before splashing out on a phono stage: a poor or worn cartridge can be a very false economy.

## RECOMMENDED



### PASS LABS XOno

Serious high-end exotica with most of the virtues one looks and hopes for in fine hi-fi. What this unit does well it does spectacularly, and while it has some euphonic coloration, it's so subtle and endearing that it's hard to quibble.



### PRO-JECT Phono Box

This diminutive beast is modest in its pretensions but still quite capable in its way, and will doubtless give pleasure to many listeners. A much better choice with MM than MC cartridges, though.



### PRIMARE R-20

Just occasionally becomes a little distressed, but most of the time this is a good solid performer with an even hand of virtues, comfortable with a wide range of music. Well built and practical, too.



### TOM EVANS The Groove

Arguably the most neutral unit here – and one of the best around in any terms – The Groove is a top choice for precision detail recovery from any well-loved LP collection.

## PHONO STAGES COMPARISON TABLE

MAKE	CLEARAUDIO	MUSICAL FIDELITY	PASS LABS	PRIMARE	PRO-JECT	TOM EVANS
MODEL	SYMPHONO	X-LP2/X-PSU	XONO	R-20	PHONO BOX	THE GROOVE
PRICE	£740.00	£499.00/£129.00	£2,995.00	£500.00	£40.00	£1,500.00
SOUND	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
GUARANTEE	1 yr	5 yrs	3 yrs	2 yrs	1 yr	Lifetime
SIZE WxDxD (cm)	15x5x17	10x11x21 (x3)	43.5x8.5x30	21x7x28	11.5x3.5x12	33x9x19
MM/MC	MC	MM/MC	MM/MC	MM/MC	MM/MC	MC
MC GAIN	Med.	Med/high	V. high/adjustable	Med.	Med.	High
MC I/P IMPEDANCE	510 Ohms	Adjustable	Adjustable	Adjustable	100 Ohms	120 Ohms





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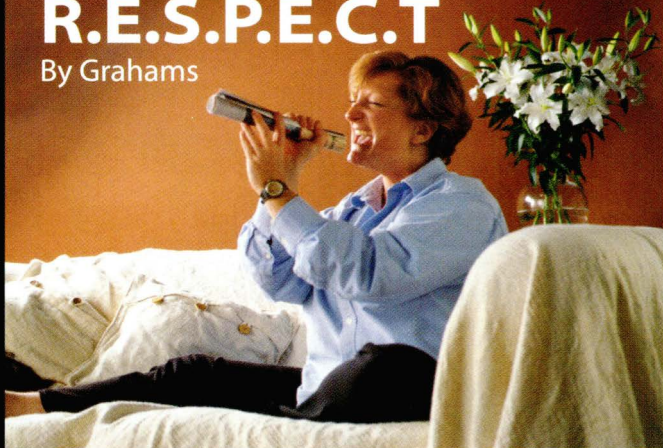
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**R**uss Andrews has a refreshingly different perspective on the problems encountered in our attempts to build the ultimate hi-fi system. As he sees it, the quest for the absolute sound is not simply defined by the system's fundamental components, but in the way that they are used. You aren't getting what you paid for if you don't pay attention to the system's 'infrastructure'. What he's referring to are things like mains and signal cabling, system support and the room itself.

This month Russ Andrews Accessories is launching its new range of mains products. With more than two years development work, and extensive lab and field testing, these products promise to deliver very real improvements to system sound quality.

An enthusiast from the age of 14, Russ has more than 30 years experience working within the industry as both a retailer and R&D engineer. His research led him to discover the huge importance of mains quality to high quality music reproduction as far back as 1974 and he has been spreading the message ever since.

Mains pollution in the form of noise, harmonics and radio frequency interference (RFI) have an insidious degrading effect on the sound from a hi-fi system, and even the picture from your TV. They add a grainy 'mush' quality to the sound that hides detail and spacial resolution.

Ever noticed how your system sounds much better at some times (especially late at night) than at others? The reason: levels of mains pollution vary throughout the day, and it is this that is affecting your system's sound.

Anyone who has compared mains cables will tell you that they make a difference to the sound, and some to a greater

extent than others. This is because some mains cables are better at rejecting mains-borne noise than others. Russ Andrews Accessories has two ranges of mains cables: the entry-level Yello Power cables, and the really serious Kimber PowerKords. The unique construction of these cables not only rejects airborne RFI, but also removes mains interference that is already on the mains.

## PLUG 'N' PLAY

Much of the noise and harmonics that plague your system and hence its sound quality are generated within your own home. Anything connected to the mains can pollute the supply. Examples include: VCRs, TVs, computers and fluorescent lights (see *Oasis of Sanity*, p50).

The Silencer (£39.95) offers a simple solution to eliminating these problems. Just plug it in next to noisy appliances such as the fridge, or into a spare socket by your system to create a 'quiet environment' for your hi-fi. As an additional benefit, The Silencer will help protect your equipment from damaging high voltage mains spikes.

To provide extremely clean mains for your hi-fi or home cinema installation, Russ has developed his own unique versions of the 'mains conditioner': The

Purifier and The SuperPurifier. His models contain inductorless, non-resonant harmonic filters that effectively silence the mains and improve sound quality without many of the problems associated with most conditioners. They should do a lot to restore the conditioner's reputation. The audible benefits include more detail, a deeper and wider soundstage, and less smear on sibilant sounds, as well as a general cleaning up of 'hash'-type noise.

Both versions are fitted with a SuperClamp and Silencer to protect your system from mains spike damage, and come fitted with a High Current PowerKord. The Purifier costs £250, while its superior sister, The SuperPurifier, costs £350.

## ROCKIN' BLOCKS

Russ Andrews has replaced his existing distribution block with a radically new design: The PowerBlock. This eight-way block features a detachable Kimber



High Current PowerKord,

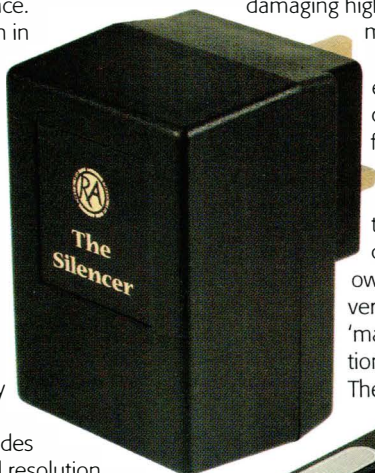
SuperSockets (the best sounding 13A sockets available), and an earth terminal facility (for adding an additional earth to your system).

To improve sound quality even further, the usual metal construction has been replaced by high performance, fire resistant ABS. Prices start at £350. And if you also want the benefits of a mains conditioner, The PurifierBlock – a hybrid of The PowerBlock and The Purifier – offers space and cost savings coming in at £500 (including a 3ft PowerKord).

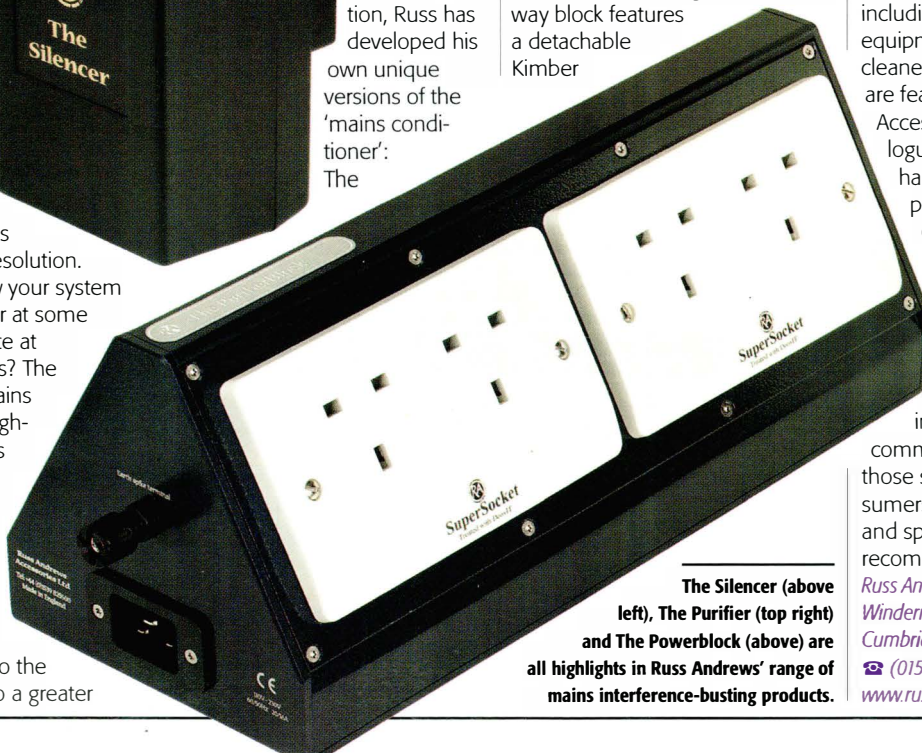
The full range of products, including mains and signal cables, equipment supports, contact cleaners and other accessories are featured in the Russ Andrews Accessories mail order catalogue, or see the products first hand by visiting the company's new factory shop in Cumbria. They're certainly worth a look, particularly considering Russ Andrews' recent mail order industry award for excellence in providing customer service and information. One judge commented: "This is one of those special businesses that consumers come across by chance and spend the rest of their lives recommending to others."

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The Silencer



SuperSocket

The Silencer (above left), The Purifier (top right) and The Powerblock (above) are all highlights in Russ Andrews' range of mains interference-busting products.

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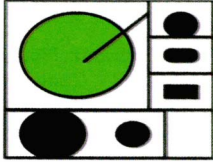
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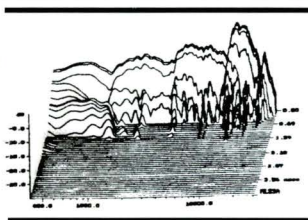
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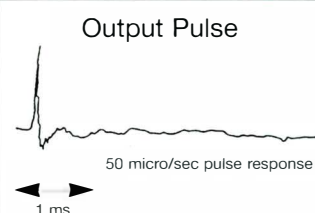
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Kef 101/2 Speakers.....£475  
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Exposure 17 Pre-Amp.....£495  
Exposure 21 Pre-Amp NEW with remote.....£890  
Meridian 501 Pre-Amplifier with Phonostage.....£495  
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Z Systems RDP1 Reference Pre-Amp, latest spec.....£3995  
Graaf WFB two Pre-Amp.....£1195

## AMPLIFIERS

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Luxman M2000 Power Amplifier.....£495  
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Teac A-33405 Tape Recorder.....£595  
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# Dealer Guide

or

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Sony ES74.....£1.99  
TDK MD74.....£1.35  
TDK MD80.....£1.89  
TDK Studio MD74.....£2.75  
Samsung MD74.....from 99p  
Traxdata MD74.....from 99p  
Sony MD Data.....£8.99

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Traxdata 80 min.....£1.25  
Traxdata CD-RW74.....£2.45  
Philips CDR74.....£1.25  
TDK CDR-XG74.....£1.45  
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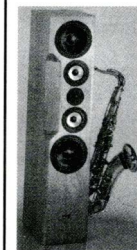
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# HOW TO USE THE BUYERS' GUIDE

## Best Buys, Recommendations & Editor's Choices

- B BEST BUYS:** Awarded to group-tested products which display an unbeatable blend of performance and value for money.
- R RECOMMENDED:** Top performers in group tests; perhaps not the cheapest but possibly more sophisticated than Best Buys.
- E EDITOR'S CHOICE:** Components which have outstanding sound quality but do not qualify for BB or R because of non group testing.

## Our Three Step Guide to Buying Hi-Fi

The *Hi-Fi Choice Price Guide and Directory* are extremely simple to use, but contain all the information you need to select and buy the perfect hi-fi system. Here's how it works.

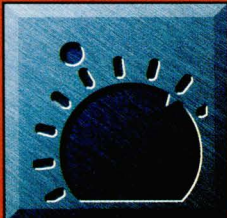
**STEP 1 DISCOVER** which products fall within your budget by using our Price Guide, which starts on this page. The product listing is updated using manufacturers' data every other month, and aims to include every hi-fi component currently available in the UK. (But please fax us on (020) 7317 2686 with any omissions!) It is an alphabetical listing divided into different types of hi-fi component, and also into price bands.

**STEP 2 PRODUCTS** whose names are printed in **RED** are those we have reviewed, which you can read about in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy, Recommended or Editor's Choice awards, denoting 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 Directory) to book a demonstration of the hi-fi equipment you want to hear. Remember to take your own software!

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**AMPLIFIERS INTEGRATED**

**KEY**

**☉** - Number of line-level inputs.  
**'20W'** - Rated RMS output power per channel into a nominal 8 Ohm load.

**UP TO £250**

Arcam Alpha One	☉	35W	230
Ariston AX910	Ⓢ	30W	60
Cambridge A1 Mk III	Ⓢ	30W	100
Cambridge A100	Ⓢ	30W	120
Cambridge A300	Ⓢ	40W	140
Cambridge A3i	Ⓢ	40W	150
Cambridge A500RC	Ⓢ	60W	200
Denon PMA-250SE	Ⓢ	50W	200
Denon PMA-350SE	Ⓢ	30W	140
Denon PMA-555R	Ⓢ	50W	180
Denon PMA-100M	Ⓢ	50W	230
Goodmans Delta 900A	Ⓢ	80W	240
H/K HK630	Ⓢ	100W	130
H/K HK3270	Ⓢ	40W	200
JVC AX-A372BK	Ⓢ	65W	250
JVC AX-R5BK	Ⓢ	40W	200
Kenwood KA-1080	Ⓢ	45W	200
Kenwood KA-3080R	Ⓢ	60W	140
Kenwood KA-F3010R	Ⓢ	70W	170
Marantz PM-48	Ⓢ	70W	180
Marantz PM-57	Ⓢ	50W	150
Marantz SR-47	Ⓢ	50W	200
Marantz PM6010 OSE	Ⓢ	40W	200
Marantz PM-66SE	Ⓢ	50W	230
Musical Fidelity E1	Ⓢ	50W	230
NAD 310	Ⓢ	30W	199
NAD C320	Ⓢ	20W	100
NAD 312	Ⓢ	40W	200
NAD 312	Ⓢ	25W	200
Pioneer A-105	Ⓢ	30W	130
Pioneer A-204R	Ⓢ	90W	200
Pioneer A-300R	Ⓢ	25W	160
Pioneer A-305R	Ⓢ	50W	200
Pioneer A-407R	Ⓢ	50W	200
Pioneer A-405R	Ⓢ	45W	230
Rotel RA921	Ⓢ	45W	250
Rotel RA931	Ⓢ	20W	100
Rotel RA971 Mk II	Ⓢ	35W	150
Sansui AUX-410R	Ⓢ	60W	225
Sansui AUX-510R	Ⓢ	50W	150
Sherwood AX 4050R	Ⓢ	50W	150
Sherwood AX-7030R	Ⓢ	70W	230
Sony TA-FE230	Ⓢ	95W	230
Sony TA-FE330R	Ⓢ	40W	100
Sony TA-FB730R	Ⓢ	60W	130
Teac A-E2000	Ⓢ	40W	200
Teac A-R600	Ⓢ	50W	180
Technics SU-V300	Ⓢ	50W	200
Technics SU-V500	Ⓢ	90W	200
Technics SU-A600 Mk3	Ⓢ	25W	130
Technics SU-V620	Ⓢ	30W	160
Technics SU-A707	Ⓢ	37W	200
Technics SU-A700 Mk3	Ⓢ	70W	230
Yamaha AX-392	Ⓢ	70W	250
	Ⓢ	45W	250
	Ⓢ	60W	170

£251 TO £500			
Arcam Alpha 7R	Ⓢ	45W	300
Arcam Alpha 8R	Ⓢ	50W	380
Arcam Alpha 9	Ⓢ	70W	500
Audio Analogue Puccini	Ⓢ	40W	475
Audiogram MB1	Ⓢ	40W	495
Creek 4330	Ⓢ	40W	279
Creek 4330R	Ⓢ	40W	355
Creek 5250	Ⓢ	50W	450
Cymbal CA1	Ⓢ	40W	499
Denon PMA-735R	Ⓢ	65W	300
Denon PMA-1500R	Ⓢ	40W	499
Edmund Audio ES110	Ⓢ	70W	500
EMF Audio Sequel	Ⓢ	85W	400
H/K HK650	Ⓢ	50W	450
Kenwood KA-5090R	Ⓢ	60W	330
Magnum IA120	Ⓢ	65W	300
Magnum IA170	Ⓢ	65W	265
Magnum IA170SE	Ⓢ	96W	330
Magnum IA170SE	Ⓢ	90W	430
Marantz PM-68	Ⓢ	90W	300
Marantz PM-66 KI Sig.	Ⓢ	50W	400
Monno Asty	Ⓢ	55W	400
Musical Fidelity E1 1	Ⓢ	60W	300
Musical Fidelity X-A1	Ⓢ	60W	480
Musical Fidelity A2	Ⓢ	50W	480
	Ⓢ	25W	500

Myriad T-40	Ⓢ	50W	400
NAD 314	Ⓢ	35W	260
NAD C340	Ⓢ	50W	270
NAD 317	Ⓢ	80W	400
Onkyo A9210	Ⓢ	40W	260
Onkyo A921	Ⓢ	50W	350
Onkyo A922	Ⓢ	70W	400
Pioneer A-607R	Ⓢ	60W	300
Pioneer A-400X	Ⓢ	50W	300
Pioneer A-605R	Ⓢ	80W	400
Pioneer A-300R Precision	Ⓢ	35W	400
Rega Big Brio	Ⓢ	35W	298
Rega Luna	Ⓢ	40W	375
Rega Mira	Ⓢ	60W	450
Roksan Kandy	Ⓢ	60W	475
Shearpe 2.5	Ⓢ	35W	499
Sony TA-FB920R	Ⓢ	65W	300
Sony TA-FA30ES	Ⓢ	70W	400
Sony TA-F3000ES	Ⓢ	40W	500
Talk Electronics Storm 1	Ⓢ	50W	500
Teac AH-500	Ⓢ	50W	280
Technics SU-A808	Ⓢ	55W	300
Technics SU-A909	Ⓢ	100W	400
Thule Spirit IA60	Ⓢ	60W	449
Token K50	Ⓢ	55W	350
Yamaha AX-592	Ⓢ	100W	280

£501 TO £700			
Alchemist Kraken APD6A	Ⓢ	55W	600
Alchemist Nemesis	Ⓢ	80W	700
Audio Analogue Puccini SE	Ⓢ	40W	635
Audio Note Kanji Line SE	Ⓢ	9W	699
Audio Note First integrated	Ⓢ	40W	699
Audiogram MB2	Ⓢ	60W	599
AVC EL34	Ⓢ	30W	600
CR Dev CR324SE	Ⓢ	150W	569
CR Dev Kalypso	Ⓢ	15W	599
CR Dev CR325	Ⓢ	175W	699
Creek 5250SE	Ⓢ	60W	665
Cyrus IIIi	Ⓢ	50W	598
Cyrus 7	Ⓢ	100W	700
Densen Beat B-100 MkII	Ⓢ	60W	650
Gamma Gemini	Ⓢ	12W	699
H/K HK690	Ⓢ	60W	530
Hi Q Sound MCI	Ⓢ	30W	565
LFD Integrated 0	Ⓢ	50W	549
Linn Majik (Line)	Ⓢ	33W	650
Lynwood Opal	Ⓢ	80W	685
Magnum IA200	Ⓢ	100W	599
Magnum Class A	Ⓢ	85W	690
Musical Fidelity A220	Ⓢ	50W	700
Myriad MI 120	Ⓢ	60W	700
Naim Nait 3	Ⓢ	30W	590
Primare A20 Mk II	Ⓢ	70W	600
Rose Scion	Ⓢ	65W	615
Shearpe Phase 2	Ⓢ	50W	689
Sugden Audition T	Ⓢ	65W	549
Talk Electronics Cyclone 1	Ⓢ	60W	550
Talk Electronics Storm 2	Ⓢ	50W	650
Teac AB-X7R	Ⓢ	50W	700
Thule Spirit IA100	Ⓢ	100W	600
Thule Spirit IA60B	Ⓢ	60W	699
YBA Complete Integre	Ⓢ	50W	699

£701 TO £1,000			
Alchemist Nexus	Ⓢ	799	
Alchemist Forsell Integrated	Ⓢ	100W	1,000
Arcam Alpha 10	Ⓢ	100W	800
Ana S2	Ⓢ	12W	1,000
Audio Note Oto Line PP	Ⓢ	12W	950
AVI S2000MI	Ⓢ	100W	999
Copland CSA8	Ⓢ	60W	899
Credo IMP702	Ⓢ	70W	850
Credo IMP703	Ⓢ	70W	1,000
Electrocompaniet ECI-2	Ⓢ	50W	995
Exposure XX Super	Ⓢ	60W	800
Exposure XV Super	Ⓢ	60W	900
Exposure RCOX	Ⓢ	60W	1,000
LFD O LE Integrated	Ⓢ	60W	799
Linn Majik (Phono)	Ⓢ	33W	800
Magnum Class A SE	Ⓢ	80W	795
Marantz PM-17	Ⓢ	60W	900
Meridian 551	Ⓢ	55W	795
Musical Fidelity A3	Ⓢ	85W	849
Musical Fidelity X-A100R	Ⓢ	75W	999
Naim Nait 3 R	Ⓢ	30W	780
Opera Aida	Ⓢ	60W	795
Pioneer A-07	Ⓢ	80W	999
Plinius 2100i	Ⓢ	995	
Roksan Caspian	Ⓢ	70W	795
Shearpe Phase 2 Reference	Ⓢ	50W	799
Sonnesteer Alabaster	Ⓢ	50W	900
Sugden A21a Int	Ⓢ	25W	799
Sugden Audition C	Ⓢ	60W	799
TAG McLaren 60i	Ⓢ	60W	800
TAG McLaren 60iRV	Ⓢ	60W	999
Thule Spirit IA150B	Ⓢ	150W	999

£1,001 TO £2,000			
Aria Simply Four P	Ⓢ	24W	1,595
Aria Simply Four T	Ⓢ	11W	1,650
ATC SIA2-150	Ⓢ	150W	1,984
Audio Note Soro Line PP	Ⓢ	20W	1,200
Audio Note Oto Line SE	Ⓢ	12W	1,200






Connections UK Ultra Connections UK Midas Connections UK HD DBF Acoustics Black Velvet DBF Acoustics Black Velvet SE DBF Acoustics Azure SE DNM-Reson TC75 DPA Slink DPA White Slink DPA Black Slink Ecosse Ref CA1 Ecosse Ref CS1 Ecosse Ref MA2 Ecosse Ref MS2 Ecosse Ref US1 Expressive Tech IC-1 Gamma Wow Balance Goertz M1 Interconnect GT Audio Intercon Harmonix HS-102 Harmonix HS-101 Henley HSP10 Henley HSP50 Henley HSP100 Henley HSP200 Henley HSP250 Heybrook Black Flash Insert Audio Focus 1.2 Insert Audio IC100 Mk II Insert Audio Image 5.1 Insert Audio Status 3.4 Ios 104 Ios 1003 Ios Gamma 1002 Ios 103 Ios 102 Ios 101 Ios 100.X03 Kimber PBJ/Ultraplate Kimber KC1 Kimber Hero Kimber Silver Streak Kimber KCAG Kimber KCTG LAT International IC-50 LAT International IC-80 MkII LAT International IC-100 MkII LAT International IC-200 Mk II Lieder Chanson Lieder Lek Lieder Het Lied Lieder Song Lieder Maas Lieder Rijn Lieder Waal Lumley Silver 12/2 Lumley Silver 14/4 Monster Interlink 100 Monster Interlink 200 Monster Interlink 300 MkII Monster Interlink 400 MkII Moth Leyline Black Moth Leyline Grey Nordost Magic Nordost Black Knight Nordost Solar Wind Nordost Blue Angel Nordost Blue Heaven V/C Nordost Red Dawn Nordost SPM Nordost Quattrofil Ortofon 7N interconnect Precious Metals S550 Precious Metals S535 Precious Metals S552 Precious Metals S553 Precious Metals S5100 Precious Metals S5102 Precious Metals S5103	28.00 39.00 46.00 30.00 40.00 75.00 35.00 41.00 75.00 220.00 65.00 75.00 155.00 165.00 550.00 700.00 799.00 145.00 130.00 195.00 265.00 20.00 35.00 65.00 95.00 150.00 39.00 21.50 46.95 84.95 160.00 20.00 30.00 39.95 45.00 60.00 100.00 150.00 68.00 96.00 110.00 180.00 390.00 720.00 37.00 58.00 95.00 151.00 340.00 420.00 420.00 580.00 620.00 1,000.00 1,400.00 115.00 175.00 11.00 23.00 40.00 50.00 100.00 35.00 60.00 84.95 98.00 150.00 300.00 825.00 1,250.00 250.00 50.00 50.00 70.00 90.00 100.00 130.00 160.00	Precious Metals S5104 Precious Metals S5200 Precious Metals S5202 Precious Metals S5203 Precious Metals S5204 Prowire Silver PAD Elementa QED Qneet 2 QED Qneet 45 Roksan ROK-Intercon Shiny Red Devil Shiny Red Star 2 Shiny Black Star 2 Shiny Pulsar 2 Shiny Quasar 2 Siltech MC2-12 Siltech MC4-24S Siltech FTM-3S Silver Sounds SS2 Silver Sounds SS1 Silver Tone Ex-Static Silver Tone Sci-Fi SME S2LB-4 SME S3LB-4 SME 4900A SME 5900A SonicLink Red SonicLink Silver pink SonicLink Black SonicLink Lilac SonicLink Violet SonicLink Maroon SonicLink Blue Nickel SonicLink Vermilion SonicLink Red earth SonicLink Black earth SonicLink Blue earth SonicLink Black Rhodium Straight Wire Chorus Straight Wire Sonata Supra DAC-X Supra EFF-JSL Supra EFF-XLR Tara Prism 5 Tara Prism 55i Tara RSC Axiom Tara RSC-Prime Gen/2 Tara RSC-Ref Gen. 2 Tara RSC Air 3 Tara RSC Air 2 Tara RSC Air 1 Tara ISM The Three Tara ISM The 2 Tara ISM The One Transparent Cable Musicchord Transparent Cable The Link Transparent Cable Music Link Trichord Pulswire 75 Vampire Wire CC Vampire Wire CC/II Vampire Wire SC/II Vampire Wire SC/IV Vampire Wire AL/2 Vampire Wire SL van den Hul Storm II van den Hul PHS HB van den Hul Source HB van den Hul D102 III van den Hul Thunderline HB van den Hul First Classic van den Hul Second van den Hul First Ultimate van den Hul MC Gold van den Hul MC Silver IT van den Hul MC Silver IT Bal Wireworld Orbit Wireworld Solstice II XLO Type ER-6 XLO Type ER-2	190.00 220.00 290.00 360.00 430.00 60.00 145.00 30.00 70.00 75.00 80.00 120.00 240.00 495.00 850.00 300.00 400.00 730.00 99.00 199.00 35.00 95.00 46.18 52.06 76.83 102.57 25.00 35.00 50.00 65.00 85.00 125.00 150.00 195.00 300.00 450.00 695.00 995.00 40.00 80.00 60.00 80.00 90.00 21.95 100.00 1370.00 170.00 224.50 336.00 560.00 790.00 894.00 1,144.00 2,175.00 48.00 92.00 119.00 169.00 24.00 58.00 98.00 144.00 259.00 412.00 29.99 50.00 65.00 80.00 145.00 240.00 275.00 325.00 350.00 750.00 79.00 470.00 470.00 140.00 155.00 335.00	XLO Pro 125 XLO Type ER-1 XLO Type ER-5 XLO Pro 150 XLO Type ER-4 XLO Pro 100 XLO Pro 102 XLO Ultra 1 XLO Ultra 2 XLO Ref 2 XLO Signature 1.1 XLO Sig 2.1 XLO Sig 3.1 XLO Limited Ed'n	40.00 40.00 50.00 70.00 99.00 119.00 129.00 169.00 199.00 330.00 625.00 675.00 750.00 2,200.00	Apertura Model B Apertura Model A Art Yam Church 5000 Audioquest Digital/video 1 Audioquest Digital/video 2 Audioquest Optlink X Audioquest Digital PRO Audioquest Optlink Pro Audioquest Optlink Z Audiosource Petros Blue Plus S Audiosource Stratos Ser. 2 Cable Talk Digital 2 Cardas Audio Lightning ChordCo Codac ChordCo Optichord ChordCo Prodac DNM-Reson DIG100 DPA Opti-link DPA Digi-link Ecosse Ref MD2 Harmonix HS-101 DIG Insert Audio Dataline 500 Insert Audio Optic 2.1 Insert Audio Dataline 700 Insert Audio Image 5.1 Ios 105 Ios 106 Kimber Opti-link Kimber Illuminati DV-30 Kimber Illuminati D-60 Kimber Illuminati DX-50 Kimber Illuminati Orchid LAT International DI-20-D Monster Datalink 100 Monster Lightspeed 100 Moth Leyline Datalink Nordost Moonglo Nordost Silver Shadow	139.00 255.00 275.00 30.00 60.00 90.00 100.00 150.00 180.00 35.00 59.00 78.00 190.00 38.00 40.00 50.00 26.00 20.00 27.50 71.50 240.00 24.95 29.95 39.95 44.95 25.00 30.00 50.00 70.00 325.00 350.00 750.00 79.00 470.00 470.00 140.00 155.00 335.00	Precious Metals SD35 Precious Metals SD100 Precious Metals SD200 Precious Metals SD202 QED Digi-flex QED Opti-flex QED Qneet OT Roksan ROK-Intercon Shiny Digital Siltech HF-6 SonicLink Green Supra ZAC Supra EFF-ID Supra DAC-XLR Tara Prism D-1 Tara Prism D-2 Tara RSC Air Dig. 75 Tara RSC Air Dig. 110 Tara ISM The One Dig. Theta AT&T Transparent Cable PDL Trichord Pulswire 75D Vampire Wire DI/1 van den Hul Source HB van den Hul Videolink van den Hul AES-EBU 110 van den Hul First van den Hul Second van den Hul First Ultimate XLO Pro 104 XLO Ultra 4 XLO Ref 2 XLO Sig 4.1 XLO Limited Ed'n	20.00 50.00 110.00 145.00 20.00 25.00 30.00 45.00 265.00 145.00 44.95 45.00 45.00 59.99 119.99 345.00 450.00 995.00 550.00 199.00 75.00 150.00 35.00 70.00 75.00 140.00 150.00 180.00 60.00 89.00 180.00 325.00 1,100.00	Acoustic Energy AESC-C3 ALR/Jordan QMM Apertura Silver Argento Copper Argento Copper Ref Argento Silver Argento Silver Ref Art Yam Church M2000 Art Yam Church 5000 Audio Note AN-D Audio Note AN-B Audio Note AN-L Audio Note AN-SP Audio Note AN-SPx Audioquest Type 2 Audioquest F-18 Audioquest Type 6+ Audioquest Indigo + Audioquest Crystal + Audioquest Forest +	11.95 5.00 82.50 35.00 65.00 125.00 380.00 470.00 795.00 4.50 16.50 29.50 150.00 450.00 3.50 3.60 9.00 15.00 25.00 75.00
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## CABLES

### Digital Interconnects

**KEY**  
 [Symbol] – Stranded construction.  
 [Symbol] – Solid-core construction.


Prices of interconnects are for a one-metre terminated pair.



## SPEAKER CABLES

**KEY**  
 [Symbol] – Stranded construction.  
 [Symbol] – Solid-core construction.

Price per mono metre, unterminated.



## "I have never bought a cable which made such an obvious & significant improvement to the sound of my Hi-Fi system." Mr R Qureshi, Bucks.

**The Importance Of Mains Quality**

Mains quality is absolutely fundamental to the reproduction of music. The biggest pollutant is something referred to as radio frequency interference (RFI) which is emitted by a variety of sources including TV and radio, domestic appliances and factories. It causes loss of information, leading to less detail, reduced bass and increased distortion.

**Unique Technology**

Yello Power cables utilise a unique woven cable technology to remove RFI. The crossing action of the wires not only removes RFI already on the mains but also prevents pick-up of airborne RFI.

**Benefits**

Our exclusive Yello Power cable will bring substantial improvements to the sound from your system. It enables you to play at higher volume without distortion. It brings deeper, tighter bass. Yello Power reveals details in the music that you never noticed before.

**Sceptical?**

We believe that the quality of our product speaks for itself. And you have complete peace of mind knowing that if you aren't delighted with the Yello Power we will give you your money back... no quibble, no fuss.



Internal section showing the unique woven cable construction which effectively removes mains interference

- ✓ Lifetime Guarantee
- ✓ 30 Day Home Trial
- ✓ Free Delivery
- ✓ After Sales Support

Order NOW on UK Freephone 0800 373467  
 or phone for our full product catalogue quoting ref: ACH0400

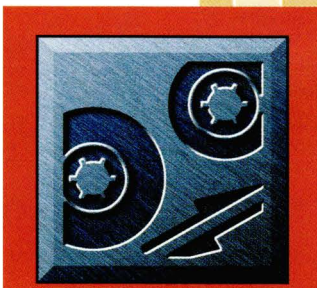


**Russ Andrews Accessories Ltd.,**  
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 Kendal, Cumbria LA8 9PL, UK

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 www.russandrews.com  
 Tel: +44 (0) 1539 825500  
 Fax: +44 (0) 1539 825540



- van den Hul Grasshopper IIICLA **MC** 2,800
- van den Hul Grasshopper III CMN **MC** 2,800
- van den Hul Grasshopper III CHN **MC** 2,900
- van den Hul Grasshopper IVGLA **MC** 3,000
- van den Hul Black Beauty **MC** 3,000
- Wilson Benesch Matrix **MC** 786
- Wilson Benesch Analog **MC** 1,572
- Wilson Benesch Carbon **MC** 1,573



## CASSETTE DECKS

### KEY

- ↔ - Autoreverse - no need to remove and turn around the tape.
- 3-H - 3 heads, i.e. separate record and replay heads.

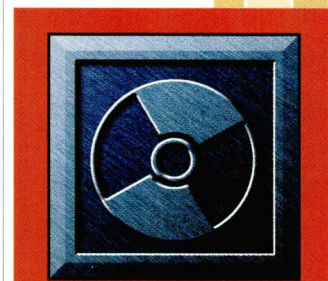
### UP TO £200

- Ariston WX-510 70
- Denon DRM-550 160
- Denon DRW-585 200
- Goodmans Delta 801 130
- H/K DC520 200
- JVC TD-X372BK 170
- JVC TD-R472BK 200
- Kenwood KX-W4080 160
- Kenwood KX-3080 200
- Kenwood KX-W6080 160
- Kenwood KX-5080S 200
- Marantz SD-455 170
- Marantz SD-57 199
- 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-WE435 130
- Sony TC-KE230 130
- Sony TC-WE635 150
- Sony TC-KB820S 180
- Sony TC-WE835 200
- Teac W-416 130
- Teac V-615 100
- Teac RH-300 160
- Teac W-790R 170
- Teac V-1050 **3-H** 180
- Teac RH-500 200
- Technics RS-BX501 170
- Technics RS-TR373 180
- Technics RS-TR474 200
- Technics RS-AZ6 **3-H** 200
- Yamaha KX-393 130
- Yamaha KX-W321 170
- Yamaha KX-493 180

### OVER £200

- Denon DRM-650S 230
- Denon DRM-740 **3-H** 270
- Denon DRS-810 **3-H** 310
- H/K TD420 250
- JVC TD-V662BK **3-H** 270
- JVC TD-W718BK 300
- NAD 613 230
- NAD 614 270
- NAD 616 300
- Nakamichi DR-10 **3-H** 800
- 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 **3-H** 300
- Pioneer CT-S550S Precision **3-H** 340
- Pioneer CT-S830S **3-H** 500
- Pioneer CT-95 **3-H** 1,000
- Rotel RC960BX 250
- Sony TC-KA6ES **3-H** 600
- T+A CD1200R **3-H** 1,180
- Teac W-860R 230
- 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



## CD PLAYERS

### KEY

- ⇒ - Multiplayer: can be loaded with more than one disc.
- ⊠ - Electrical (coaxial) digital output.
- Many players also include an optical (Toslink) output.

### UP TO £250

- Ariston CDX700 50
- Ariston CDX710 70
- Ariston CDX720 80
- Cambridge CD5 100
- Cambridge D100 120
- Cambridge CD4 110
- Cambridge CD4SE 200
- Denon DCD-435 130
- Denon DCD-635 180
- Denon DCD-735 230
- Eclipse CD101a 40
- H/K HD720 200
- H/K FL8350 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 DPF-3010 180
- Kenwood DP-R6090 200
- Kenwood DP-4090 250
- Marantz CD-38 130
- Marantz CC-38 200
- Marantz CD-48 200
- Marantz CD-57 230
- Marantz CD-67II 250
- NAD 522 170
- NAD 510 200
- NAD 524 250
- NAD 523 250
- NAD 512 250
- Pioneer PD-106 130
- Pioneer PD-206 150
- Pioneer PD-S507 190
- Pioneer PD-F606 200
- Pioneer PD-M603 200
- Pioneer PD-F706 250
- Rotel RCD-930AX 180
- Sansui CD220 120
- Sherwood CD-4030R 180
- Sherwood CDC680 180
- Sherwood CDC6050R 180
- Sony CDP-XE220 90
- Sony CDP-XE330 100
- Sony CDP-M305 120
- Sony CDP-XE530 130
- Sony CDP-CE335 160
- Sony CDP-XB720E 200
- Sony CDP-CX57 250
- Synergy CDJ1120 120
- Teac CDP-1120 100
- Teac CD-P1820 130
- Teac CD-P1440 200
- Teac CD-P3450SE 200
- Teac PD-D2400 200
- Teac PD-H500i 240
- Technics SL-PG390A 100
- Technics SL-PG490A 100
- Technics SL-PG590A 120
- Technics SL-PD6 140
- Technics SL-PD8 160
- Technics SL-PS670D 200
- Technics SL-PS770D 250
- Yamaha CDX-393 II 130
- Yamaha CDC-575 180
- Yamaha CDX-493 180
- Yamaha CDC-675 230

### £251 TO £500

- Arcam Alpha 7 SE 350
- Arcam Alpha 8 450
- Arcam Alpha 8SE 500
- Cambridge CD6 300
- Cyrus dAD1.5 399
- Denon DCD-835 280
- Denon DCM-260 300
- Denon DCD-1550AR 350
- H/K HD740 300
- H/K FL8550 300
- H/K HD760 500
- JVC XL-Z674BK 300
- Kenwood DP-R7080 300
- Kenwood DP-9090 300
- Kenwood DP-5090 300
- Kenwood DP-7090 400
- Marantz CD-67SE MkII 300
- Marantz CD6000 OSE 300
- Marantz CC-870 400
- Marantz CD-63IKI 400
- Musical Fidelity E60 300
- Musical Fidelity A2 CD 500
- Musical Fidelity E624 500
- Myryad T-10 400
- NAD 513 290
- NAD 515 350
- NAD 514 370
- NAD 517 400
- Nakamichi MB10 399
- Onkyo DX 7210 260
- Onkyo C721 290
- Onkyo DXC 320 380
- Onkyo DX 7510 400
- Onkyo CM 716 450
- Parasound C/DP-1000 499
- Pioneer PD-S707 300
- Pioneer PD-F805 300
- Pioneer PD-S705 300
- Pioneer PD-F906 350
- Pioneer PD-S904 400
- Pioneer PD-S505 Precision 460
- Roksan Kandy 475
- Rotel RCD-951 300
- Rotel RCD-971 350
- Sony CDP-XB930E 300
- Sony CDP-CX350 350
- Sony CDP-XA20ES 450
- Sony CDP-X3000ES 500
- Sony CDP-CX260 500
- Synergy CDJ2010 300
- Technics SL-MC7 300
- Yamaha CDX-993 400

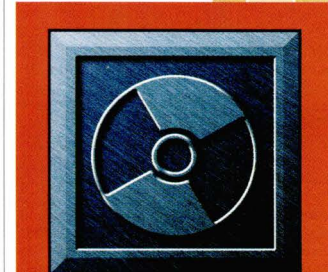
### £501 TO £1,000

- Acurus ACD11 899
- Alchemist Nexus 600
- Arcam Alpha 9 800
- Audio Analogue Paganini 750
- Audio Note CD1 599
- Audio Note AN-CD2 999
- Audiomeca Obsession 999
- AVI S2000MC 24 Ref 999
- Creek CD43 599
- Cyrus dAD3 598
- Cyrus dAD3Q 898
- Denon DCD-1650AR 700
- DPA Renaissance int CD 950
- Helios Model 3 700
- Helios Model 2 950
- Linn Mimik 875
- Linn Genki 995
- Magnum CD2020 595
- Marantz CD-17 800
- Monrio Asty PL 675
- Monrio Privilege 995
- Musical Fidelity X-RAY 799
- Musical Fidelity A3 CD 799
- Myryad T-20 600
- Myryad MC100 800
- Pioneer PDS-06 550
- Primare D20 700
- Quad 99 600
- Roksan Caspian 895
- Rotel RCD-991 750
- Sony CDP-XA555E 1,000
- Suggden Audition 649
- Talk Electronics Thunder 2 700
- Talk Electronics Thunder 3 1,000
- Teac VRDS-8 600
- Teac VRDS-9 700
- Teac VRDS-25X 1,000
- Thule Spirit CD100 600
- Thule Spirit CD150B 699
- Trichord Genesis 569
- Trichord Digital Jukebox 25 619
- Trichord Digital Jukebox 50 669
- Trichord Digital J'box 100 719
- Trichord Revelation 819
- YBA Complete 649
- YBA Special 695

### OVER £1,000

- Acoustic Precision Eikos 1,850
- Advantage CD15 3,995

- Alchemist Kraken CD 1,249
- Alchemist Forseti Int. 1,249
- Alchemist Forseti 1,995
- Audio Research CD2 3,399
- Audiolab 531 7,550
- Audiomeca Keops 1,500
- Audiomeca Talisman 2,150
- Audiomeca Talisman SE 2,300
- Balanced VK-D5 3,995
- Cary CD-301 2,350
- Classe CDP-3 1,395
- Conrad-Johnson DF-2 1,695
- Conrad-Johnson DV-2b 2,495
- Copland CDA-266 1,199
- Copland CDA277 1,649
- Copland CDA289 1,898
- Copland CDA288 1,999
- Cymbal CDP12 1,299
- Exposure CD Player 1,050
- Helios Model 1 1,250
- Helios Stargate 2,250
- Jadis Orchestra 1,345
- Krell KAV250cd 2,490
- Krell KAV300cd 3,599
- Krell KPS255 19,995
- Linn Ikemi 1,950
- Linn Sondeck CD12 12,000
- Marantz CD-17KIS 1,100
- Marantz CD-7 3,500
- Madrigal 39 4,995
- Midntosh MCD7009 3,699
- Meracus Tanto 1,395
- Meracus Imago Player 4,495
- Meridian 506 1,100
- Meridian 508 1,995
- Myryad MCD500 1,300
- NAD S500 1,100
- Naim CD3.5 1,050
- Naim CDX 2,200
- Naim NACDSII/XPS 5,625
- Oracle CD Player 9,499
- Pink Triangle Numeral 1,049
- Pink Triangle Ltaural 2,200
- Primare D302 1,500
- Proceed CDP 3,295
- Resolution CD50 2,995
- Roksan Attessa-DP3P 1,495
- Shearar Phase 7 1,499
- Sherwood CD1 1,100
- Sonic Frontiers Anthem CD1 1,699
- Sonic Frontiers SFCD-1 3,799
- Sony SCD-1 2,700
- T+A CD1210R 1,185
- T+A CD1220R 1,540
- TAG McLaren CD20R 1,250
- Theta Miles SE 2,390
- Tube Tech Fusion 1,100
- Tube Tech Fulcrum 2,800
- Wadia 860 7,450
- XTC CDP-1 1,350
- YBA Integre a 1,095
- YBA CD3a 1,850
- YBA CD2a 2,950
- YBA CD1a 3,895



## CD TRANSPORTS

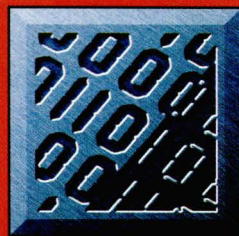
### KEY

- ⊠ - Electrical (coaxial) digital output.
- Many players also include an optical (Toslink) output.

- Alchemist Forseti Drive 1,100
- Altis CDT III 4,995
- Audio Note CDT Zero 999
- Audio Synthesis Transcend Decade 3,295
- Audiomeca Damnation 999
- Audiomeca Damnation SE 1,100
- Audiomeca Talisman 1,850
- Audiomeca Talisman SE 1,999
- Audiomeca Talisman DOB 2,250
- Conrad-Johnson DR-1 1,795
- DPA Enlightenment Drv 1,775
- Jadis JD3 999
- Jadis JDI 9,190
- Linn Karik 1,850
- Madrigal 37 3,995
- Madrigal 31.5 9,295
- Meracus Imago 3,995

Monrio Bitmatch	⌚	950
Muse Model 5	⌚	1,800
Muse Model 8	⌚	3,500
Oracle CD Drive	⌚	7,399
Pink Triangle Cardinal II	⌚	909
Resolution VT960	⌚	3,500
Roksan Atessa-DP3	⌚	1,295
Sonic Frontiers Transport 3		5,999
T+A CM1200R	⌚	875
TAG McLaren CDT20R	⌚	1,499
Teac VRDS-T1	⌚	550
Teac P-30	⌚	2,500
Theta Pearl	⌚	1,349
Theta Jade	⌚	2,650
Thorens TCD-2000	⌚	999
Trichord Digital Turntable	⌚	719
Wadia 8	⌚	3,195
Wadia 20	⌚	4,370

Wadia 9		12,790
Woodside DVAC-18		1,499

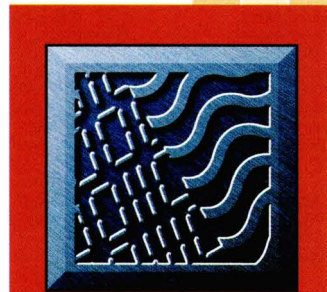


**DIGITAL RECORDERS**

**KEY**

MD – MiniDisc  
DAT – Digital Audio Tape  
P – Portable

Denon DMD-1000	MD	300
Kenwood DMF-9020	MD	499
Kenwood DM-7090	MD	500
Kenwood DM-9090	MD	550
Marantz CM635	MD	500
Marantz DR700	MD	600
Onkyo MD-121	MD	450
Onkyo MD 122	MD	700
Philips CDR770		1
Philips CDR775		1
Philips CDR570		1
Philips CDR951		1
Pioneer MJ-D707	MD	199
Pioneer PDR-555RW		480
Pioneer PDR-04		700
Pioneer D-05	DAT	900
Pioneer PDR-05		1,000
Pioneer D-C88	DAT	2,000
Sharp MD-R1 MkII	MD	180
Sharp MD-R3H	MD	300
Sharp MD-R2	MD	300
Sharp MD-MS200H	MD	350
Sharp MDXV300H	MD	1,000
Sony MZ-R55	MD	1
Sony MDS-S40	MD	1
Sony MZ-R37	MD	1
Sony MZ-R5ST	MD	1
Sony MDS-JE530	MD	200
Sony MDS-JB930	MD	300
Sony MDS-JA20ES	MD	500
Sony MDS-JA55ES	MD	650
Teac MDH300	MD	300
Teac MD-H500i	MD	350
Teac MD-8	MD	600
Teac MD-5	MD	600
Teac MD-10	MD	900
Traxdata Traxaudio 900		399
Yamaha CDR-595	MD	250
Yamaha CDR-S1000		400



**DIGITAL TO ANALOGUE CONVERTERS (DACs)**

**KEY**

4 – Number of digital inputs.

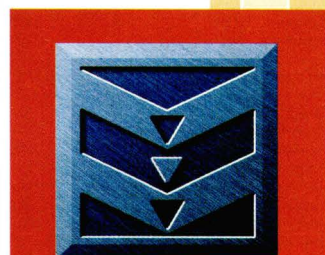
Alchemist TS-D-1		500
Alchemist Forseti DAC	③	1,100
Altis Reference	③	4,995
Audio Note DAC Zero		369
Audio Note DAC1		675
Audio Note DAC2		1,099
Audio Note DAC3		1,750
Audio Research DAC5	③	2,335
Audio Research DAC3 MkII	④	3,999
Audio Synthesis DAX Decade	⑤	2,795
Audiomeca Elixir	①	799
Audiomeca Ambrosia		1,850
Boulder 2020	⑥	21,000
Chord DSC900		1,850
Chord DSC1100	①	2,765
Chord DSC1500	⑤	4,800
Conrad-Johnson D/A-3	①	1,195
Conrad-Johnson D/A-2b	①	1,990
dCS Elgar		8,500
DPA Little Bit 3	③	325
DPA Renaissance DAC		595
DPA Enlightenment DAC		850
DPA SX128		2,000
DPA SX256		4,000
DPA SX512		8,000
Harmonix Reimyo DAP-77		2,790
Jadis J52		2,499
Jadis JS1	③	6,990
LFD DAC2		1,950
LFD DAC3		3,000
Linn Numerik		1,500
Madrigal 360	⑥	4,395
Madrigal 360S	⑥	6,895
Madrigal 30.6		16,495
Meracus Auriga		1,295
Meracus Flagrare		2,495
Meridian 566		1,095
Monrio 18B2	③	795
Muse Model 2		2,190
Muse Model 2 Plus		2,500
Muse Model 2/96	③	3,000
Musical Fidelity X-ACT		200
Musical Fidelity X-24K		300
Musical Fidelity X-DAC		300
Onkyo DX 7310		330
Resolution D92	⑦	1,500
Roksan Atessa-DA2	③	595
Sonic Frontiers Processor 3	⑤	5,999
Sumo Theorem II		945
Sumo Theorem IIB		1,155
TAG McLaren DAC20	⑦	1,249
Teac D-T1	④	500
Theta Chroma 396 Std		799
Theta Pro Geny		1,099
Theta Pro Prime Ila		1,699
Theta Pro Basic Ila		2,990
Theta Casablanca LS		6,150
Thorens TDA-2000	⑤	700
Trichord Pulsar Ser One		1,395
Wadia 12		1,530
Wadia 15		3,790
Wadia 64.4		4,750
Wadia 16		7,395
Wadia 7		9,995

Kenwood KPM-310	D	18
Kenwood KPM-410	D	25
Maxell HP-2000	D	20
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 HD400	D	25
Sennheiser HD470	D	35
Sennheiser HD60TV	D	40
Sony MDR-250V	D	18
Sony MDR-A34L	D	18
Sony MDR-ED228LP	D	18
Sony MDR-C52LP	D	20
Sony MDR-E848LP/MPL	D	20
Sony MDR-ED238ML	D	22
Sony MDR-C65G	D	25
Sony MDR-C62LP	D	25
Sony MDR-G59G	D	30
Sony MDR-G72LP	D	30
Sony MDR-V300	D	30
Sony MDR-IF130K	D	30
Sony MDR-EX70LP	D	35
Sony MDR-ED268LP	D	35
Stanton ST Pro	D	25
Technics RP-HT355	D	20
Technics RP-F200	D	25
Technics RP-F400	D	30
Technics RP-HT550	D	35
Technics RP-F500	D	40
Vivanco SR200	D	20
Vivanco SR150	D	20
Vivanco SR250	D	20
Vivanco IR5700	D	30
Vivanco IR5800	D	40

Sennheiser HD25 SP	D	90
Sennheiser HD570 Symphony	D	90
Sennheiser HD545 Ref	D	100
Sennheiser IS450	D	110
Sennheiser HD265 Linear	D	125
Sennheiser HDC 451-1	D	130
Sennheiser HD250II	D	150
Sennheiser HD590	D	150
Sennheiser HD565 Ovat'n	D	150
Sennheiser HD25-13	D	160
Sennheiser HD25	D	160
Sennheiser HD 580 P'cision	D	200
Sennheiser HD600	D	250
Sennheiser IS850	D	859
Sennheiser HE60/HEV70	E	998
Sennheiser Orpheus	E	9,652
Sony MDR-V500DJ	D	50
Sony MDR-RF830RK	D	60
Sony MDR-V700DJ	D	100
Sony MDR-D77	D	130
Sony MDR-F1	D	200
Sony MDR-CD1700	D	200
Sony MDR-DS5000	D	400
Stanton DJ Pro 101/HB	D	65
Stanton DJ Pro 1000	D	95
Stanton DJ Pro 1001	D	150
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
Stax Omega	E	1,896
Technics RP-F800	D	50
Technics RP-HC100	D	55
Technics RP-DJ1200	D	130
Vivanco SR650	D	45
Vivanco FMH 3000	D	50
Vivanco SR750	D	50
Vivanco SR850	D	50
Vivanco SR7980	D	60
Vivanco SR950	D	80
Vivanco FM8180	D	99
Vivanco SR2000IFL	D	100

**OVER £41**

AKG K301	D	70
AKG K240DF	D	100
AKG K222iR	D	100
AKG K401	D	120
AKG K501	D	150
AKG K333iR	D	150
AKG K444iR	D	180
AKG K290S	D	250
AKG K1000	D	700
Audio Technica ATH910PRO	D	80
Audio Technica ATHD40FS	D	100
Audio Technica ATH-M40	D	120
Audio Technica ATH911	D	120
Beyer DT311	D	50
Beyer DT411	D	63
Beyer DT331	D	65
Beyer DT431	D	81
Beyer DT511	D	106
Beyer DT801	D	125
Beyer DT831	D	140
Beyer DT811	D	145
Beyer DT100	D	160
Beyer DT901	D	160
Beyer DT911	D	170
Denon AH-D210	D	45
Denon AH-D350	D	65
Denon AH-D550	D	80
Denon AH-D650	D	95
Denon AH-D750	D	130
Denon AH-D950	D	150
Grado SR40	D	45
Grado SR60	D	79
Grado SR80	D	100
Grado SR125	D	150
Grado SR225	D	200
Grado SR325	D	300
Grado RS2	D	495
Grado RS1	D	695
Hama SL276	D	50
Hama IR Cordless	D	60
Jecklin Float Model 1	D	79
Jecklin Float Model 2	D	99
Jecklin Float ELS	E	399
JVC HA-D727	D	43
JVC HA-D50	D	45
JVC HA-W60	D	49
JVC HA-D910	D	65
JVC HA-W200RF	D	75
JVC HA-DX1	D	200
JVC HA-DX3	D	250
JVC HA-D1000	D	250
JVC HA-F25	D	699
Koss TD/80	D	50
Koss R/100	D	100
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 HD200	D	50
Sennheiser IS 380	D	50
Sennheiser HD490	D	50
Sennheiser HD495	D	60
Sennheiser HD500	D	70
Sennheiser RS400	D	80
Sennheiser HD270	D	80



**EQUIPMENT SUPPORTS**

**Hi-Fi Tables**

**KEY**

4 – Number of shelves.

Avik Furniture A4	4	350
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 VR17/17	3	190
Alphason GR17/17-AS	4	275
Apollo Soprano	4	275
Arctic Air Head 1	1	275
Arctic Air Head TNT	1	725
Arctic Suspense 5	5	1,895
Atacama Europa	4	240
Audiophile Base 01	1	79
Audiophile S4T120	4	280
Audiophile S4T120P	4	560
Audiophile Furniture Base	4	615
Avid Isonchelf	5	1,100
BCD Model 1006/8	1	795
BCD Model 1000	3	1,250
Custom Design Aspect 650	4	250
Custom Design Aspect 850	5	280
Custom Design e'lite E5	5	280
Custom Design Aspect 500AV	3	290
Custom Design e'lite XE5	5	300
Custom Design e'lite AVE	8	350
Deadrock 701	1	60
Deadrock 802	2	90
Deadrock 703	3	130
Deadrock 705	5	230
Deadrock 704	4	250
Elemental Isotube X1	1	169
Elemental Isotube BS	1	199
Elemental Isotube TS	1	209
Elemental Isotube IS	1	209
Elemental Reference B1	1	329
Elemental Isotube X2	2	379
Elemental Isotube X3	3	489
Elemental Reference BS	1	499
Elemental Reference X1	1	499
Elemental Reference TS	1	549



**HEADPHONES**

**KEY**

'D' – Dynamic type, compatible with virtually all normal headphone outputs.

'E' – Electrostatic type; generally includes a separate power supply.

OB – Open-back construction.

CB – Closed-back construction.

AKG Rox	D	30
Aural Envelope DX200	D	20
Aural Envelope DX220	D	30
Beyer DT111	D	15
Beyer DT211	D	31
Beyer DT211TV	D	35
Hama SL273	D	20
Hama SL275	D	25
JVC HA-CD88	D	18
JVC HA-DS25	D	20
JVC HA-F65	D	20
JVC HA-D626	D	25



Elemental Reference IS	1	549	Soundstyle X053	4	210
Elemental Reference X2	2	799	Soundstyle X050	4	210
Elemental Isotube X4	4	849	Soundstyle X6300	3	215
Elemental Isotube X4/Ref	4	1,199	Soundstyle X100	4	230
Elemental Reference X3	3	1,199	Soundstyle X6110	4	230
Elemental Isotube X4Rse	4	1,349	Soundstyle X058	5	240
Elemental Reference X4	4	1,599	Soundstyle X310	3	250
Fi-Rax R4	6	399	Soundstyle X105	5	250
Finite Elemente A03 pagode	4	479	Soundstyle X6053	4	255
Finite Elemente E03 pagode	4	649	Soundstyle X6100	4	265
Finite Elemente HD05	4	1,995	Soundstyle X6310	3	275
Frameworks H175	1	139	Soundstyle Radius SR100	4	280
Frameworks FS1	1	150	Soundstyle X6058	5	290
Frameworks H500	3	265	Soundstyle X6105	5	300
Frameworks FT2	2	285	Soundstyle Finewoods W105	5	320
Frameworks FT3	2	350	Standesign Design 4	4	190
Frameworks H700	3	355	Stands Unique Isolation Platform	1	55
Frameworks H900	3	389	Stands Unique Sound Support	4	260
Impulse Iso-plate		190	Stands Unique Sound Tower	5	299
JPW 3 Tier	3	80	Stands Unique Compact Sound Supp	4	329
JPW 5 Tier	5	100	Stands Unique Sound Support 10	4	329
Linn K3000		85	Stands Unique Sound Twr Cabinet	5	389
Mana Sound Frame		125	Stands Unique Ref Wall Support	1	560
Mana Mini Table		150	Stands Unique Ultimate Tower	10	720
Mana Power supply table		150	Stands Unique Ref Floor Support	6	840
Mana Reference flat top		150	Target B5	5	175
Mana Sound Shelf		175	Townshend Seismic Sink 1-CD		110
Mana Sound Stage		200	Townshend Seismic Sink 1-3D		400
Mana Sound Table		235	Townshend S/Sink Stand 1-4	4	999
Mana Ref Shelf		325	Townshend Seismic Sink Stand	4	1,245
Mana Reference Table		350	Vibrplane Passive	1	1,895
Mana 2 Tier Stand		375	Vibrplane Active	1	3,600
Mana 3 Tier Stand		450	Wilson Benesch Standard Shelf	1	130
Mana 4 Tier Stand		500	Wilson Benesch Mono Block	1	265
Mana 5 Tier Stand		600	Wilson Benesch Kevlar Shelf	1	270
Mana 6 Tier Stand		700	Wilson Benesch Asside Basic	4	590
Mana 7 Tier Stand	7	800	Wilson Benesch Asside	4	720
Mana 8 Tier Stand	8	900	Wilson Benesch Triptych	1	990
Mission Stance		100			
Optimum G4/Pedestal	5	130			
Optimum OPT 3406	3	149			
Optimum G5/Pedestal	6	150			
Optimum OPT 4906	4	199			
Optimum OPT 3000	3	200			
Optimum OPT 6606	5	249			
Optimum OPT 340	5	249			
Optimum OPT 5000	5	280			
Optimum OPT 490	4	299			
Optimum OPT 440	4	299			
Optimum OPT 10206	3	299			
Optimum AV 300	6	329			
Optimum OPT 700	5	349			
Optimum OPT 610	5	349			
Optimum OPT 660	4	349			
Optimum OPT 1020	6	399			
Optimum OPT 8000	8	400			
Optimum OPT 1190	7	450			
Projekt A3	3	145			
Projekt A4	4	215			
Projekt A5	5	235			
Projekt B3	6	255			
Projekt A6	6	280			
Projekt B3i	6	300			
Projekt B4	8	340			
Projekt B Multi	8	345			
Projekt B3ii	7	345			
Projekt C3	9	375			
Projekt D3	12	420			
Projekt C3i	8	420			
Projekt B5	10	425			
Projekt C3iii	11	465			
Projekt C3ii	11	465			
Projekt D5i	12	500			
Projekt C4	12	500			
Projekt C3iv	10	510			
Projekt D5ii	14	545			
Projekt C Multi	9	555			
Projekt D4	16	560			
Quadraspire Q4S mini shelf	1	65			
Quadraspire Q4S shelf	1	65			
Quadraspire QKS Cabinet shelf	1	80			
Quadraspire QAV shelf	1	130			
Quadraspire Q4M mini table	4	250			
Quadraspire Q4 table	4	250			
Quadraspire Q4SP Table	4	320			
Quadraspire QAV table	3	350			
Quadraspire QAVSP Table	3	400			
Quadraspire QK Cabinet	4	450			
Reson DOMOPS	1	195			
Reson DOMOWS	1	195			
Solid Steel Model B	1	141			
Solid Steel Model A	1	152			
Solid Steel Series 3	4	220			
Solid Steel Series 5	4	310			
Solid Steel H3	5	372			
Solid Steel H5	5	517			
Sound Org Z022	1	65			
Sound Org Z021	2	78			
Sound Org Z030	3	100			
Sound Org Z060	4	120			
Sound Org Z038	5	135			
Sound Org Z540	4	140			
Sound Org Z560	5	160			
Sound Org Z545	4	160			
Sound Org Z530	3	170			
Soundstyle X300	3	180			
Soundstyle X305	3	210			

Elemental Isotube SCZ	49	699	Elemental Isotube SCZse	49	799
Elemental Reference SZ	52	999	Elemental Reference SZ	52	1,499
Harbeth HL-Stands	21	249	Heybrook Stand-56	63	69
JPW MS2	45	45	JPW MS2	61	55
JPW MS3	61	55	JPW MS1	46	80
JPW MS1	46	80	JPW HS1	61	120
JPW HS1	61	120	JPW HS2	45	120
JPW HS2	45	120	Mana Sound Base		175
Mana Sound Base		175	Opera WS1/E	60	235
Opera WS1/E	60	235	Opera S1	60	295
Opera S1	60	295	Opera S2	60	345
Opera S2	60	345	Partington A-4	60	119
Partington A-4	60	119	Pioneer CP-7		50
Pioneer CP-7		50	Pioneer CP-8		80
Pioneer CP-8		80	Projekt Signature		55
Projekt Signature		55	Royd Royd		55
Royd Royd		55	Russ Andrews Torlyte	61	599
Russ Andrews Torlyte	61	599	Silverado Silverado 1 Stand	60	350
Silverado Silverado 1 Stand	60	350	Solid Steel SL	63	186
Solid Steel SL	63	186	Solid Steel SS	63	333
Solid Steel SS	63	333	Solid Steel SS801	25	366
Solid Steel SS801	25	366	Sonus Faber Ironwood		475
Sonus Faber Ironwood		475	Sonus Faber Stonewood		497
Sonus Faber Stonewood		497	Sound Org Z037		55
Sound Org Z037		55	Sound Org Z027		55
Sound Org Z027		55	Sound Org Z026		55
Sound Org Z026		55	Sound Org Z518		65
Sound Org Z518		65	Sound Org Z524	45	69
Sound Org Z524	45	69	Soundstyle X6118	42	100
Soundstyle X6118	42	100	Stands Unique Speaker support	59	165
Stands Unique Speaker support	59	165	Stands Unique Tuned Spkr Support	59	230
Stands Unique Tuned Spkr Support	59	230	Stands Unique Tuned Carbon Fibre	59	299
Stands Unique Tuned Carbon Fibre	59	299	Stands Unique Vivas CF Spkr Supp	60	349
Stands Unique Vivas CF Spkr Supp	60	349	Target TR60	60	68
Target TR60	60	68	Target R1	53	280

JPW ML210i			JPW ML310i		100
JPW ML410i			JVC SX-SC1VBK		130
JVC SP-50V8			JVC SP-X220TBK		60
JVC SP-X220TBK			JVC SP-X550BK		80
JVC SP-X550BK			KEF Coda 7		100
KEF Coda 7			Kenwood LS-90UK		129
Kenwood LS-90UK			Mission 700		130
Mission 700			NAD 801		100
NAD 801			Paradigm Micro v2		100
Paradigm Micro v2			Paradigm Atom v2		100
Paradigm Atom v2			Pioneer CS-3030		120
Pioneer CS-3030			Polk AB410		100
Polk AB410			Realistic Minimus 26		56
Realistic Minimus 26			Realistic Minimus Pro-77		100
Realistic Minimus Pro-77			Sony SS-86E		100
Sony SS-86E			Tangent Monitor 3		60
Tangent Monitor 3			Tangent Monitor 5		80
Tangent Monitor 5			Tannoy Mercury M1		120
Tannoy Mercury M1			TDL Nucleus 1		75
TDL Nucleus 1			TDL Nucleus 2		130
TDL Nucleus 2			Teac LS-X8 Mk II		80
Teac LS-X8 Mk II			Technics SB-CS65		80
Technics SB-CS65			W'dale Valdius 100		80
W'dale Valdius 100			W'dale Diamond 7.1		100
W'dale Diamond 7.1			W'dale Valdius 200		110
W'dale Valdius 200			W'dale Modus Micro		110

### £131 TO £200

Acoustic Energy Aegis Centre			Acoustic Energy Aegis One		140
Acoustic Energy Aegis One			Acoustic Energy AE100i		150
Acoustic Energy AE100i			Allison Model 4A		200
Allison Model 4A			B&W DM302 Ser II		170
B&W DM302 Ser II			B&W DM601 Ser II		150
B&W DM601 Ser II			Bose 201 IV		199
Bose 201 IV			Boston CR6		200
Boston CR6			Boston CR7		149
Boston CR7			Boston CR8		169
Boston CR8			Boston Micro 80 Sat		179
Boston Micro 80 Sat			Boston Runabout		189
Boston Runabout			Boston 335		199
Boston 335			Boston 351		200
Boston 351			Boston CR7		199
Boston CR7			Boston Runabout II		200
Boston Runabout II			Celestion 15i		199
Celestion 15i			Cerwin-Vega CT-165		200
Cerwin-Vega CT-165			Eltax Liberty 3+		149
Eltax Liberty 3+			Genexa GX650		160
Genexa GX650			Genexa Pro		140
Genexa Pro			GLL Imagio IC218		200
GLL Imagio IC218			GLL Imagio IC318		150
GLL Imagio IC318			Heybrook HB1/2000		199
Heybrook HB1/2000			Heybrook Heylette B		200
Heybrook Heylette B			Heybrook HB2/2000		200
Heybrook HB2/2000			Interaudio XL2000		150
Interaudio XL2000			Jamo Cornet 165		150
Jamo Cornet 165			Jamo 38		150
Jamo 38			Jamo 525		170
Jamo 525			Jamo 560		180
Jamo 560			Jamo 660		200
Jamo 660			Jamo Studio 180		200
Jamo Studio 180			Jamo D165		150
Jamo D165			Jamo 68		200
Jamo 68			Jamo 892		150
Jamo 892			JBL CM52		200
JBL CM52			JBL MX1000		170
JBL MX1000			JBL LX20		200
JBL LX20			JBL MX1500		200
JBL MX1500			JM Lab Tantal 505		199
JM Lab Tantal 505			JPW ML510i		150
JPW ML510i			JPW ML610i		180
JPW ML610i			KEF Cresta 2		149
KEF Cresta 2			KEF Coda 8		189
KEF Coda 8			KEF Model 60S		199
KEF Model 60S			KEF Q15		200
KEF Q15			Kenwood LS-200G		179
Kenwood LS-200G			Magnat Vector 22		160
Magnat Vector 22			Mission 701		200
Mission 701			Mission 771e		200
Mission 771e			Mission 702e		200
Mission 702e			M-A Monitor 1		200
M-A Monitor 1			Mordaunt-Short MS206		200
Mordaunt-Short MS206			Paradigm Mini Monitor		170
Paradigm Mini Monitor			Pioneer CS-5030		180
Pioneer CS-5030			Polk M2		200
Polk M2			Polk RT3		200
Polk RT3			Polk AB610		200
Polk AB610			Royd A7X		155
Royd A7X			Sequence 200		199
Sequence 200			Sony SS-126EB		150
Sony SS-126EB			Sony SS-176E		200
Sony SS-176E			Tangent Monitor 9		150
Tangent Monitor 9			Tangent Monitor 11		180
Tangent Monitor 11			Tannoy Mercury M2		140
Tannoy Mercury M2			Tannoy Revolution R1		200
Tannoy Revolution R1			TDL Nucleus 3		200
TDL Nucleus 3			Technics SB-CS95		150
Technics SB-CS95			Technics SB-M20		200
Technics SB-M20			TLC Maestro 705		159
TLC Maestro 705			W'dale Valdius 300		150
W'dale Valdius 300			W'dale Diamond 7.3		150
W'dale Diamond 7.3			W'dale Modus Music Two		200
W'dale Modus Music Two			W'dale Diamond 7.2 Anri'y		200
W'dale Diamond 7.2 Anri'y			W'dale Valdius 400		200



## EQUIPMENT SUPPORTS

### Speaker Stands

#### KEY

60 – Height of stand in cm.

Acoustic Solutions Platform Eight		180
Aliante Base		425
Aliante Vela		750
Alphason NCI	60	47
Alphason AKros I	60	49
Alphason RS1	120	49
Alphason NCII	60	84
Alphason HDS	60	85
Alphason Titan S	60	125
Apollo Olympus	60	75
Apollo A26	66	80
Atacama BD21	56	55
Atacama BD17		55
Atacama BD25		60

# H I - F I P R I C E G U I D E

Yamaha NS-45E	⏏	⏏	⏏	200
Yamaha NS-100	⏏	⏏	⏏	200
<b>£201 TO £300</b>				
Arcadyis Baby 1	⏏	⏏	⏏	299
Audio Gem Opal	⏏	⏏	⏏	230
B&W DM602 Ser II	⏏	⏏	⏏	300
Blueroom Minipod	⏏	⏏	⏏	250
Bose 151	⏏	⏏	⏏	220
Bose 301 IV	⏏	⏏	⏏	300
Boston 361	⏏	⏏	⏏	219
Boston CR8	⏏	⏏	⏏	239
Boston 381	⏏	⏏	⏏	259
Boston CR9	⏏	⏏	⏏	279
Boston Voyager	⏏	⏏	⏏	299
Celestion C1	⏏	⏏	⏏	299
Celestion 23i	⏏	⏏	⏏	299
Cerwin-Vega VS-8	⏏	⏏	⏏	250
Cerwin-Vega CT-330	⏏	⏏	⏏	300
Chario Syntar 100	⏏	⏏	⏏	249
Chario Ref 100	⏏	⏏	⏏	299
Chario Hiper 1000	⏏	⏏	⏏	300
Dali 150B	⏏	⏏	⏏	260
Dali 150	⏏	⏏	⏏	300
Eltax Linear Response	⏏	⏏	⏏	249
GLL Imagio IC238TL	⏏	⏏	⏏	250
Heybrook Optima	⏏	⏏	⏏	259
Heybrook Heylios	⏏	⏏	⏏	269
Heybrook HB3/2000	⏏	⏏	⏏	300
Interaudio XL3000	⏏	⏏	⏏	230
Interaudio XL4000	⏏	⏏	⏏	260
Jamo Cornet 175	⏏	⏏	⏏	230
Jamo Classic 4	⏏	⏏	⏏	250
Jamo Art	⏏	⏏	⏏	300
Jamo D265	⏏	⏏	⏏	300
JBL CM62	⏏	⏏	⏏	250
JM Lab Tantal 507	⏏	⏏	⏏	299
JPW ML710i	⏏	⏏	⏏	250
JPW ML810i	⏏	⏏	⏏	300
JVC SX-SW10	⏏	⏏	⏏	300
KEF Coda 9	⏏	⏏	⏏	299
KEF Model 70S	⏏	⏏	⏏	299
Linn Kan	⏏	⏏	⏏	295
Mission 750	⏏	⏏	⏏	248
Mission 772	⏏	⏏	⏏	250
Mission 703	⏏	⏏	⏏	300
M-A Monitor 2	⏏	⏏	⏏	250
M-A Silver 3	⏏	⏏	⏏	300
Mus Tec Kestrel SE	⏏	⏏	⏏	300
NAD 802	⏏	⏏	⏏	280
Paradigm Monitor 5	⏏	⏏	⏏	250
Paradigm Monitor 7	⏏	⏏	⏏	300
Pioneer CS-7030	⏏	⏏	⏏	230
Pioneer CS-9030	⏏	⏏	⏏	280
Pioneer S-LC1	⏏	⏏	⏏	300
Polk AB505	⏏	⏏	⏏	220
Polk M3 II	⏏	⏏	⏏	220
Polk RT5	⏏	⏏	⏏	250
Polk RT7	⏏	⏏	⏏	300
Polk M5	⏏	⏏	⏏	300
Promenade SP1	⏏	⏏	⏏	299
Rega Aria	⏏	⏏	⏏	250
Royd The Envoy	⏏	⏏	⏏	249
Royd Minstrel	⏏	⏏	⏏	275
Ruark Epilogue	⏏	⏏	⏏	239
Sequence 300	⏏	⏏	⏏	249
Sony SS-176EB	⏏	⏏	⏏	250
Tannoy Mercury M3	⏏	⏏	⏏	230
TDL Nucleus 4	⏏	⏏	⏏	300

TLC Maestro 130S	⏏	⏏	⏏	289
TLC Voyager 350	⏏	⏏	⏏	289
Wdale Modus Music Four	⏏	⏏	⏏	230
Wdale Valdis 500	⏏	⏏	⏏	300
Yamaha NS-200	⏏	⏏	⏏	300
ZYP A1	⏏	⏏	⏏	229
ZYP A2S	⏏	⏏	⏏	299
<b>£301 TO £500</b>				
Acoustic Energy AE105SE	⏏	⏏	⏏	350
Acoustic Energy AE109	⏏	⏏	⏏	350
Acoustic Energy Aegis Three	⏏	⏏	⏏	350
Acoustic Energy AE120	⏏	⏏	⏏	500
Allison Model 2A	⏏	⏏	⏏	420
Arcadyis Baby 2	⏏	⏏	⏏	399
Arcadyis ASC	⏏	⏏	⏏	399
Arcadyis AK1	⏏	⏏	⏏	449
Audiovector C1	⏏	⏏	⏏	399
AVI Neutron	⏏	⏏	⏏	499
AVI NuNeutron	⏏	⏏	⏏	500
B&O Beovox CX50	⏏	⏏	⏏	325
B&O Beovox CX100	⏏	⏏	⏏	425
B&W DM305	⏏	⏏	⏏	350
B&W CDM2SE	⏏	⏏	⏏	400
Bandor Pictures	⏏	⏏	⏏	352
Boston Micro 90 Sat	⏏	⏏	⏏	369
Boston Micro 80 Sys	⏏	⏏	⏏	369
Boston VR20	⏏	⏏	⏏	380
Castle Inversion 15	⏏	⏏	⏏	425
Celestion 25i	⏏	⏏	⏏	399
Celestion 30i	⏏	⏏	⏏	449
Celestion 35i	⏏	⏏	⏏	499
Cerwin-Vega VS-10	⏏	⏏	⏏	350
Chario Syntar 100T	⏏	⏏	⏏	399
Chario Ref 1000	⏏	⏏	⏏	499
Dali 104B	⏏	⏏	⏏	370
Dali Royal Menuet MkII	⏏	⏏	⏏	400
Dali 606	⏏	⏏	⏏	400
Dali Royal	⏏	⏏	⏏	500
Def Tech Celsius	⏏	⏏	⏏	395
Dynaudio Audience 40	⏏	⏏	⏏	399
Epos ES12	⏏	⏏	⏏	499
GLL Imagio IC248TL	⏏	⏏	⏏	350
GLL Imagio IC258TL	⏏	⏏	⏏	450
GLL Imagio IC348TL	⏏	⏏	⏏	500
Heybrook Heylo	⏏	⏏	⏏	359
Heybrook Ultima	⏏	⏏	⏏	399
Heybrook HB4/2000	⏏	⏏	⏏	500
Jamo Classic 6	⏏	⏏	⏏	330
Jamo Cornet 195	⏏	⏏	⏏	350
Jamo BX-100A	⏏	⏏	⏏	350
Jamo 98	⏏	⏏	⏏	350
Jamo D365	⏏	⏏	⏏	400
Jamo Classic 8	⏏	⏏	⏏	400
Jamo Graphic	⏏	⏏	⏏	400
Jamo 128	⏏	⏏	⏏	450
Jamo BX-150A	⏏	⏏	⏏	450
Jamo Atmosphere	⏏	⏏	⏏	500
JBL LX60	⏏	⏏	⏏	350
JBL Ti 200	⏏	⏏	⏏	400
JM Lab Tantal 515	⏏	⏏	⏏	499
Jordan Watts JHFLG	⏏	⏏	⏏	380
Jordan Watts JH200	⏏	⏏	⏏	420
JPW ML910i	⏏	⏏	⏏	350
JPW ML1010i	⏏	⏏	⏏	450
KEF Q35	⏏	⏏	⏏	349
KEF Q55	⏏	⏏	⏏	499
KEF RDM One	⏏	⏏	⏏	499
Linn Sekrit	⏏	⏏	⏏	395

Magnat Vector 55	⏏	⏏	⏏	349
Magnat Vector 77	⏏	⏏	⏏	449
Mission 751f	⏏	⏏	⏏	348
Mission 773e	⏏	⏏	⏏	400
Mission 704	⏏	⏏	⏏	450
Mission 774	⏏	⏏	⏏	500
Mission 705	⏏	⏏	⏏	500
M-A Monitor 3	⏏	⏏	⏏	350
M-A Silver 5	⏏	⏏	⏏	400
M-A Studio 25E	⏏	⏏	⏏	500
M-A Monitor 4	⏏	⏏	⏏	500
M-A 700 PMC	⏏	⏏	⏏	500
Mordaunt-Short MS207	⏏	⏏	⏏	400
Mordaunt-Short MS208	⏏	⏏	⏏	500
Mordaunt-Short MS817	⏏	⏏	⏏	500
Mus Tec Harner	⏏	⏏	⏏	400
Mus Tec PM15	⏏	⏏	⏏	475
NAD 804	⏏	⏏	⏏	400
Neat Critique	⏏	⏏	⏏	445
Opera Duetto	⏏	⏏	⏏	395
Opera Prima	⏏	⏏	⏏	495
Origin Live QL-1AS	⏏	⏏	⏏	399
Origin Live Monarch	⏏	⏏	⏏	399
Paradigm Studio/20	⏏	⏏	⏏	350
Paradigm Monitor 9	⏏	⏏	⏏	400
Pioneer S-LC2	⏏	⏏	⏏	450
Polk AB705	⏏	⏏	⏏	330
Polk RT8	⏏	⏏	⏏	400
Polk RT10	⏏	⏏	⏏	500
Polk AB805	⏏	⏏	⏏	500
Prof Monitor Co TB15	⏏	⏏	⏏	470
Promenade SP2	⏏	⏏	⏏	399
Promenade SP3	⏏	⏏	⏏	499
Rega Alya	⏏	⏏	⏏	350
Rega Jura	⏏	⏏	⏏	450
Rega ELA	⏏	⏏	⏏	498
Royd The Squire	⏏	⏏	⏏	350
Royd Minstrel SE	⏏	⏏	⏏	399
Royd Doublet	⏏	⏏	⏏	485
Ruark Icon	⏏	⏏	⏏	399
Sequence 400	⏏	⏏	⏏	329
Sony SS-X7	⏏	⏏	⏏	400
S Coast Odette	⏏	⏏	⏏	325
Spendor S3/5	⏏	⏏	⏏	499
System 1130	⏏	⏏	⏏	500
Tannoy Revolution R2	⏏	⏏	⏏	350
TDL G20	⏏	⏏	⏏	380
TDL Chiltern CF100	⏏	⏏	⏏	480
TDL G30	⏏	⏏	⏏	500
Technics SB-M300	⏏	⏏	⏏	350
Technics SB-M500	⏏	⏏	⏏	450
TLC Altus 300	⏏	⏏	⏏	366
Triangle Cometes	⏏	⏏	⏏	359
Wdale Modus Music Six	⏏	⏏	⏏	330
Wdale Modus Music Eight	⏏	⏏	⏏	430
Wdale Modus Music 1/6	⏏	⏏	⏏	500
Yamaha NS-300	⏏	⏏	⏏	400

<b>£501 TO £800</b>				
Acoustic Energy AE505	⏏	⏏	⏏	700
Acoustic Precision Eikos FR1	⏏	⏏	⏏	800
Aliante Stile	⏏	⏏	⏏	580
Aliante Voce	⏏	⏏	⏏	600
Allison Model 3A	⏏	⏏	⏏	525
Arcadyis AK3	⏏	⏏	⏏	599
Arcadyis AS2	⏏	⏏	⏏	699
Arcadyis AK4	⏏	⏏	⏏	699
Audio Gem Emerald	⏏	⏏	⏏	540
Audio Note AN-K/D	⏏	⏏	⏏	620
Audio Note AN-J/B	⏏	⏏	⏏	799
Audiovector M1	⏏	⏏	⏏	759
Audiovector C2	⏏	⏏	⏏	799
AVI Biggatron	⏏	⏏	⏏	599
B&O Beolab 2500	⏏	⏏	⏏	750
B&W 603 S2	⏏	⏏	⏏	550
B&W CDM1 SE	⏏	⏏	⏏	600
Bose 501	⏏	⏏	⏏	600
Bose A'mass AM3	⏏	⏏	⏏	650
Boston VR30	⏏	⏏	⏏	600
Castle Severn 25E	⏏	⏏	⏏	699
Celestion A Compact	⏏	⏏	⏏	599
Celestion 45i	⏏	⏏	⏏	599
Celestion C2	⏏	⏏	⏏	699
Cerwin-Vega VS-12	⏏	⏏	⏏	550
Cerwin-Vega VS-15	⏏	⏏	⏏	700
Chario Constellation Lynx	⏏	⏏	⏏	549
Chario Ref 100T	⏏	⏏	⏏	599
Chario Hiper 1000T	⏏	⏏	⏏	699
Cura CA-10	⏏	⏏	⏏	699
Dali 107</				

Chario Academy 1	1,299		Acoustic Energy AE2 Sig	2,995		TDL Studio Monitor-m	2,750		M-A Studio 50	3,300	
Cura CA-20	1,199		Aliante Zeta	1,850		Totem Tabu	2,299		M-A Studio 60	5,000	
Dali 850	1,100		Aliante Linea	2,060		Totem The Forest	2,675		Naim DBL Active	8,050	
Def Tech BP8B	1,000		Aliante One	2,700		Veritas 25	1,750		Neolith NEO 2	3,499	
Def Tech BP10B	1,500		Alon I Mk II	1,795		Veritas H1	2,995		Neolith NEO 3	4,999	
Diapason Prelude II	875		Alon II Mk II	2,495		Wilson Benesch Orator	2,900		ProAc Response 3.8	3,990	
Diapason Karis	1,275		ALR/Jordan Note 7	2,500		Zingali Overture 2S	1,975		ProAc Future 1	5,875	
Dynaudio Contour 1.1	879		Apertura Agora Signature	2,295		<b>OVER £3000</b>			ProAc Response 5	9,000	
Dynaudio Audience 70	1,100		Apertura Tanagra	2,395		Acoustic Energy AES	7,995		ProAc Future 2	10,575	
Dynaudio Contour 1.3	1,198		Apertura Tanagra Sig.	2,795		Alon Lotus SE	3,500		ProAc Response 4	12,000	
Dynaudio Audience 80	1,460		ATC SCM20SL	1,750		Alon V Mk II	5,495		Prof Monitor Co MB1P	5,135	
Electrocompaniet EC-M1	995		ATC SCM20 Tower SL	2,400		Alon Adriana	8,500		Prof Monitor Co BB5-P	8,841	
Electrocompaniet EC-Qube	1,195		Audio Note AN-E/D	1,520		Alon Circe	12,000		Prof Monitor Co MB1-A	14,805	
Electrocompaniet EC-Qube SE	1,495		Audio Note AN-E/SPx	2,250		Alon Phalanx	19,000		Prof Monitor Co BB5 A	19,799	
Epos ES15	890		Audio Physic Spark 2	1,749		Apertura Athena	6,995		Prof Monitor Co MB1/XBD-A	22,266	
Epos ES22	1,185		Audio Physic Tempo	1,999		Apertura Atlante	8,995		Prof Monitor Co BB5/XBD-A	32,606	
Harbeth HL-K6	1,049		Audio Wk'p Cyclone 34	2,000		ATC SCM20A PRO	3,049		Rehdeko RK125	3,200	
Harbeth HL-Compact 7	1,499		Audiostatic DCI	2,495		ATC SCM20TASL	3,995		Rehdeko RK145	4,800	
Harbeth BBC LS5/12A	1,499		Audiovector M3	1,899		ATC SCM50P5SL	4,250		Rehdeko RK175	8,800	
Impulse Kora	1,250		B&O Beolab 6000	1,550		ATC SCM100P5SL	4,950		Revel Gem	5,295	
Infinity Overture 1	900		B&O Beolab 8000	2,100		ATC SCM50ASL	5,775		Rockport Merak	13,995	
Infinity Kappa 80	995		B&O Beolab Penta 3	2,650		ATC SCM100ASL	6,475		Rockport Spyzyg	15,000	
Infinity Kappa 90	1,295		B&W Nautilus 804	2,500		ATC SCM70P5SL	8,000		Rockport Procyon	32,500	
Infinity Overture 2	1,500		Bandor Bandora/Mora	2,350		ATC SCM70ASL	10,000		Ruark Solstice	4,000	
Jadis Orchestra	999		Bandor Siren	2,800		ATC SCM200ASL	15,595		Ruark Excalbur	7,000	
Jamo Concert 8	1,365		BKS Audio Hybrid 128	2,549		ATC SCM300ASL	17,731		Shahinian Hawk	5,495	
JBL SVA 1600	850		Bose 901 VI	1,650		Audio Note AN-JSE Silver	7,900		Shahinian Diapason	9,495	
JBL 4312 MKII-WX	1,000		Boston Lynfield 300L	2,000		Audio Note AN-ESE Silver	9,600		Shinpy Enigma	3,995	
JBL SVA 1800	1,000		Castle Inversion 100	1,975		Audio Physic Virgo 2	3,399		Shinpy Euphonia	5,995	
JBL SVA 2100	1,250		Celestion A3	2,399		Audio Physic Avanti 2	6,699		Shinpy Magnifica Suprema	14,500	
JM Lab Cobalt 815	999		Celestion Kingston	2,500		Audio Physic Caldera	10,599		Shun Mook Bela Voce	6,000	
JM Lab Electra 905	1,199		Chario Academy 2	1,649		Audio Physic Medea	24,999		Snell XA-75ps	4,500	
JM Lab Cobalt 820	1,199		Chario Academy Mill'm 2	2,100		Audiostatic DCI Plus	3,750		Sonus Faber Guarneri Homage	5,795	
Jordan Watts JH1+1	1,150		Credo SPB 003	1,820		Audiovector 5X	3,999		Sonus Faber Amati Homage	11,450	
KEF Q75	999		Credo SPB 009	2,453		Audiovector 6X	5,699		Sony SS-M9ED	10,000	
KEF Ref. Model One	1,199		Cura CA-30	1,799		Avalon Avatar	5,995		Sound-Lab Dynastat	3,790	
KEF RDM Three	1,500		Dali Grand Coupe	2,500		Avalon Arcus	6,995		Sound-Lab Aura	6,490	
Kelly KT3	1,200		Def Tech BP2002	2,400		Avalon Eclipse Classic	8,995		Sound-Lab Pristine III+	7,990	
Linn Tukan Aktiv	1,050		Diapason Adamantes III	1,995		Avalon Radian HC	13,995		Sound-Lab A-3	11,990	
Linn Kelidh Aktiv	1,250		Dynaudio Contour 1.8	1,894		Avalon Eidolon	20,495		Sound-Lab Ultimate II	13,950	
L Voice Auditorium	1,500		Dynaudio Crafft	2,598		Avalon Sentinel	79,995		Sound-Lab Ultimate I	18,950	
Lowther Accolade 2	1,199		Dynaudio Contour 3.0	2,930		Avantgarde Uno	5,300		Sound-Lab Ultimate 1	23,950	
Lumley L/M3.5	1,050		ECA Servo A.2	2,450		Avantgarde Duo	7,500		S Coast King Arthur	3,095	
Magnat Vintage 720	1,199		ELS Res'ch Vision	2,800		Avantgarde Trio Compact	16,500		S Coast Excalbur Ref.	12,400	
Magneplanar SMC-C SE	990		Epos ES30	2,385		Avantgarde Trio Classic	19,708		Spendor FL10	3,475	
Magneplanar MG-0,6 SE	1,370		Eurostatic Model 1	2,250		AVI Gravitron	4,250		T+A A4D	3,850	
Meridian Argent 1	995		Gamma Epoch Ref Five	2,999		B&W Nautilus 803	4,500		T+A A3D	4,550	
M&K S-125	1,150		Harbeth HL-S8	1,999		B&W Silver Signature	6,000		T+A A2D	8,400	
Mission 705a	900		Helius Syrius II	2,395		B&W Nautilus 802	6,000		Tannoy Edinburgh TW	3,250	
Mission 754f	1,298		Helius Syrius I	2,850		B&W Nautilus 801	8,500		Tannoy Definition D900	3,999	
M-A Studio 6	900		Heybrook Octet	1,799		B&W Nautilus 800	35,000		Tannoy GRF Memory TW	4,000	
M-A Silver 9	1,000		Hi Q Sound SM108	2,000		Bandor Bandoline	3,290		Tannoy Westminster TW	6,600	
M-A 705PMC	1,150		Impulse Lali	1,850		Beauhorn Virtuoso Bronze	3,325		Tannoy Canterbury 15 TW	7,720	
Mus Tec Condor	1,000		Infinity Overture 3	1,750		Beauhorn Virtuoso Gold	3,395		Tannoy Westminster Royal	14,920	
Mus Tec Hawk	1,250		Infinity Kappa 100	1,895		Beauhorn Virtuoso Reference	3,799		TDL Ref Standard-m	6,000	
Mus Tec Eagle	1,500		Inner Sound Isis	2,375		Beauhorn Accelerando	6,600		Titan Goliath T/4	4,112	
Naim Credo	1,090		Jamo Concert 11	2,250		BKS Audio Hybrid 175	3,995		Totem Mani-2	3,100	
Neat Elite	1,195		JM Lab Electra 915	1,899		Boston Lynfield 500L	4,449		Totem Shaman	9,999	
Opera Terza	995		JM Lab Electra 920	2,399		Carfrae Little Big Horn	6,795		Veritas 45	3,750	
Opera Callas Gold	1,095		Jordan Watts JH2K	2,400		Carfrae Carfraehorn	18,000		Veritas H2	4,495	
Opera Divina II	1,495		KEF Ref. Model Two	1,599		Chario Academy 5j	5,999		Veritas H3	5,995	
Orelle Swing	1,200		KEF Ref. Model Three	1,999		Credo SPB 012	3,147		Wilson Audio Cub	5,495	
Origin Live Sovereign	1,130		Linn Kaber Passiv	2,000		Credo SDL 001	5,677		Wilson Audio WATT 5	8,390	
Paradigm Studio/100	950		Linn Kaber Aktiv	2,640		Dali Grand	4,000		Wilson Audio WITT II	10,995	
Polk LS70	1,200		L Voice Aud'm Avatar	2,100		Def Tech BP2000	3,600		Wilson Audio Maxx	34,995	
Polk RT20p	1,500		Lowther Fidelio	1,999		Diapason Adamantes Ltd	3,995		Wilson Benesch Actor	3,900	
ProAc Tablette 2000 Sig	899		Lowther Academy	2,399		Dynaudio Contour 3.3	4,815		Wilson benesch ACT1 spkr	6,900	
ProAc Studio 125	999		Lowther Bel Canto	2,699		Dynaudio Confidence 3	4,846		Wilson benesch Act 2	8,900	
ProAc Response 1 SC	1,199		Lumley L/M2 Mk3	2,995		Dynaudio Confidence 5	5,924		Wilson benesch The Bishop	20,000	
Prof Monitor Co LB1	999		Magnat Vintage 760	1,999		Dynaudio Consequence	14,566				
Rega XEL	1,040		Magneplanar MG-10 SE	1,650		Dynaudio Evidence	50,909				
RMS Revelation S 1	1,299		Magneplanar MG-1,5 SE	1,780		Eggleston Rosa	8,500				
Roksan Ojan 3X	995		Magneplanar MG-2,7 SE	2,650		Electrofluidics Sonolith 2.2xi	5,999				
Royd The Albion	985		Martin-Logan Aeries i	2,199		ELS Res'ch Vista	3,900				
Ruark Solus	1,200		Meridian M60	2,150		ELS Res'ch Illusion MkII	9,000				
Shahinian Super Elf	875		M-A Studio 20SE	2,500		Eurostatic Model 2	3,650				
Shahinian Starter	1,195		Naim SBL Active	1,885		Impulse Ta'us	3,100				
Shahinian Compass	1,495		Naim SBL Passiv	2,030		Inner Sound Eros	3,995				
Shinpy Micraphonica	1,099		Neolith NEO 1	2,999		Jadis 2	5,900				
Silverado Ryder	1,395		Opera Caruso I	2,495		Jadis 1	18,900				
Soliloquy SM 2A3	1,095		Origin Live Conqueror	1,750		Jamo Oriel	9,000				
Sonus Faber Concerto	945		Polk LS90	1,700		JM Lab Mini Utopia	4,500				
Sonus Faber Concerto CP	999		Posselt Albatross	2,500		JM Lab Mezzo Utopia	7,300				
Sonus Faber Signum	1,200		ProAc Response 1.5	1,790		JM Lab Utopia	18,300				
S Coast Merlin Monitor	849		ProAc Response 2.5	2,700		JM Lab Grande Utopia	35,000				
S Coast Classic	1,495		Prof Monitor Co AB1	1,758		Jordan Watts JH10K	7,750				
Spendor SP3/1P	825		Prof Monitor Co IB1S	2,697		KEF Ref. Model Four	3,299				
Spendor FL6	1,099		Rehdeko RK115	1,700		Kochel K-300S	10,000				
Spendor SP2/3	1,187		Ruark Crusader II	1,649		Linn Keltik Aktiv	6,000				
Spendor FL8	1,355		Ruark Equinox	2,000		L Voice Avatar OBX	4,000				
T+A TAS 1200E	1,050		Shahinian Arc	1,995		L Voice Air Scout	19,500				
T+A TB 120	1,060		Shahinian Obelisk	2,850		L Voice Air Partner S	37,200				
Tannoy Definition D300	999		Shinpy Euritmica	1,995		Lowther Delphic	3,999				
TDL Chevot CF300	850		Shinpy Altair	2,895		Lowther Opus One	4,999				
Technics SB-M1000	1,500		Silverado Silverado 1	1,995		Lumley L/M 2 Sig. Mk3	4,500				
Titan Enigma T/3	825		Soliloquy 5.3	1,750		Magnat Vintage 770	3,500				
Titan Sovereign T/4	1,175		Sonus Faber Electa Amator 2	2,849		Magneplanar MG-3.5SE	3,800				
Totem The Arro	959		Sound-Lab Quantum	2,150		Magneplanar MG-20 SE P	10,300				
Totem The Stauf	1,249		S Coast Excalbur	2,750		Magneplanar MG-20 SE A	11,000				
Totem Model One	1,249		Spendor SP1/2	1,674		Martin-Logan SL3	3,399				
Veritas 7	1,000		Spendor SP100	2,234		Martin-Logan CLS II	4,555				
Veritas 15	1,300		T+A TB 140	1,760		Martin-Logan Re-Quest Z	5,875				
Veritas 20	1,400		Tannoy Definition D500	1,999		Meridian DSP5000	3,295				
			Tannoy Stirling TW	2,200		Meridian DSP6000	9,400				
			Tannoy Definition D700	2,500							



## SUBWOOFERS

### KEY

Ⓜ - Active; includes a dedicated power amplifier.

THX - THX-approved by LucasFilm for use in Home THX installations.

Acoustic Energy AE108S	Ⓜ	300
Allison Mini Ref Sub		210
Alon Poseidon	Ⓜ	12,810
ATC SCM 0.1/1.5	Ⓜ	3,800
Audio Physic Terra	Ⓜ	3,499
B&W ASW1000	Ⓜ	500
B&W ASW2000	Ⓜ	800
B&W ASW3000	Ⓜ	1,000
Boston CR400	Ⓜ	300
Boston VR500	Ⓜ	450
Boston VR2000	Ⓜ	800
Celestion CS135	Ⓜ THX	139

### £1,501 TO £3,000

Acoustic Energy AE1 Sig	1,995	
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Let our experts help with your hi-fi problems. Send your query to 'Help' at the usual address.

Celestion CSW MkII	Ⓐ	329
Celestion S11	Ⓐ	349
Celestion A6s	Ⓐ	800
Cerwin-Vega HT-10D	Ⓐ	200
Cerwin-Vega HT-12D	Ⓐ	250
Chario Syntar Bass	Ⓐ	299
Chario Hipar Bass	Ⓐ	499
Credo SDC 001	Ⓐ	3,054
GLL Le Bass	Ⓐ	350
Jamo SW303E	Ⓐ	200
Jamo SW400E	Ⓐ	250
Jamo SW410e	Ⓐ	300
Jamo SW505E	Ⓐ	300
Jamo Sub One	Ⓐ	400
JBL Control Sub 6	Ⓐ	200
JBL Control Sub 10	Ⓐ	300
JM Lab Tantal SW20	Ⓐ	349
JM Lab Cobalt SW27A	Ⓐ	599
JM Lab Electra SW35A	Ⓐ	899
JM Lab Sub Utopia	Ⓐ	2,200
JPW Subwoofer	Ⓐ	130
JPW SW40	Ⓐ	240
JPW SW60	Ⓐ	350
JPW SW-120	Ⓐ	500
KEF Model 20B	Ⓐ	349
KEF Model 30B	Ⓐ	499
KEF Model AV1	Ⓐ	2,499
Kenwood SW500	Ⓐ	250
Kenwood SW501	Ⓐ	349
Linn AV5150	Ⓐ	2,850
L Voice RW24	Ⓐ	11,500
Magnat Vector Sub 30P	Ⓐ	149
Magnat Vector Sub 30A	Ⓐ	299
Magnat Omega 300	Ⓐ	429
Meridian M2500	Ⓐ	1,595
M&K VX-7MKII	Ⓐ	450
M&K V-75 MKII	Ⓐ	650
M&K VX-100	Ⓐ	750
M&K V-125	Ⓐ	800
M&K V-125 (THX)	Ⓐ	800
M&K MX-70	Ⓐ	900
M&K MX-150 (THX)	Ⓐ	1,500
M&K MX-700	Ⓐ	1,595
M&K MX-200	Ⓐ	1,800
M&K MX-350THX	Ⓐ	1,995
M&K MX-5000 (THX)	Ⓐ	2,900
Mission 75as	Ⓐ	548
M-A ASW110	Ⓐ	700
M-A ASW210	Ⓐ	500
Mus Tec PMS 45	Ⓐ	500
Mus Tec Tercel	Ⓐ	700
Muse Model 22	Ⓐ	1,890
Muse Model 18	Ⓐ	3,790
Neat Gravitas	Ⓐ	1,095
Paradigm PDR10	Ⓐ	250
Paradigm Servo 15A	Ⓐ	800
Polk PSW50	Ⓐ	350
Polk PSW150	Ⓐ	500
Polk PSW300	Ⓐ	750
REL Q50	Ⓐ	375
REL Q-100E	Ⓐ	495
REL Strata III	Ⓐ	600
REL Q-200E	Ⓐ	600
REL Storm III	Ⓐ	800
REL Stadium II	Ⓐ	995
REL Stentor II	Ⓐ	1,800
REL Studio II	Ⓐ	4,000
Revel Sub-15	Ⓐ	2,195
Roksan Ojan 3S	Ⓐ	795
Ruark Log-Rhythm	Ⓐ	750
Sequence FW120	Ⓐ	249
Soliloquy S10	Ⓐ	1,050
Sony SA-W305	Ⓐ	130
Sunfire Sub Junior	Ⓐ	1,099
Sunfire True Sub	Ⓐ	1,499
Sunfire Trus Sub Sig.	Ⓐ	1,699
Tannoy mSUB 10	Ⓐ	250
TDL Nucleus SBR	Ⓐ	200
Tsunami TS300	Ⓐ	300
Tsunami TS200	Ⓐ	300
Tsunami TS210	Ⓐ	399
Wdale Modus Sub Bass	Ⓐ	180
Wilson Audio Puppy 5.1	Ⓐ	8,450
Wilson Audio Whow III	Ⓐ	10,999
Wilson Audio XS	Ⓐ	17,000
Yamaha YST-SW45	Ⓐ	140
Yamaha YST-SW90	Ⓐ	180
Yamaha YST-SW160	Ⓐ	280
Yamaha YST-SW300	Ⓐ	350

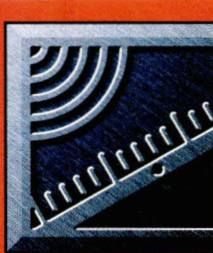


**TOEARMS**

**KEY**

⓪ - Pivoted.  
# - Parallel tracking.

Air Tangent IC	⓪	4,600
Air Tangent 10B	⓪	8,600
Air Tangent Reference	⓪	14,000
Audio Note AN-ARM 1	⓪	169
Audio Note AN-0s	⓪	795
Audio Note AN-1s	⓪	995
Audiomeca SL5	⓪	2,500
Clearaudio Souther TQ-1	⓪	1,670
Clearaudio Master TQ-1	⓪	3,620
Dynavector 507	⓪	1,995
Graham Mk 2.0 Basic	⓪	1,810
Graham Mk 2.0 Deluxe	⓪	2,650
Helius Orion 4 Copper	⓪	549
Helius Cyalene 2	⓪	1,495
Kuzma Stogi S	⓪	399
Kuzma Stogi	⓪	750
Kuzma Stogi Ref	⓪	1,250
Linn Akito	⓪	500
Linn Ekos	⓪	1,500
Moth Mk 1	⓪	109
Moth MkIII Stainless	⓪	146
Moth Mk III Tungsten	⓪	174
Moth Moth 900	⓪	598
Naim ARO	⓪	1,070
N'ham Interspace Arm	⓪	370
N'ham Space	⓪	450
N'ham Mentor	⓪	800
N'ham Foot	⓪	1,100
N'ham Anna Log Arm	⓪	1,500
Pro-Ject 9	⓪	350
Rega RB250	⓪	109
Rega RB300	⓪	174
Rega RB900	⓪	598
Rockport Series 7000	⓪	6,000
Roksan Tabriz	⓪	350
Roksan Tabriz Zi	⓪	450
Roksan Artemiz	⓪	895
SME 3009 Ser II Imp	⓪	309
SME 3009 S2 Ser II Imp	⓪	338
SME Series II 3009-R	⓪	514
SME Series II 3010-R	⓪	526
SME Series II 3012-R	⓪	565
SME 309	⓪	689
SME 310	⓪	705
SME 312	⓪	802
SME Series IV	⓪	983
SME Series V	⓪	1,461
Triplanar V1A	⓪	3,500
Triplanar V1B	⓪	3,750
Wilson benches Act 0.5	⓪	795
Wilson benches ACT2	⓪	1,350
Zeta AS	⓪	469
Zeta VDH	⓪	549



**TUNERS**

**KEY**

'P20' (etc.) - Number of presets.  
RDS - Radio Data System; receives text information on station, programme type etc.

Arcam Alpha 7	P24	230
Arcam Alpha 8	P24	280
Arcam Alpha 10 DRT	P07	800
Ariston TX-510	P20	50
AVI S2000MT	P16	599
AVI S2000MT2	P99	899
Cambridge T500	P64	180
Creek T43	P64	399
Cymbal Digital Radio	P08	899

Cyrus FM7.5	P29	398
Davidson-Roth FM Ref Classic		5,590
Denon TU-260L MKII	P40	RDS 130
Denon TU-215RD	P40	RDS 150
Denon TU-425RD	P40	RDS 200
Denon TU-1500RD	P40	RDS 250
Fanfare FT1	P08	1,395
H/YK TU930	P30	150
H/YK TU950	P50	RDS 200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P30	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dynalab FT11		499
Magnum Dynalab FT-101A		795
Magnum Dynalab Etude		1,250
Magnum Dynalab MD108		4,990
Marantz ST-48	P60	RDS 120
Marantz ST-17	P60	RDS 600
McIntosh MR7084	P50	2,499
McIntosh MX1 1B	P50	4,999
McIntosh MX130	P50	6,999
Meridian 504	P30	695
Myryad T-30	P20	300
Myryad T-100	P29	400
NAD 412	P39	600
NAD C440	P24	190
NAD C440	P30	RDS 200
NAD 414RDS	P30	RDS 250
NAD 710	P24	270
NAD 712	P24	330
Naim NAT03	P24	615
Naim NAT02		1,130
Naim NAT01		1,780
Onkyo T 421ORDS	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 99	P25	700
Quad 77FM	P25	RDS 700
Rega Radio	P24	298
Roksan Kandy	P50	RDS 375
Roksan Caspian	P50	695
Rotel RT-935AX	P20	160
Rotel RT940AX	P20	200
Sony ST-SE200	P30	100
Sony ST-SE300	P30	RDS 110
Sony ST-SE500	P30	RDS 140
Sony ST-SB920	P30	RDS 180
Sony ST-SA3ES	P30	RDS 250
Sony ST-S3000	P30	RDS 250
T+A T1200R	P60	RDS 790
TAG McLaren T20	P39	1,099
Teac T-R400	P40	100
Teac T-R460	P40	RDS 120
Teac T-H500	P30	RDS 170
Technics ST-GT350L	P30	130
Technics ST-GT550L	P39	RDS 180
Technics ST-GT650L	P39	RDS 230
Thorens TRT-2000	P59	RDS 499
Thule Spirit TU100	P40	RDS 499
Yamaha TX-480L	P40	100
Yamaha TX-492RDS	P40	RDS 130
Yamaha TX-59 2RDS	P40	RDS 180
Yamaha RX-396RDS	P40	RDS 250
YBA Complete	P14	490



**TURNTABLES**

**KEY**

⓪ - Arm included.  
# - Cartridge included.

**UP TO £500**

Audio Note AN-TT 1	⓪	349
Dual CS435-1	⓪	140
Dual 505-4 UK	⓪	220
Dual CS-750-1	⓪	330
Genexa Lab-710	⓪	60
Genexa Lab-810	⓪	70
Kenwood KD-492F	⓪	100
Michell Myro	⓪	455
Moth Alamo	⓪	199
Moth Kanoot Mkl Arm	⓪	279
Moth Kanoot Mk3 Arm	⓪	329
NAD 533	⓪	220
N'ham Interspace	⓪	500
Pioneer PL-12500-C	⓪	80
Pioneer PL-990	⓪	130
Pro-Ject 0.5/OM10	⓪	170

Pro-Ject 1/510	⓪	200
Pro-Ject 2/510	⓪	250
Pro-Ject Classic/510	⓪	360
Pro-Ject 6/510	⓪	400
Pro-Ject 6.9	⓪	500
Rega Planar 78	⓪	214
Rega Planar 2	⓪	214
Rega Planar 3	⓪	274
Roksan Radius	⓪	470
Sherwood PM8550	⓪	160
Sony PS-LX150H	⓪	90
Sony PS-LX300H	⓪	150
Technics SL-J110D	⓪	120
Technics SL-BD20	⓪	160
Technics SL-BD22	⓪	180
Technics SL-1210MKII	⓪	400
Technics SL-1200MKII	⓪	400
Thorens TD-180 AT91	⓪	210
Thorens TD-280 IU/UK	⓪	230
Thorens TD166 VI AT95E	⓪	370
Thorens TD-166 WUK/RB	⓪	400

**OVER £500**

Audio Note AN-TT 2	⓪	995
Audio Note AN-TT 3	⓪	1,995
Audiomeca Romance	⓪	1,895
Audiomeca J1	⓪	3,500
Avid Volvere	⓪	1,399
Avid Acutus	⓪	3,995
Basis 2000	⓪	1,995
Basis 2001	⓪	2,995
Basis Ovation II	⓪	5,400
Basis 2500	⓪	5,495
Basis 2800	⓪	7,495
Basis Debut Gold Std III	⓪	8,200
Basis Debut Gold Vacuum	⓪	10,300
Chantry QT Level 2	⓪	705
Clearaudio Solution	⓪	925
Clearaudio Evolution	⓪	1,095
Clearaudio Revolution	⓪	2,500
Clearaudio Reference	⓪	3,855
Clearaudio Master Ref.	⓪	8,510
DNM-Reson Rota 1	⓪	3,900
DNM-Reson Rota 2	⓪	5,600
Garrard 501	⓪	5,278
Impulse Moskito	⓪	695
Kuzma Stabi S	⓪	695
Kuzma Stabi	⓪	1,950
Kuzma Stabi Reference	⓪	3,750
Linn LP12 Basic	⓪	1,100
Linn LP12 Lingo	⓪	1,750
Michell Gyro Spider Ed'n	⓪	775
Michell Gyrodek	⓪	875
Michell Orbe SE	⓪	1,725
Michell Orbe	⓪	1,995
N'ham Spacedeck	⓪	750
N'ham HyperSpacedeck	⓪	1,500
N'ham Mentor	⓪	2,600
N'ham Anna Log	⓪	5,500
Oracle Delphi	⓪	3,370
Oracle Delphi 15th Anniv	⓪	3,800
Pink Triangle Tarantella II	⓪	850
Pro-Ject Perspective	⓪	750
Rega P25	⓪	598
Rega Planar 9	⓪	1,598
Reson RS1M	⓪	695
Reson Rota 1	⓪	3,900
Rockport Capella II	⓪	7,500
Rockport Sirius III	⓪	90,000
Roksan Xenex 10	⓪	1,295
Roksan TMS	⓪	2,750
SME Model 10A	⓪	3,333
SME Model 20/2	⓪	3,403
SME Model 20/2A	⓪	4,863
SME Model 30/2	⓪	10,675
SME Model 30/2A	⓪	12,135
SOTA Comet	⓪	995
SOTA Millenia	⓪	5,795
Stratosphere ST1	⓪	6,500
Technics SL-1200LTD	⓪	700
Thorens TD-146 VI TP50	⓪	550
Thorens TD-2001 TP90	⓪	700
Thorens TD-520 SME	⓪	1,050
Verdier Nouvelle Platine	⓪	2,250
Verdier Platine Verdier	⓪	4,350
Well Tempered Record Player	⓪	1,995
Well Tempered Classic V	⓪	3,500
Well Tempered Reference	⓪	5,500
Wilson benches Circle	⓪	795
Wilson benches WB Turntable	⓪	1,775
Wilson benches Full Circle	⓪	1,995

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<b>BRADFORD</b> Cleartone Rawson Square, City Centre (Formerly Eric's) TEL: 01274 309266	<b>BOLTON</b> Cleartone Blackburn Road, City Centre (On the A666 Blackburn Road) TEL: 01204 531423	<b>BIRMINGHAM</b> Empire Superstore 21-22 Stephenson Street (Behind New St. Opp. Palisades Car Park) TEL: 0121 643 0972

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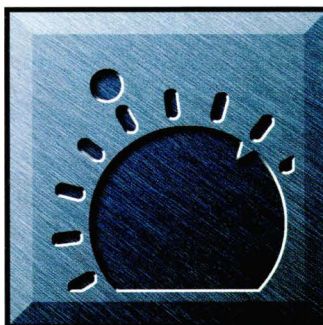
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# THE DIRECTORY

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## Amplifiers

The amplifier is at the heart of any hi-fi system, accepting the outputs from various music sources, increasing the amplitude of their signal and then driving the loudspeakers to produce sound. One-box 'integrated' amps rule the roost at low-to-middle price points, but if you pay more, the low-level and high-level signal processes are separated into preamp and power amp boxes, and even separate 'outboard' power supplies come into play. Another luxury is a separate amp for each stereo channel: such devices are known as monoblocks. Finally, output power and sound quality are not necessarily related. Some of the finest amplifiers outputs only 12 Watts, but will yield loudness aplenty when partnered with high-efficiency loudspeakers.

## KEY TO SPECIFICATIONS

**LINE INPUTS:** Number of input sockets for line-level (non-vinyl) sources such as CD players, tuners and cassette decks.  
**REMOTE CONTROL:** An infrared handset to adjust volume etc.  
**HEADPHONE SOCKET:** An integral output for headphones.  
**POWER OUTPUT (Watts):** Our measurement of an amp's RMS power output into 8 Ohms.  
**RECEIVER:** An amplifier with built-in radio receiver (tuner).  
**FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback advert on the penultimate page of the mag.  
**ISSUE NUMBER:** The issue of Hi-Fi Choice in which an original review appeared.

B BEST BUY

R RECOMMENDED

E EDITOR'S CHOICE

## Amplifiers

### SPECIFICATIONS

LINE INPUTS  
 MM PHONO INPUTS  
 MC PHONO INPUTS  
 REMOTE CONTROL  
 HEADPHONE SOCKET  
 POWER OUTPUT (W)  
 RECEIVER  
 FACTSBACK NO.  
 ISSUE NUMBER

STATUS

PRODUCT (E) COMMENTS

PRODUCT	(E)	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	RECEIVER	FACTSBACK NO.	ISSUE NUMBER
Alchemist Kraken APD6A	599	Compact, with Darth Vader styling, yet sound quality is meek and mild, despite strong midband dynamics	5	●	●	●	●	55	●	2150	175
R AMC 3025a	140	Surprisingly potent and easy on the ear, if not especially analytical – classic bargain-basement material, in fact	4	●	●	●	●	30	●	2045	171
R AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	45	●	1970	167
R Arcam Alpha One	230	Rather like an Alpha 7 but without the remote control and what appears to be better sound quality still	6	●	●	●	●	35	●	2470	186
R Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●	●	●	●	45	●	196	
R Arcam Alpha 8R	380	The Alpha 8R sets a high level of resolution and stability, and has some useful features for home cinema users	5	●	●	●	●	50	●	2634	192
R Arcam Alpha 9	500	Not quite a match for the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7	●	●	●	●	70	●	2007	168
R Arcam Alpha 10	800	Although not the best sounding in its class, the Alpha 10's modular nature demands it be taken seriously	5	●	●	●	●	100	●	2318	181
E ATC SIA2-150	1,984	An impressive sounding integrated amp with a dynamic, open and detailed sound	4	●	●	●	●	150	●	192	
Aria S2	1,000	Glamorously packaged valve amp produces a real eyes closed, feet up kind of sound	4	●	●	●	●	12	●	190	
R Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	●	●	●	●	40	●	2147	175
Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	●	●	●	●	40	●	2314	181
Audiogram MB1	493	The only flaws are the amateurish build, a number of technical problems and inconsistent sound quality	4	●	●	●	●	40	●	2235	178
R AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5	●	●	●	●	100	●	2155	175
R Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket articulate midband. Comes with 20 year guarantee	5	●	●	●	●	60	●	2156	175
R Cambridge Audio A500RC	200	Solid value, decent build and a surfeit of watts make this an attractive proposition, but it can sound slightly loose	6	●	●	●	●	50	●	2466	196
R Copland CSA8	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5	●	●	●	●	60	●	2010	168
R Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	●	●	●	●	60	●	2542	189
Copland CTA 402	1,698	A unusually flexible valve amp with an attractive and textured sound	5	●	●	●	●	35	●	193	
CR Developments CR324	569	Solid and capable on paper, this is a bit of a blunt instrument when let loose on the music	5	●	●	●	●	150	●	2315	181
Cymbal CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6	●	●	●	●	40	●	2236	178
Creek 4330	279	Diminutive but dassy amp will drive anything, and can be specified in various configurations	4	●	●	●	●	40	●	2630	192
R Cyrus SL	398	Articulate amplifier with build quality to die for, superb, outgoing midband and lean but well-extended bass	6	●	●	●	●	50	●	168	
R Cyrus Ilii	598	Beautifully presented, but mid-dominated balance was not liked. Upgradeable using PSX PSU unit	5	●	●	●	●	50	●	1854	162
R Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6	●	●	●	●	60	●	196	
R Denon PMA-250SE	140	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5	●	●	●	●	30	●	2046	171
R Denon PMA-350SE	180	Reinvented in the minimalist tradition, this SE model is a control freak, but can sound wonderful	5	●	●	●	●	50	●	1856	162
Denon PMA-535R	230	The kind of amp they made in the 70s, dressed to the nines, and nowhere to go	5	●	●	●	●	50	●	2627	192
Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●	●	●	97	●	1802	157
R Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●	●	●	70	●	2316	181
R Denon Beat B-100 MkII	650	High 'air guitar' factor, and can punch above its weight, but check it will complement your system	5	●	●	●	●	60	●	2151	175
Densen DM-10	1,375	Big, bold and expressive amplifier, but sometimes rough around the edges, and not as powerful as it appears	6	●	●	●	●	75	●	2546	189
Edmund Audio ES110	400	Honest but unexciting straight line amp from REL associate company	6	●	●	●	●	85	●	2635	192
Exposure XX Super	700	Rather transistorised, unexciting sound. Good coherence and rhythm. Best played loud	6	●	●	●	●	55	●	1743	154
Exposure RCXXV	1,000	Unaccountably rather underwhelming top of the line integrated sounds a little soft and detached	6	●	●	●	●	60	●	2543	189
R Electrocompaniet EC1-2	995	A 50 Watt amplifier which sounds more powerful, and makes 'real-sounding' music	4	●	●	●	●	50	●	2158	175
R Harman/Kardon HK630	200	Sharp, clean but sometimes slightly raw-sounding budget amp	4	●	●	●	●	40	●	2628	192
R Harman/Kardon HK690	530	Bold, dynamic amplifier with plenty of balls, but not the most sophisticated sound on earth	6	●	●	●	●	100	●	196	
Hofli Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	●	●	●	●	65	●	2319	181
JoLisa 202	695	Well-built and technically accomplished, affordable valve integrated with subtly refined, if not quite gripping sound	4	●	●	●	●	40	●	2011	168
JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5	●	●	●	●	45	●	1466	149
Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	●	●	●	●	70	●	2463	186
Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsuited performance	5	●	●	●	●	65	●	2053	171
Krell KAV-500I	5,000	More at home in background listening/home cinema applications than out-and-out audio maniac set-ups	5	●	●	●	●	250	●	192	
Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5	●	●	●	●	23	●	196	
R Magnum IA120	265	Mirror finish amplifier with bold, colourful delivery, but needs careful system matching to avoid loss of clarity	6	●	●	●	●	65	●	2054	171
R Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic; preserves colour and dynamics	6	●	●	●	●	96	●	1260	142
R Magnum IA200	599	Sweet, valve-flavoured solid state amplifier which flatters where it doesn't cast light	7	●	●	●	●	160	●	1860	162
Magnum Class A SE	795	A MOSFET amplifier drawing inspiration from the world of valves, this is an erratically refined, detailed amplifier	5	●	●	●	●	80	●	2159	175
Marantz PM-60 10SE	229	Good starter amplifier, with characteristic smooth, low key delivery	5	●	●	●	●	50	●	196	
R Marantz PM66 KI-Signature	400	It knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●	●	●	●	50	●	2003	168
Marantz PM-17	900	Probably worth it for the WBT terminals and other build features alone, but this model doesn't sing as it should	6	●	●	●	●	60	●	2323	181
Marantz PM-17 KI-Signature	1,300	Full feature audiophile amp where the end results don't quite justify the fantastic ingredients	6	●	●	●	●	60	●	2544	189
Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility	5	●	●	●	●	55	●	2237	178

**CONTINUED**

# Amplifiers

**STATUS**

**SPECIFICATIONS**  
 HEADPHONE CONTROL  
 REMOTE CONTROL  
 MM PHONO INPUTS  
 MC PHONO INPUTS  
 LINE INPUTS  
 POWER OUTPUT (W)  
 RECEIVER  
 FACTSBACK NO.  
 ISSUE NUMBER

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	LINE INPUTS	HEADPHONE CONTROL	REMOTE CONTROL	POWER OUTPUT (W)	RECEIVER	FACTSBACK NO.	ISSUE NUMBER
R Musical Fidelity E1	199	Richly flavoured tone and realistically-scaled imagery distinguish this entry-level Richer Sounds special	6						30	2050	171
Musical Fidelity E11	299	Well built minimalist amp with a five year guarantee, but can sound congested when extended	6						60	2232	178
B Musical Fidelity X-A1	479	Idiosyncratic visuals just another plus for an amp that is powerful, well built, and serves the music superbly	6						50	2317	181
Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some	5	●	●	●			85		196
R Musical Fidelity X-A100R	999	Sings like a thoroughbred, but better with Mozart than Mötörhead	6			●			75	2545	189
B Myriad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse	6	●		●	●		50	2636	192
R Myriad M1120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle	6			●			60	2152	175
B NAD 310	100	Fleet and sure of foot, it seems likely to set all appendages tapping with its blend of enthusiasm and artfulness	5						20	1468	149
B NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build	6			●	●		40	2467	186
R NAD C340	270	A classic NAD amplifier copes with any speaker, delivers plenty of power, and does so with calm decorum	6	●		●			50	2632	192
R NAD 317	470	Build quality aside, the current improved version is a real powerhouse, but smooth and detailed too	6			●	●		80		196
NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong	5				●		100		189
R Naim Nait 3	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes	5						30	1748	154
R Naim Nait 3R	780	Remote control variant of the basic Nait has a similarly dynamic credible sound but ultimately lacks power	5				●		30	2536	189
R Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of us worn down by the ongoing stress of life	5	●		●	●		50	1469	149
R Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build	5	●		●			45	2471	186
R Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	●		●	●		60	2633	192
B Pioneer A-300R Precision	400	Sophisticated variant of the A-300R. Not an obvious winner, but will slowly ply you with its subtle charms	5	●		●	●		35	1863	162
Pioneer A-07	999	Curious blend of high-end attributes and inconsistent, though undeniably detailed sound	5	●			●		80	2160	175
R Præcisa Acustica Sonoro	1,800	It is not often that transistor amplifiers are made to sound so palpably valve-like	5			●			100	2547	189
R Primare A-20 Mk II	799	Everything except packaging has changed in Mk II version: but balsier model has lost none of its refinement	5			●			70	2321	181
B Primare A30.1	1,499	Superb build and aesthetics, and undemonstrably musical down to its smallest screw	6			●	●		100	2548	189
R Rega Elex	398	Minimalist amplifier, derived from Elicit, is a little uninspiring, although at least it is well behaved	4	●					50	1865	162
Restek Fantasy II	1499	Muscular, but ultimately rather strident amplifier which needs careful system matching	6				●		100	2549	189
R Roksan Caspian	695	Well-built, open and articulate amplifier, which is also consistent from system to system	6				●		70	2014	168
Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	●	●				65	2009	168
Rotel RA-931	150	Rather dry and unforgiving sound from this internally well specified and attractively priced amplifier	4	●			●		35	2048	171
B Rotel RA-971 MkII	225	Improved AR971 is a chip off the old block: bags of power, but with added precision and clarity	6						60		196
Sharp SM-SX100	10,000	The world's first stable, 1-bit digital amplifier is a technological milestone that should go from strength to strength	n/a						110		200
R Sony TA-FB730R	200	Brilliantly sharp and realistic sound is offset by some obvious sonic flaws – and maxi feature set doesn't help	5	●		●	●		40		196
R Sony TA-F448BE	250	Minimalist interface is matched to carefully considered circuit with satisfactory effect – but keep the volume in check	5	●		●			55	2055	171
B Sony TA-F3000ES	500	Champagne 'shoebbox amp' may lack power reserves, but is quick and articulate. In every sense a knockout	5	●	●	●	●		35	2239	178
T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality	7				●		100	2550	189
Tact Millennium Mk II	7,000	This digital class D amplifier represents a bold declaration on the future expansion of digital audio in the home	n/a				●		150		194
TAG McLaren 60i	800	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement	6				●		60	2540	189
TAG McLaren 60iRv	999	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive	6				●		60		184
R Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6				●		50	1868	162
Talk Electronics Cyclone 1	550	Much improved build quality and silver finish, but the sound lacks physicality and can sound strained	6				●		65		196
R Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall	6				●		50	2154	175
Teac A-E2000	180	Has the potential to cause significant damage in the budget amp sector once the wrinkles are ironed out	6						50		195
Teac A-BX7R	700	Characterful balance mars a meticulously designed amplifier. Includes a balanced input, optional MM/MC stage	5				●		50	1869	162
Technics SU-A660 Mk 3	200	Plenty of wellie for the price, but the sound can be a tad coarse and lacking in fine detail	5	●					37		186
Technics SU-A700 Mk 3	250	Fully equipped, high-tech amplifier ultimately fails the authenticity test, and can sound messy and inarticulate	5	●					45	1870	162
Technics SU-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat	6	●			●		55		196
R Technics SU-A800D Mk 2	300	Two-box amplifier looks great, has plenty of gadgets, and makes good, if slightly overexuberant, music	5	●			●		55	2234	178
Technics SU-A900D Mk 2	400	Looks like a pre/power amplifier, but in effect it's an integrated, with a rather soft-centred sound to match	5	●			●		70	2149	175
R Token Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic	5						50	2472	186
Yamaha AX-392	170	Standard budget fare, and it's easy to pick holes, but in undemanding surroundings it works creditably	6	●			●		60	2629	192
R Yamaha AX-492	220	Powerful, well equipped amplifier at an attractive price, offers powerful and engaging music-making	5	●			●		85	2231	178
Yamaha AX-592	280	Fine, middle ranking amplifier, with a detailed midband but performance declines at frequency extremes	5	●	●	●	●		100	2056	171
<b>PREAMPLIFIERS</b>											
Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent	5						50		187
Alchemist Kraken APD7A MkII	549	Unusual looks and unusual sound too, rather rough and lacking detail	6								187
R Arcam Alpha 9C	400	Well specified and flexible preamp with sound only just lacking in greatness	6				●	●			187
Audio Note M Zero	299	Neat shoe box-size preamp. Able to impart music with real life and soul when partnered with P Zero power amps	5								191
R Copland CTA-301MkII	1,249	Sweet sounding, but never gets bogged down in audio treacle	4	●						1630	151
B Creek P43R	350	Excellent sound, remote control operation and upgrade options from this fine value preamp	6						●		187
R Crimson CS610	450	Good, clear sound, including a decent phono stage, but flexibility is limited	3	●	●						187
Cyrus aCA7	798	A decent enough unit at the price but not as good as the Cyrus aPA7 power amp it was tested with	5						●		190



## Audio Analogue Boffins do it again!

**When the boffins** at Audio Analogue came out with the Puccini and Puccini S.E., they grabbed 'Best Buy' status virtually everywhere. They set the standard by which other integrated amps were judged.

For build quality, sheer musicality and value for money.

**But those boffins** at Audio Analogue don't believe in resting on their laurels. So they've taken a fresh look at the Puccini and S.E., and made them into something really special.

First they gave them remote control. And not just any old remote control. They made theirs out of stainless steel, with the smartest little handset you've ever seen. For remote volume *and* input switching. So all you sofa loafers can sit back and relax.

**And those boffins** didn't stop there. They added bigger power supplies to give more punch to that lovely natural Puccini sound, fitted a pre-out facility to allow bi-amping, and gave them sophisticated protection circuits.

So now the Puccini and Puccini S.E. are right back up on top, where they belong. And those boffins at Audio Analogue can take a well-earned *cappuccino*.

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CONTINUED

# Amplifiers

## SPECIFICATIONS

MM PHONO INPUTS  
MC PHONO INPUTS  
REMOTE CONTROL  
HEADPHONE SOCKET  
POWER OUTPUT (W)  
RECEIVER FACTSBACK NO.  
ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS								
<b>Densen Beat B-200</b>	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	●	●					191
<b>ECA Vista</b>	760	Wind up the volume and blow a breath of fresh music into your system. (Tested with Lectern power amp)	5							1302 145
<b>Exposure XVII</b>	850	Superbly rhythmic; maybe a bit overpowering in the midband. (Tested in sessions with XVIII Super)	5	●	●					142
<b>Levinson 380</b>	3,995	True high end preamplifier combines precision and warmth with unusual configurability	6			●				195
<b>LFD Mistral Linestage</b>	449	Strong ergonomics, generally decent sound, but a little lacking in detail								1930 165
<b>Meridian 501</b>	695	Tight, positive sound, but dispassionate; intense at high levels. (Tested with 555 power amp)	5	●			●			1303 145
<b>Meridian 502</b>	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation	7			●				162
<b>Michell Orca</b>	1,650	Line-level design with a gorgeous remote and focused, spacious sound. (Tested with Alecto power amps)	6			●				187
<b>Moth 30 Active Line Stage</b>	349	Excellent sounding ultra simple miniature preamp	4							1931 165
<b>Muse Model Three</b>	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5			●				166
<b>Musical Fidelity X-PRE</b>	200	Cleverly configured preamp with many upgrade options, and open, lively and engaging sound	4							2152 175
<b>Musical Fidelity X-P100</b>	800	Excellent long-term listening prospects; detailed and a little fruitiness (tested with X-A200 power amp)	6	●		●				200
<b>NAD 114</b>	270	Beer-budget preamp which sounds focused, detailed and consistent	6	●	●		●			1932 165
<b>NAD Silverline S100</b>	600	Beautifully built kit that sounds as good as it looks (tested with S200 power amp)	7			●				200
<b>Naim NAC92R</b>	630	Upgradeable preamp uses proprietary socketry. (Tested with NAP90 power amp)	5							1936 165
<b>Naim NAC102</b>	1,000	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety	6			●				200
<b>NVA P50</b>	350	Passive preamp that's more likely than most to cause treble loss	4							187
<b>Rega Hal</b>	998	Passive line stages dedicated to Exon power amps	6	●	●	●				1942 165
<b>Rotel RC-971</b>	150	Low price is offset by rather coarse sound quality with certain types of music. (Tested with RB-971 power amp)	5				●			178
<b>Rotel RC-995</b>	525	Highly capable, though less astonishing value than matching RB-991 power amp (tested as pair)	6	●	●	●				200
<b>TAG McLaren PA20R</b>	1,500	Refinement of Audiolab original with clean, detailed sound but limited thrill power. (T/w 125M monoblocks)	6			●	●			184
<b>Talk Hurricane 2L</b>	649	Design of integrity which gets to the heart, if not the soul, of the music	6							1937 165
<b>Technics SU-C3000</b>	2,997	Price includes SE-A3000. Supremely clean and even sounding combo, though it could be more musically involving	5	●						188
<b>Technics SU-C1010</b>	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	●			●			200
<b>Thule Spirit PR100</b>	400	High-tech preamp slightly marred by tendency to veil the sound	5			●				187
<b>POWER AMPLIFIERS</b>										
<b>Aich. Kraken APD8A Mk II</b>	549	Unusual looks and unusual sound too, rather rough and lacking detail	1						55	187
<b>Arcam Alpha 9P</b>	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1						60	1929 165
<b>Arcam Alpha 10P</b>	600	Well made and flexible; upgradeable to 3 channels. Good sound lacking the last degree of detail	1						100	187
<b>Audio Note P Zero</b>	599	Neat shoe box size valve monoblocks, priced per pair. Impart music with life and soul. (Tested with P Zero preamp)	1						8	191
<b>Border Patrol 300B SE</b>	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1						8.5	186
<b>Cary CAD 2A3SE</b>	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1						5	196
<b>Copland CTA-505</b>	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1						67	1630 151
<b>Creek A52SE</b>	599	Well designed and built amplifier with plenty of power, detail and refinement	6						100	187
<b>Crimson CS630</b>	800	Space-saving slimline monoblocks with both grunt and finesse	1						100	187
<b>Crimson 620C</b>	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1						50	181
<b>Cyrus Power</b>	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1						50	183
<b>Cyrus aPA7</b>	1,896	Low feedback design that's a positive departure from the transistorised norm. (Tested with Cyrus aCA7 pre)	1						150	190
<b>Densen B-300</b>	800	Expensive but highly musical. Colourful and warm sound with strong timing and listener involvement	1						100	183
<b>ECA Lectern</b>	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1						50	1302 145
<b>Gamut D200</b>	2,995	Single MOSFET pair per side gives tremendous resolution and timing (balanced only). Formerly Sirius	1						200	183
<b>Levinson 334</b>	5,495	A mailed fist in a velvet glove; refined, authoritative and transparent	1						125	195
<b>LFD Mistral Power</b>	449	Infectious upper band vitality, but LF dynamics lacking – likewise 'grip' and transparency	1						60	1930 165
<b>Mana Stealth MA-1</b>	4,800	A monoblock with an uncanny ability to drag you into the music, and spend half the night sitting up listening	2						200	198
<b>Meridian 555</b>	750	By providing an open window on the music, this amp is wide open to RF and low level IM distortions	1						60	1303 145
<b>Michell Alecto Monoblocks</b>	1,950	Hefty beasts offering real power and striking imaging. Not the last word in timing. (Tested with Orca preamp)	1						100	187
<b>Moth 60 Watt Stereo</b>	599	Miniature power amp lacks control and finesse – not comfortable with difficult speaker loads	1						60	1931 165
<b>Moth 30 Series Monoblocks</b>	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1						100	155
<b>Musical Fidelity X-A50</b>	500	Cleverly configured and attractively packaged, open, lively and engaging sound. Reviewed with X-PRE	1						50	175
<b>Musical Fidelity X-A200</b>	1,000	Good long-term listening prospects; detailed and a little fruity (tested with X-P100 preamp)	1						200	200
<b>Musical Fidelity NuVista 300</b>	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfil the demands of the most dynamic material	1						350	199
<b>Myriad MA120</b>	450	Based on MI120 integrated – see latter for comments, but sounds significantly better when bi-amped with MI120	1						60	1935 165
<b>NAD 214</b>	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1						80	1932 165
<b>NAD Silverline S200</b>	1,400	Beautifully built kit that sounds as good as it looks with heaps of power (tested with S100 preamp)	1						200	200
<b>Naim NAP90</b>	450	Power amp from a Nait integrated with some improvements	1						30	1936 165
<b>Naim NAP180</b>	1,122	More of a 'character act' than a truly neutral reproduction system, majors on excitement at the expense of subtlety	1						60	200
<b>NVA A60</b>	560	Rather coarse and uninviting sound	1						60	187
<b>Technics SE-A1010</b>	350	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	1						●	90
<b>Technics SE-A3000</b>	2,997	Price includes SU-C3000. Supremely clean and even sounding combo, though it could be more musically involving	1						●	100
<b>Thule Spirit PA100</b>	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1						100	187
<b>Rega Exon</b>	1,196	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1						125	1942 165
<b>Roksan Caspian Power</b>	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1						70	183
<b>Rotel RB-971</b>	200	Somewhat better than the accompanying preamp – clean, mean and bridgeable. (Tested with RC-971)	1						70	178
<b>Rotel RB-991</b>	600	Top stuff and stunning value: rather outshone the matching RC-995 preamp (tested as pair)	1						200	200
<b>Rotel RB-980BX</b>	450	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound	1						120	155
<b>TAG McLaren 125M</b>	2,400	Refined Audiolab replacement monoblocks with clean sound but limited thrill power. (T/w PA20R preamp)	1						145	184
<b>Talk Tornado 2</b>	600	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1						65	1937 165
<b>PHONO STAGES</b>										
<b>Creek OBH-9</b>	160	A neat little unit with an essentially neutral and listenable character	0			●				189
<b>Cyrus aEQ7/PSX-R</b>	826	Very hi-tech product which tends too much towards smoothness except at dimaxes, which can be rough	0	●	●					189
<b>Densen DP-Drive/DP-02</b>	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality	0			●				189
<b>Electrocompaniet ECP-1</b>	495	An excellent phono amp that combines well-rounded balance with detail and low noise	0	●	●					189
<b>Michell Iso/Lithos</b>	599	With the Lithos power supply upgrade, the Iso is a very capable phono stage with just a hint of bass fullness	0	●	●					189
<b>Moth 30 Series Phono</b>	249	Fine sound all round, in any kind of music, from this bargain phono stage	0	●	●					189
<b>Musical Fidelity X-LP</b>	130	A little bass lightness does not seriously mar the performance of this fine value unit	0	●	●					189
<b>NAD PP-1</b>	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too	0	●	●					189
<b>QED Discsaver DS-1</b>	35	It's cheap, it's cheerful, it's OK – perfectly adequate for use with a phono-less integrated, though not very refined	0	●	●					189
<b>Roksan Artaxerxes X/DS1.5</b>	1,150	Delicate and well balanced, slightly congested at dimaxes. Power supply expensive, but runs two Roksan components	0	●	●					189
<b>TAG McLaren PPA20</b>	1,549	One of the best-equipped phono stages available. Resolution is excellent, but timing is marginally behind the best	0	●	●					187
<b>MULTI-CHANNEL AMPLIFIERS</b>										
<b>Arcam Alpha 10 DAVE/10P</b>	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5			●	●		110	198
<b>Denon AVR-3300</b>	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			●	●		75	198



CONTINUED

# Amplifiers

STATUS

SPECIFICATIONS

MM PHONO INPUTS  
MC PHONO INPUTS  
REMOTE CONTROL  
HEADPHONE SOCKET  
POWER OUTPUT (W)  
FACTSBACK RECEIVER  
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	FACTSBACK RECEIVER	ISSUE NUMBER
<b>B</b> Marantz SR5000	500	Something of a rough diamond, but a powerful and entertaining package	5				105		198
NAD T770	1,000	Lacks both transparency and subtlety while the omission of dts will be a drawback for some at this price	5				90		198
Nakamichi AV-10	1,000	A very powerful AV receiver that's easy to install and set-up with a civilised and subtle performance	4				140		198
Pioneer VSX-908RDS	1,000	A flexible heavyweight AV receiver whose sound is just a little too stodgy and lacking in crispness	4				80		198
<b>R</b> Roksan Caspian DSP	2,290	A potent combination offering the bare essentials of DD and dts decoding	4				130		198
<b>R</b> Rotel RSP-985/RPB-985 MkII	2,225	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3				130		198
Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5				110		198



# Cables

Cables are an integral part of a hi-fi system, required to connect source components to amplifiers, and the latter to speakers.

- Analogue Interconnects connect source components and amplifiers, and run between pre and power amps. They are priced for one-metre terminated pairs.
- Digital interconnects connect CD transports to DACs or digital recorders. They come in optical and electrical varieties, the former being made of plastic or glass. The prices shown are for a terminated linear metre.
- Speaker cables are used between the amplifier and speaker. Our prices are per unterminated metre. Termination (plugs and soldering) costs vary.

KEY TO SPECIFICATIONS

- SYMMETRICAL: A twisted pair of conductors.
- COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.
- STRANDED: Multiple strands with no intervening insulation.
- SOLID CORE: Single or multiple, individually insulated strands.
- COPPER: Material used for conductor.
- SILVER: Material used for conductor.
- DIG CABLE TYPE: O - optical digital; E - electrical digital for CD Players, DACS and digital recorders.
- FACTSBACK REFERENCE: The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback ad on the penultimate page of the mag.
- ISSUE NUMBER: The issue of *Hi-Fi Choice* in which an original review appeared.

**B** BEST BUY   **R** RECOMMENDED   **E** EDITOR'S CHOICE

STATUS

# Cables

SPECIFICATIONS

SYMMETRICAL  
COAXIAL  
STRANDED  
SOLID CORE  
COPPER  
SILVER  
DIG CABLE TYPE  
FACTSBACK NO.  
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	FACTSBACK NO.	ISSUE NUMBER
<b>ANALOGUE INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)</b>											
Acoustic Precision Eikos	89	Not entirely neutral; probably best suited to upbeat music. Very stiff construction									188
Audio Note AN-A	18	Not especially impressive: warm but well-rounded balance that restricts 'air' but is quite clear									108
Audio Note AN-C	35	Neutral but lacking in subtle texture and unable to distinguish fine detail									1687 131
<b>R</b> Audio Note AN-S	99	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass									1687 131
Audio Note AN-V	179	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable									1687 131
Audioquest Topaz X2	60	Well made but let down by a pervading sense of muddle and congestion in the sound									188
<b>R</b> Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail									200
<b>R</b> CableTalk Advanced 2	35	Slight roughness in loud music barely detracts from a well-balanced performance with good imaging									2166 176
<b>R</b> 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									2167 176
<b>R</b> Cambridge Audio Studio Ref	40	Dynamic cable with strong soundstaging and only a slight lack of detail									160
Cambridge Silver Spirit 60	100	Good bass but a lack of detail and differentiation of instruments									188
Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces									2167 176
Chord Chameleon 2	90	Deep bass is fine but despite that the sound can be a bit hard and lacking body and resonance									188
<b>R</b> Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare									160
<b>R</b> DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried									200
Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)									2168 176
Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness									2169 176
<b>R</b> Insert Audio Image 5.1	85	Very good detail and imaging; perhaps a touch bass-light									200
<b>B</b> 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									2169 176
<b>R</b> 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 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price									200
Ixos 101	100	A cable with personality: its veiled and shut in quality bring an earthiness to vocals and rhythm guitar alike									1693 131
<b>B</b> Kimber PBJ	68	Assured sound, solid and natural bass and clear treble – excellent performance all round									188



Tel: 0181 348 5676 (2.00-7.00 pm)  
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## Esoteric High Fidelity CABLES

Dealers in: Absolute, Audio Note, Audioquest, Deltec, Electrocompaniet, Harmonix, Kimber, Mandrake, MIT, Siltech, Symo, Transparent, Van den Hul, WBT and others.

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... for YOUR ears

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CONTINUED

# Cables

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG CABLE TYPE FACTSBACK NO. ISSUE NUMBER

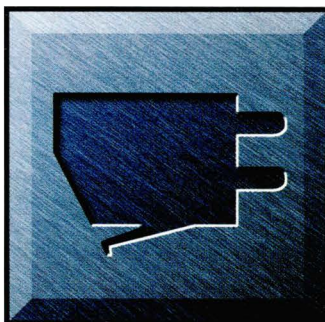
STATUS

PRODUCT	(£)	COMMENTS													
<b>R</b> Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	●	●	●								2170	176	
<b>R</b> Moth Ley Line Black	100	Offers a full sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●	●	●	●	●	●	●	●	●			108	
Moth Ley Line Grey	200	Detailed, but there's a sense of distance between music and listener: vocals 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	
<b>R</b> Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music	●	●	●	●	●	●	●	●	●			188	
<b>R</b> Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	●	●	●	●	●	●	●	●	●			176	
Precious Metals SS35	50	Extended bass, but dry character suits electronic music better than acoustic	●	●	●	●	●	●	●	●	●			188	
<b>R</b> Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness	●	●	●	●	●	●	●	●	●			2171	
<b>R</b> QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value	●	●	●	●	●	●	●	●	●			2172	
<b>R</b> QED Qnect 4S	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid	●	●	●	●	●	●	●	●	●			188	
<b>R</b> QED Qnex Silver Spiral	90	A great cable for lovers of big sounds	●	●	●	●	●	●	●	●	●			200	
Reference CS1	75	A moderate performer, with a little coloration and a tendency to lose bass at climaxes	●	●	●	●	●	●	●	●	●			188	
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight	●	●	●	●	●	●	●	●	●			160	
<b>R</b> SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. We're unsure about the flesh-coloured finish though...	●	●	●	●	●	●	●	●	●			160	
<b>R</b> SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	●	●	●	●	●	●	●	●	●			2172	
<b>R</b> SonicLink Lilac	65	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	●	●	●	●	●	●	●	●	●			188	
SonicLink Violet	85	Better bass than treble – a little dry in the upper octaves	●	●	●	●	●	●	●	●	●			200	
<b>R</b> Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss	●	●	●	●	●	●	●	●	●			2173	
<b>R</b> Straight Wire Sonata	80	Tonal balance favours lower frequencies but despite this it's a very listenable cable	●	●	●	●	●	●	●	●	●			188	
<b>R</b> Straight Wire Encore II	100	Slightly variable bass performance is a weakness in this otherwise capable cable	●	●	●	●	●	●	●	●	●			200	
<b>R</b> Supra EFF-ISL	80	Excellent sound in all areas – nothing to criticise	●	●	●	●	●	●	●	●	●			188	
<b>R</b> Tara Labs Prism 22	64	Mild tendency to plumminess offsets some hardness in complex music with mixed results	●	●	●	●	●	●	●	●	●			188	
<b>R</b> Tara Labs Prism 55-i	195	Good with laid-back music, but seems lazy with more exciting material	●	●	●	●	●	●	●	●	●			200	
<b>R</b> TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	●	●	●	●	●	●	●	●	●			200	
van den Hul The Storm	25	Price for 0.8m. Rich and warm but bass is rolled off: however there's plenty of drive and top end is clean	●	●	●	●	●	●	●	●	●			1701	
<b>R</b> van den Hul Source HB	50	Price for 0.8m. Hybrid carbon-fibre/copper cable that is a paragon of naturalness	●	●	●	●	●	●	●	●	●			160	
<b>R</b> van den Hul PB5	50	A highly neutral cable with fine dynamic and rhythmic performance too – excellent	●	●	●	●	●	●	●	●	●			188	
<b>R</b> van den Hul D102 MkIII HB	80	A fine cable, but the competition has crept up and it no longer leads the pack	●	●	●	●	●	●	●	●	●			200	
<b>R</b> van den Hul The First	210	Using 12,000 carbon fibres, a gentle and subtle sounding cable that conveys oodles of information	●	●	●	●	●	●	●	●	●			1702	
<b>R</b> van den Hul The Second	240	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●	●	●	●	●	●	●	●	●			1702	
<b>DIGITAL INTERCONNECTS (PRICES PER TERMINATED LINEAR METRE)</b>															
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear-cut transparency	●	●	●	●	●	●	●	●	●			E	108
Chord Codac	36	A connection with a stranded inner core and a sound that lacks integration	●	●	●	●	●	●	●	●	●			E	108
<b>R</b> Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz	●	●	●	●	●	●	●	●	●			E	1706
<b>R</b> Ixos 105	25	Extended but soft-edged treble that's mercifully free of fatiguing colorations; plenty of weight, smooth	●	●	●	●	●	●	●	●	●			E	1707
<b>R</b> Kimber Kable Opti-link	50	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
<b>R</b> QED Digiflex	20	A top performance, low-loss 75 Ohm coax with a very open, almost liquid quality	●	●	●	●	●	●	●	●	●			E	108
Siltech HF-6	145	Sounds detailed, very clean and extended, but bass is less well resolved – a treat for high-end systems	●	●	●	●	●	●	●	●	●			E	1709
<b>R</b> SonicLink Green	60	Spacious, positive and engaging if a bit over-crisp at times – very compelling, however	●	●	●	●	●	●	●	●	●			E	1709
<b>R</b> van den Hul The First	125	Exceptionally natural albeit slightly cautious compared to some. Plenty of subtle information and integration	●	●	●	●	●	●	●	●	●			E	1710
<b>LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)</b>															
ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative	●	●	●	●	●	●	●	●	●				183
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that are twisted into stereo pairs. Sounds rather grippy and forward	●	●	●	●	●	●	●	●	●				109
<b>R</b> Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical	●	●	●	●	●	●	●	●	●			1711	133
<b>R</b> 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
<b>R</b> 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
<b>R</b> Audioquest F-14	2.2	Ideal for laying under carpets. F-14 encourages a slightly warm and vibrant sound	●	●	●	●	●	●	●	●	●				109
Audioquest F-18	3.60	Slightly lumpy bass and lack of midrange detail: can also be a bit dry	●	●	●	●	●	●	●	●	●				192
Audioquest Type 4	5	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains 'bite'	●	●	●	●	●	●	●	●	●				109
Audioquest Type 6	9	A very inflexible cable in which the sonic ends don't quite justify the means	●	●	●	●	●	●	●	●	●				183
<b>R</b> Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings	●	●	●	●	●	●	●	●	●			1800	157
<b>R</b> Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●	●	●	●	●	●	●	●	●				168
<b>R</b> Cable Talk Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained	●	●	●	●	●	●	●	●	●			1800	157
Cable Talk Concert 2.1	8	Can make stereo images recede, and favours the upper bass	●	●	●	●	●	●	●	●	●				192
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension	●	●	●	●	●	●	●	●	●				168
<b>R</b> Chord Company Odyssey	17	Relatively vice-free cable with good detail throughout the range and generally neutral bass	●	●	●	●	●	●	●	●	●				192
<b>R</b> DNM LSCB500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire	●	●	●	●	●	●	●	●	●			1716	133
<b>R</b> DPA Black Sixteen	100	Unflappable resolution of musical details. No dampening of dynamics, simply oodles of taut information	●	●	●	●	●	●	●	●	●			1717	133
<b>R</b> Gale XL189	1	Slightly bright and not too subtle, but a perfectly acceptable cable for any starter system	●	●	●	●	●	●	●	●	●				168
<b>R</b> Gale XL315	2	A little lacking in detail but plenty of life and excellent value	●	●	●	●	●	●	●	●	●			1800	157
<b>R</b> Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative	●	●	●	●	●	●	●	●	●			1800	157
<b>R</b> Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●	●	●	●	●	●	●	●	●				168
<b>R</b> Hitachi LC-OFc	7	Very crisp, very clear and very confident. In the right system would be very expensive to better	●	●	●	●	●	●	●	●	●				109
<b>R</b> Ixos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant – though only slightly	●	●	●	●	●	●	●	●	●				192
<b>R</b> Kimber 4PR	90 (5m)	Considering the price, this cable's very slight dryness is forgivable when everything else is so right	●	●	●	●	●	●	●	●	●				192
<b>R</b> Kimber 4TC	19.6	A well-balanced cable with good performance in all areas	●	●	●	●	●	●	●	●	●				168
<b>R</b> Kimber 4VS	9	A good mix of virtues including particularly fine bass	●	●	●	●	●	●	●	●	●				183
Linn K20	4	Seems to work best with lively, unsubtle music – can be dry and edgy	●	●	●	●	●	●	●	●	●				183
Naim NAC A5	5.5	A 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems, where it works a treat	●	●	●	●	●	●	●	●	●				109
Nordost Octava	3	Fair bass but confused treble and some coloration	●	●	●	●	●	●	●	●	●				168
Nordost Flatline Gold II	9.50	Exciting sound but a bit too 'in-yer-face', and bass is not always even	●	●	●	●	●	●	●	●	●				192
Ortofon SPK100	3	Grey-sounding – strips instruments of their natural richness and resonance. A bit bass-shy, too	●	●	●	●	●	●	●	●	●				133
<b>R</b> Ortofon SPK200	4.99	Good strong bass and fair detail, only slightly marred by a little dryness	●	●	●	●	●	●	●	●	●				183
<b>R</b> Ortofon SPK300	8	Tremendously open and atmospheric, with robust, full-blooded bass – if slightly bright at times	●	●	●	●	●	●	●	●	●				133
Precious Metals SL102	10	Unusual construction gives rather strained sound, only really cheering up with simple musical textures	●	●	●	●	●	●	●	●	●				183
Puresonic 7845	1.95	Big, weighty sound – but too messy and bloated for its own good	●	●	●	●	●	●	●	●	●				183
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, its music-making failed to gel	●	●	●	●	●	●	●	●	●			1800	157

CONTINUED

# Cables

STATUS	SPECIFICATIONS			FACTSBACK NO.	ISSUE NUMBER	
	SYMMETRICAL	COAXIAL	STRANDED			SOLID CORE
	QED Profile 4x4	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding			168
B	QED Qudos Silver	5	A few minor flaws but overall performance is very assured for this price	●	●	192
	SonicLink S300	18	Happiest with simple music; tends to smudge detail in complex pieces	●	●	168
R	SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced		●	1800 157
R	SonicLink AST150	3.95	Slightly plummy bass and a useful way of holding musical strands together		●	1800 157
	Sonic Link AST200x2	5.95	At its best with exciting music, this cable seems shy of subtler details	●	●	192
	Straight Wire Rhythm	6	Its major flaw seems to be woolly and indistinct bass, which pervades most types of music	●	●	192
B	Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience	●	●	183
R	Supra Ply 3.4	6.95	Clean sound which stays together well at high levels, with full bass – perhaps a touch of treble restriction	●	●	183
R	Tara Labs Klara	2.95	A good budget cable with an even spread of virtues – and very minor vices – across the board	●	●	183
	van den Hul Gold Water	7	Bass becomes shy when there's a lot happening, and detail could be clearer	●	●	183
	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	Good dynamics can make for exciting sound, but fine detail suffers and the treble is often dry	●	●	192
	van den Hul The Magnum	38	Touted as vdH's most prestigious twin-lead cable, The Magnum sounds soft and old-fashioned		●	109
R	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



## Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low- and very-low-output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono-input-equipped valve amps need a transformer to cope with MC cartridges. ■ Even basic high-output MM cartridge designs will benefit from a customised amplifier input load. Consult your dealer for further details on this topic.

### KEY TO SPECIFICATIONS

- **MM:** Moving-magnet cartridge with a normal output, suitable for all amplifier phono inputs.
- **MC:** Moving-coil cartridge with a low output, only suitable for high-sensitivity MC amplifier phono inputs.
- **REPLACEABLE STYLUS:** Most MM cartridges have a stylus (needle) that can be removed and replaced when worn out.
- **OUTPUT (mV):** Cartridge output in millivolts.
- **MASS (g):** The mass of your chosen cartridge.

affects the choice of partnering tonearm. Consult dealers or manufacturers to establish which arms and pickups work well together.

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**B** BEST BUY    **R** RECOMMENDED    **E** EDITOR'S CHOICE

# Cartridges

STATUS	SPECIFICATIONS			FACTSBACK NO.	ISSUE NUMBER	
	MM	MC	REPLACEABLE STYLUS			OUTPUT (mV)
B	Audio Technica AT-95E	20	Clear and dynamic, though richly balanced	●	2.8	48
	Audio Technica AT-OC9ML	330	A well-finished cartridge with a sound that's smoothly detailed, but also rather unexciting	●	0.4	8 192
B	Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy	●	0.55	11.5 2142 175
B	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
B	Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether, and a bargain at the price	●		103
R	Dynavector DV-20X L	299	Articulate-sounding, with impressive treble resolve, though lightweight at times. Needs a high quality turntable and arm	●	0.25	8.6 192
	Dynavector Karat 17D2 mk2	450	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent	●	0.15	5.3 158
R	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 2142 175
R	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
R	Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body	●	5.0	7 67
R	Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency coloration apparent	●	6.5	7 85
R	Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved	●	6.5	7 85
R	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 is not the cleanest	●	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 2143 175
B	Grado Prestige Gold	149	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 2143 175
B	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	399	Immediate and detailed, but coloured and nonlinear, with a questionable effect on records	●	5.0	6 84
R	Lyra Lydian Beta	599	A thoroughly enjoyable cartridge – smooth, agile and dynamic in character	●	0.5	8 192
R	Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed	●	0.3	7 158
B	Lyra Clavis Da Capo	995	A stable tracker, and one of the finest cartridges we've heard	●	0.1	7 143
	Lyra Parnassus D.Ct	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 2144 175
B	Ortofon 510/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●	3.0	5 85
R	Ortofon 520/P	65	Sensitive to load capacitance, but the 520/P has a lively, effervescent sound	●	3.0	5 67

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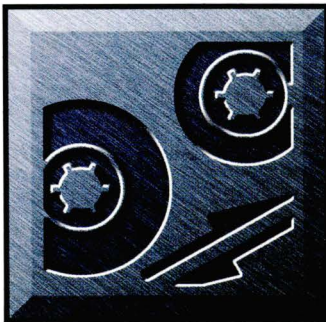
# Cartridges

STATUS

SPECIFICATIONS

REPLACEABLE STYLUS  
OUTPUT (mV)  
MASS (g)  
ISSUE NUMBER  
FACTSBACK NO.

PRODUCT	(£)	COMMENTS	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER	FACTSBACK NO.
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	250	A bit too stark and honest, but faithful to what's on the LP	●	0.5	11	139	
Ortofon MC 10 Supreme	300	A full and cultured-sounding cartridge, with collective attributes far outweighing its shortcomings	●	0.5	10.7	192	
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	2144	175
Ortofon MC3000II	1,100	A real ear-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 body, but 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	
Reson Reca	250	If you're after a high quality moving magnet cartridge, they don't get much better than this	●	6.5	6.3	192	
Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●	6.5	5	91	
Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300	●	2.5	9	192	
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	750	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 extends all the positive qualities of the 10, but adds 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	2145	175
van den Hul G' hopper III/IIA	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	1,573	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound	●	0.45	7	2145	175



## Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Cassette decks hook up to the 'tape loop' inputs and outputs offered by most modern amplifiers. It's worth taking care to choose the best tapes for a specific machine. For example, expensive metal tapes will be a wasted investment for a cheap deck. Many better-specified decks have manual or automatic bias adjustment to get the best from specific samples of tape. Twin decks offer the possibility of copying from tape to tape, playing two cassettes sequentially or recording onto two tapes at once. Autoreverse is a useful feature, but uni-directional mechanisms promise better sound. Dolby S is the ultimate noise reduction system, and three-head decks permit record monitoring off-tape.

KEY TO SPECIFICATIONS

- **DOLBY B/C:** The first and second Dolby hiss-killers.
- **DOLBY S:** A desirable derivative of Dolby SR professional noise-reduction.
- **DOLBY HX-PRO:** Extends headroom for cassette recording.
- **3-HEAD:** Permits monitoring off-tape while you're recording.
- **TWIN DECK:** Contains two decks for dubbing and continuous play.
- **AUTOREVERSE:** Automatically plays both sides of the cassette.
- **AUTO CALIBRATION:** The deck will automatically set up bias and EQ for any tape.
- **ADJUSTABLE BIAS:** Permits manual optimisation of tape.

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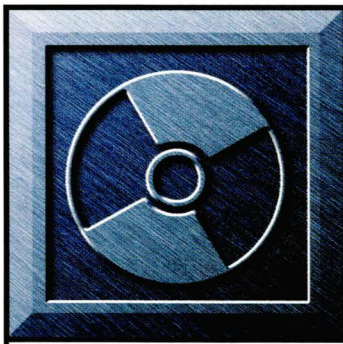
STATUS

# Cassette Decks

SPECIFICATIONS

DOLBY C  
DOLBY S  
DOLBY HX PRO  
3-HEAD  
TWIN DECK  
AUTO REVERSE  
AUTO CALIBRATION  
ADJUSTABLE BIAS  
ISSUE NUMBER  
FACTSBACK NO.

PRODUCT	(£)	COMMENTS	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN DECK	AUTO REVERSE	AUTO CALIBRATION	ADJUSTABLE BIAS	ISSUE NUMBER	FACTSBACK NO.
Aiwa AD-F450	120	Basic but well-designed 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	
Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●	●	●	●	●	●	●	●	1591	140
Denon DRM-650S	230	An improvement on predecessors, it offers a wide-ranging, sound. Dolby S is not the best feature	●	●	●	●	●	●	●	●	1920	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	●	●	●	●	●	●	●	●	1920	164
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●	●	158	
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 performance	●	●	●	●	●	●	●	●	2039	171
Kenwood KX-V6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass	●	●	●	●	●	●	●	●	2040	171
Marantz SD455	170	Works well as a single deck, especially on replay, but dubbing at high/low speed compromises sound	●	●	●	●	●	●	●	●	184	
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●	●	158	
NAD 616	300	Twin deck with basic features. No Dolby setting memory, transport is too unstable for audiophile use	●	●	●	●	●	●	●	●	2041	171
Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD	●	●	●	●	●	●	●	●	195	
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	●	●	●	●	●	●	●	●	1920	164
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended	●	●	●	●	●	●	●	●	2042	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 sound	●	●	●	●	●	●	●	●	158	
Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound	●	●	●	●	●	●	●	●	184	
Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head	●	●	●	●	●	●	●	●	1920	164
Technics RS-AZ7	270	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in state-of-the-art	●	●	●	●	●	●	●	●	158	
Yamaha KX-490	200	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 deck, with a lightweight tonality, but stability and strong detail	●	●	●	●	●	●	●	●	2043	171



## CD/DVD Players

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 p129). To do this the player needs a digital output of either electrical or optical type. The former is preferable for the ultimate sound. A CD player can be split into two basic components: the disc drive or transport, and a device which converts the disc's digital bitstream into an analogue audio signal. This is called a digital to analogue converter, or DAC. Although most players are contained within a single box, expensive players are usually two-box affairs. The first new DVD players have not excelled with CD software.

### KEY TO SPECIFICATIONS

- **ELECTRICAL DIGITAL OUTPUT:** For electrical connection to an outboard DAC.
- **AES/EBU ELEC DIG OUTPUT:** Balanced digital output to be used with similarly equipped DACs.
- **OPTICAL DIGITAL OUTPUT:** For optical connection to an outboard DAC.
- **ST OPT DIG OUTPUT:** High-speed optical output to be used with similarly equipped DACs.
- **BAL ANALOGUE OUTPUT:** Balanced analogue output for amplifiers equipped with balanced inputs.
- **HEADPHONE SOCKET:** For 'can' users.
- **VARIABLE OUTPUT:** Remotely adjustable output level (usually non-audiophile).
- **MULTI-DISC:** Equipped with a carousel or multi-tray system for continuous play of multiple discs.
- **DAC TYPE:** BS – Philips Bitstream; MB – multi-bit; Hyb – hybrid of multi-bit and bitstream technologies; 1bit – single bit types eg MASH, bitstream, PWM, etc; CC – constant calibration.
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**B** BEST BUY

**R** RECOMMENDED

**E** EDITOR'S CHOICE

# CD/DVD Players

### SPECIFICATIONS

AES/EBU ELEC DIG OUTPUT
OPTICAL DIG OUTPUT
ST OPT DIG OUT
BAL ANALOGUE OUT
HEADPHONE SOCKET
VARIABLE OUTPUT
MULTI-DISC
DAC TYPE
FACTSBACK NO.
ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	AES/EBU ELEC DIG OUTPUT	OPTICAL DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	FACTSBACK NO.	ISSUE NUMBER	
<b>B</b> Acurus ACD11	899	First-rate if costly player, which combines a delightful transparency with an uncontrived naturalness	●	●		●				1bit	1962	166	
Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass	●	●		●				1bit		165	
Advantage CD15	3,995	A CD player of some stature – what it lacks in dynamics it makes up for in subtlety and flow	●	●	●	●				20bit		193	
Alchemist Kraken	1,249	Distinctive looking player likely to suit an Alchemist system, but will result in variable results elsewhere	●	●		●				24/96		190	
<b>R</b> Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation	●	●		●				Hyb		169	
AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable	●	●		●				BS	2071	172	
<b>B</b> AMC CD9/DAC8	200	Beer-budget two-box system (player plus DAC) is smooth, attractive and easy on the ear	●	●		●				CC	2261	179	
Anthem CD1	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy	●	●		●				MB	2219	178	
<b>R</b> Arcam Alpha 7SE	350	Revamped starter model is a clear improvement on very likeable predecessor	●	●		●				MB		195	
<b>R</b> Arcam Alpha MCD	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer	●	●		●				●	MB	2220	178
<b>R</b> Arcam Alpha 8	520	Refined, intricately detailed but a little cautious. Should be broadly compatible with a variety of amps	●	●		●				BS	1873	163	
<b>R</b> Arcam Alpha 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder	●	●		●				1bit		176	
<b>R</b> Arcam Alpha 9	800	Refined, articulate player which employs new DAC technology to great effect	●	●		●				Ring		188	
Audio Analogue Paganini	750	Basically good, but sometimes heavy-handed player	●	●		●				24bit		191	
Audio Research CD1	3,290	Suspends disbelief with a real yet obviously coloured sound. A rare proposition among CD players	●	●	●	●				BS	1875	163	
Audio Note AN-CD1	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured	●	●		●				Hyb		188	
Audio Note AN-CD2	999	High output impedance makes performance unduly system fussy	●	●		●				MB		195	
AVI S2000MC2	899	A chip off the old block. This model's in-yr-face balance obstructs an otherwise finely detailed sound	●	●		●				MB	2179	176	
<b>R</b> AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system	●	●		●				MB		169	
Balanced Audio Tech VK-D5	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety	●	●		●				18bit		194	
Cambridge Audio D100	120	Hard, clanging and coloured sounding, and with suspect control logic	●	●		●				DS		200	
<b>R</b> Cambridge Audio CD4	150	Basic appearance and sluggish track access/track search belies its up-and-at-'em sound quality	●	●		●			●	Hyb	1268	147	
<b>R</b> Cambridge Audio CD4SE	200	Among the best encountered at the price, considerably more refined and convincing than the CD4	●	●		●				BS	1877	163	
<b>R</b> Cambridge Audio CD6	250	A sharp, articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●	●		●				BS		159	
<b>R</b> Copland CDA-266	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution	●	●		●				MB	2183	176	
Copland CDA 289	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000	●	●		●				20bit		194	
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour	●	●		●				MB	1880	163	
<b>R</b> Cymbol CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings	●	●		●				Hyb	2184	176	
<b>R</b> Cyrus dAD1.5	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality	●	●		●				Hyb		191	
<b>R</b> Cyrus dAD3	598	A relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance	●	●		●				BS	1887	163	
<b>R</b> Cyrus dAD3 Q24	900	Bold, lean and lively player demands sympathetic system matching	●	●		●				DS		200	
Denon DCD-435	130	Good low cost player, and a step up from the DCD-425, its predecessor	●	●		●			●	DS		191	
Denon DCD-655	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems	●	●		●				MB		200	
Denon DCD-625	200	DCD-615 replacement is generously equipped but lacks sophisticated sound of its forebear	●	●		●				MB	1269	147	
Denon DCD-835	280	Refined version of Denon's multi-bit technology is a bit of a star	●	●		●				MB		184	
Denon DCD-1550AR	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player	●	●		●				MB	2266	179	
Denon DCD-1650AR	700	Powerful, authoritative, and well equipped too, but this player sometimes lacks subtlety	●	●		●				MB		195	
<b>R</b> Denon DCD-3000	1,000	Sings with the temperament of a huge orchestra under the baton of a timid conductor	●	●		●				MB	1881	163	
Exposure CD player	1,049	Slightly weak sounding, but otherwise well optimised, if costly player	●	●		●				MB		188	
Harman/Kardon HD710	200	A player of integrity, but can sound a bit hard and rough when extended, and is amplifier fussy	●	●		●				1bit		159	
<b>R</b> Harman/Kardon HD740	300	Powerful but subtle and involving player: welcome back, Harman/Kardon	●	●		●				DS		191	
<b>R</b> Harman/Kardon FL8300	300	Generally capable changer with relaxed sound and firm bass. Just a hint of roughness on occasion	●	●		●			●	●	MB	2220	178
Harman/Kardon HD760	500	Sophisticated internally, but mildly disappointing when treading the boards in anger	●	●		●				MB		195	
Helios Model 3	650	Disappointing entry level model from Helios lacks verve and transparency	●	●		●				DS		188	
Helios Model 2	950	This player may not be to everyone's taste, but it is an individual, with some interesting things to say	●	●		●				1bit	2180	176	
<b>R</b> JVC XL-V184BK	120	Excellent budget player, well presented, a little opaque, but its heart is in the right place	●	●		●				1bit	2072	172	
<b>R</b> JVC XL-V284BK	140	Featuring a new set of bitstream innards, this flexible player has a refined sound	●	●		●				1bit	1270	147	
JVC XL-Z574	250	Strong resolving power, good midband and dynamics, but slightly raw and thin	●	●		●				1bit		159	
<b>R</b> JVC XL-Z674BK	300	Even-handed, but glosses over the most intimate moments	●	●		●				1bit	1637	151	
<b>R</b> Kenwood DP-3080	170	Bold, dynamic and outgoing sound, although somewhat aggressive. Poor build quality and finish	●	●		●				1bit		159	
Kenwood DPF-3010	180	Grey, somewhat mechanical sounding player	●	●		●				Hyb		191	
<b>R</b> Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music – and has CD Text too	●	●		●				1bit	2076	172	
Kenwood DP-5090	300	Disappointing senior brother to the excellent DP-4090, but surface interface is good	●	●		●				1bit	2267	179	
<b>R</b> Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●	●		●				MB	1885	163	
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●	●		●				Hyb		1762	155
Marantz CD-48	200	Somewhat inconsistent, middle ranking player which hints at better things	●	●		●				1bit	2077	172	
<b>R</b> Marantz CD6000 OSE	300	Superbly constructed, slightly emasculated sounding, but smooth and articulate	●	●		●				1bit		200	
<b>R</b> Marantz CD-63 MKII Ki Sig	400	It's the quintessential sound of Marantz – warm, open, and smooth almost to a fault	●	●		●			●	Hyb		169	
<b>R</b> Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●	●		●				BS	1763	155	
<b>R</b> Marantz CD-17KI Sig	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland	●	●		●				BS	2181	176	
<b>R</b> Marantz CD-7	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure	●	●		●				16bit		194	

CONTINUED

# CD/DVD Players

STATUS

SPECIFICATIONS

AES/EBU ELEC DIG OUT  
OPTICAL DIG OUT  
BAL ANALOGUE OUT  
ST OPT DIG OUT  
HEADPHONE OUT  
VARIABLE MULTI-DISC OUTPUT  
MULTI-DISC DAC TYPE  
FACTS/BACK NO.  
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	BAL ANALOGUE OUT	ST OPT DIG OUT	HEADPHONE OUT	VARIABLE MULTI-DISC OUTPUT	MULTI-DISC DAC TYPE	FACTS/BACK NO.	ISSUE NUMBER
Meracur 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 DJA chip, which makes it livelier and more detailed	●	●	●				1bit	2182	176
Monrio Asty	695	Well built player has solid, propulsive sound quality that deteriorates towards HF	●	●					DS	200	
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●	●					MB	1963	166
Musical Fidelity X-RAY	799	Brilliantly packaged and clean but slightly antiseptic sounding player	●	●					MB	184	
Musical Fidelity A3 CD	800	Excellent player has few faults apart from a slight loss of EHF detail	●	●					DS	200	
Myryad T-10	400	Rather ordinary player fails to shine with good music recordings	●	●					DS	184	
Myryad T-20	600	Matter of fact styling and sound quality, a tad bright for some systems	●	●					DS	195	
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, showing much promise, but can be a little heavy-going on audition	●	●					1bit	2185	176
NAD 522	170	Crude, mechanical sounding player fails to tickle the music buds	●	●					1bit	2262	179
NAD 524	250	Clean, clear and essentially musical player in the NAD mould	●	●					MB	191	
NAD C540	330	Not cheap, and disc handling is pedestrian at best, but the C540 is smooth & elegant with just a hint of aggression	●	●					DS	200	
NAD Silverline S500	1,100	It sounds as good as it looks, which is notably refined and easy on the ear	●	●	●		●		MB	195	
Naim Audio CD3.5	1,000	Forward and explicit sound needs careful system matching							Hyb	188	
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
Naim NACDSII/XPS	5,625	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results							MB	188	
Onkyo DX-7222	150	Competitive following recent price cut, and on the whole a strong performer musically	●	●				●	BS	200	
Onkyo DX-7510	400	Strongly flavoured, assertive sound	●	●					BS	1640	151
Parasound C/DP-1000	499	Comes on like a high end player, but ultimately sounds a bit weak and soft-centred	●	●					Hyb	184	
Philips CD-721	130	Surprisingly well-sorted, articulate if slightly glossy and attractively presented sound. Captive signal lead	●	●					1bit	159	
Philips CD751	150	Inconsistent and occasionally opaque and scrawny sounding cheapie	●	●					1bit	172	
Pioneer PD-S507	200	Low cost Legato Link implementation sounds gentle but slightly muddled	●	●					DS	191	
Pioneer PD-S707	300	Idiosyncratic Legato Link dominated sound, but always subtle and interesting	●	●					MB	184	
Pioneer PD-F906	350	Interesting appearance and concept, but this changer's sound is lacklustre and ergonomics frustrating	●	●					1bit	2223	178
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	●	●					MB	2176	176
Pioneer PD-S505 Precision	460	Assured, fluid-sounding player, with great spatial coherence	●	●					1bit	1965	166
Primare D20	799	Well presented player doesn't quite cut the mustard, though it performs promisingly	●	●					BS	188	
Revox Exception E426	2,250	Very stylish with a light, agile sound that extends superbly and has fine timing	●	●				●	BS	182	
Roksan Kandy	475	Slightly old-fashioned sound quality player available in various colour schemes	●	●					DS	200	
Roksan DP3P	1,495	Dramatic and compelling. Classical listeners should be ready to 'air conduct' when auditioning	●	●					BS	1896	163
Roksan Caspian	895	Solid, articulate, and fundamentally well-engineered player, but with some subtle low-level limitations	●	●					Hyb	169	
Rotel RCD-951	300	Disappointing chopped-down RCD-971 – buy the original	●	●					MB	191	
Rotel RCD-971	450	Odd disc handling logic, but bold, detailed and refined sound make this a must	●	●					MB	184	
Rotel RCD-991	750	Confirms Rotel's status as must watch brand: great stuff	●	●	●		●		MB	195	
Sherwood CD-4030R	180	Easy on the ear, smooth-sounding player, with limits set by the slightly soft, compressed quality	●	●					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-XE530	140	Well equipped, but raw, scrappy sounding player lacks depth and weight.	●	●					Pulse	200	
Sony CDP-XE510	180	Souped up CDP-XE500 which tells a rather bland and unengaging story	●	●					1bit	172	
Sony CDP-XB720E	200	Good basic performance and a number of filter settings make this an interesting player for tweaks	●	●					Low bit	184	
Sony CDP-XB930E	300	Yet another first rate UK optimised player with all the bells and whistles	●	●					Pulse	195	
Sony CDP-XA20ES	450	High-tech, with a long list of gadgets, oddly configured player that ultimately sounds less than compelling	●	●					1bit	2177	176
Sony CDP-X3000ES	500	Shoebus format player, looks to die for, switchable digital filters to tweak the already excellent sound	●	●					BS	169	
Sony SCD-777ES	1,700	Beautifully built SACD player that looks like a bit of a CD player bargain	●	●					BS	198	
Sony SCD-1	2,500	The first SACD player sounds fabulous but there's not much competition and limited software as yet	●	●					BS	194	
T+A CD1210R	1,185	Intriguing player with rather pushy basic sound, but has switchable digital filters	●	●					DS	188	
Talk Electronics Thunder 1	559	Entry level upgradeable Talk Electronics player sounds slightly muted	●	●					DS	200	
Talk Electronics Thunder 2	690	Fine player, slightly lacking in dynamics, but readily, if expensively upgradeable in various ways	●	●					1-bit	191	
Talk Electronics Thunder 3	1,000	Clean, fast, and availability of a complete upgrade path make this a good long term proposition	●	●					DS	195	
TAG McLaren CD20R	1,249	Dry and unatmospheric, but plenty of presence – recommended with caution	●	●					BS	188	
Teac CDP-3450SE	200	For once a budget player where gadgets take second place to respectable, budget amp-friendly sonics	●	●					1bit	1960	166
Teac CD-5	350	Bright, breezy and upbeat – but short in the trouser department	●	●					BS	1643	151
Teac VRDS-8	600	Superb build quality is matched to good, but not exceptional sound quality	●	●					MB	184	
Teac VRDS-9	700	Well-presented. This Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	●	●					1bit	2178	176
Teac VRDS-10SE	850	Superbly built and presented, but rather leaden bass, with an over-prominent mid/top	●	●					BS	169	
Teac VRDS-25x	1,000	Excellent, individualistic player with bold, colourful sound, but test sample had iffy CD-R compatibility	●	●					MB	195	
Technics SL-PG480A	130	Full driving sound, but somewhat uneven in balance with a unsubtle, slightly harsh top end	●	●					1bit	159	
Technics SL-PS670D	200	Fine, middle ranking player which sounds solid, sometimes even a little stolid	●	●					1bit	2264	179
Technics SL-PS770D	250	High tech and well built technology battleship which smooths the rough edges off the music	●	●					BS	2080	172
Technics SL-MC410	250	If you fancy a CD player that holds 111 discs, this one's cheap, pretty capable, and easy to use	●	●					Hyb	2224	178
Thule Spirit CD100	600	Definitely a try before you buy machine, but the bass and mid are excellent	●	●					DS	188	
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	1966	166
Tube Technology Fusion	1,100	Our early test sample was primitive and flawed, but showed signs of greatness	●	●					PA	195	
Tube Technology Fulcrum	2,800	An imaginative two-box player with a smooth sound that lacks some lustre	●	●					24bit	194	
Wadia 830	3,000	Envelope busting dynamics, power and imaging in a rather unexciting box (digital volume control)	●	●					MB	183	
Wadia 860x	7,450	If you want to discover what CDs are really capable of this has few peers	●	●	●		●	●	MB	199	
Yamaha CDX-493	180	Open and lively, but this player is also messy and lacking resolving power	●	●					Hyb	191	
Yamaha CD-X993	400	A bit of a lush, though the sound is singularly free of grain, and equipment levels are strong	●	●					BS	184	
YBA Spécial	695	There is nothing here to justify the pricing or the high-end parentage. Avoid	●	●					MB	195	
YBA CD1α	3,895	A remarkably fluid and graceful sound – one of the best we've heard below £5,000	●	●					18bit	194	
<b>TRANSPORTS</b>											
Audio Note CDT Zero	399	Neat shoe box size transport sounds smooth and fluid in the right system. (Tested with DAC Zero)	●	●							191
Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●	●							1323
Roksan Attezza ATT-DP3	1,295	Not the most detailed or refined but capable of sounding exciting with the right material	●	●						1bit	1867
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound. (Tested with D-T1)	●	●							1325
Theta Data Basic II	2,397	Uses a Philips CDM9 Pro mechanism and works a treat with more lively DACs	●	●							1494
Thorens TCD2000	999	Lively presentation not helped by rather loose bass and splashy treble. (Tested with TDA 2000 DAC)	●	●							1867
Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●	●							1867

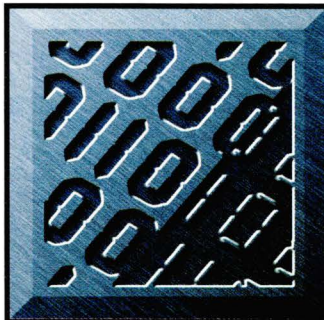
CONTINUED

# CD/DVD Players

**SPECIFICATIONS**  
 AES/EBU ELEC DIG OUT  
 OPTICAL DIG OUT  
 ST OPT DIG OUT  
 BAL ANALOGUE OUT  
 HEADPHONE SOCKET  
 VARIABLE OUTPUT  
 MULTI-DISC  
 DAC TYPE  
 FACTSBACK NO.  
 ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	FACTSBACK NO.	ISSUE NUMBER
<b>DACS</b>												
Alchemist TS-D-1	300	24/96-equipped DAC sounds tidy but a little shut-in with both 16-bit CDs and 24-bit, 96kHz DVDS									BS	187
Audio Note DAC Zero	369	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)									Hyb	191
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
Musical Fidelity X-24K	300	24/96 ready with a warm, natural sound and good soundstaging (tested with Pioneer DV-717)									MB	187
PS Audio UltraLink 2 HDCCD	2,590	The sound positively sparkles with colour and resonant detail. (Tested with Lambda transport)									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/DSS	1,145	Not the most detailed or refined but capable of good excitement with the right material									1bit	1867 162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed									BS	1325 144
Thorens TDA2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble									BS	1867 162
Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc.									Hyb	1867 162
<b>DVD PLAYERS</b>												
Denon DVD-2500	500	Good picture, but nondescript sound, except when using the digital output at full 24/96 throttle	●	●							DS	198
Denon DVD-3000	700	Enjoyable rather than analytical, includes 24/96 and AC-3/MPEG-2 Audio	●	●							BS	180
Denon DVD-5000	1,600	The first DVD-V player that ain't bad as a CD player. A fine musical device	●	●							BS	187
Hitachi DV-P2E	400	DVD player, based on last generation Pioneer, is good but uninspiring	●	●								24/96 190
JVC XV-S2000	475	DVD player with excellent picture but flat sound in most modes	●	●								PEM 190
JVC XV-D701	500	Good video player, but rather undeveloped musically - CD Text is neat, though	●	●								DS 198
Kenwood DVF-9010	1000	DVD player with brilliant picture and clean, lively sound	●	●								24/96 190
Nakamichi DVD-10	800	Not the most compelling model in the resurrected Nakamichi line-up	●	●								DS 198
Panasonic DVD-A150	400	Simple, mid-market DVD player is vice-free but limited for the audiophile	●	●								24/96 190
Panasonic DVD-A360E	580	Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best	●	●								DS 198
Philips DVD750	400	Clever DVD with CD-R/CD-RW compatibility and surprisingly keen sound	●	●								DS 198
Pioneer DV-515	400	Unusually well equipped (CD-R compatible etc) DVD with more than fair sound and picture quality	●	●								MB 190
Pioneer DV-626D	450	Superbly equipped, and more than respectable sound quality	●	●								DS 198
Pioneer DV-717	550	Superb DVD player with good picture quality and which really knows how to play 24/96 discs	●	●								MB 190
Samsung DVD-907	500	DVD player with below average picture, and lacklustre sound quality	●	●								24/96 190
Sony DVP-S7700	950	Powerfully endowed player offers articulate and believable sound	●	●								DS 198
Teac DV-1000	400	Blowsy, and occasionally astringent sounding, but otherwise straightforward and reasonably priced	●	●								DS 198
Theta DaViD	4,650	A top-notch CD transport, that also plays DVD-Video discs well. Pricy for a DVD transport, but worth it	●	●		●						24/96 191
Thomson DTH2000	380	This DVD player's main attributes are reasonable pricing and fair to good all round performance	●	●								24/96 190
Toshiba SD9000	800	Costly, high tech player with stunning pictures and crisp, slightly lightweight sound	●	●								DS 198
Yamaha DVD-S795	529	Fare price, and an unconstrained digital output, but otherwise unexciting	●	●								DS 198



## Digital Recorders

Domestic digital recording has been possible since the launch of digital audio tape (DAT) in the '80s. Since then DAT has remained expensive and largely esoteric, favoured only by well-heeled or professional users. Digital Compact Cassette and MiniDisc (MD) were launched in the early '90s but only MD has stayed the course. A little later came domestic CD-Recorders using CD-R discs, while the latest twist is the arrival of re-recordable CDs known as CD-RW discs. The recording quality hierarchy is as follows: DAT, CD-R/CD-RW, MD. MD is probably the most convenient to use, and offers sophisticated editing facilities, while CD-R is ideal for making digital 'dones' of prerecorded CDs. DAT is the medium of choice for high-quality location recording.

### KEY TO SPECIFICATIONS

- **FORMAT:** Type of recorder - see left for descriptions.
- **DAC TYPE:** Digital to analogue converter: BS - Philips Bitstream; MB - multibit; Hyb - hybrid of multibit and bitstream; 1bit - single bit types such as MASH1, bitstream, PWM etc.
- **ADC TYPE:** The analogue to digital converter (ADC) converts sound into digits during live recording. Types of ADC are as per DACs (qv).
- **PORTABLE:** Battery operable, but not necessarily personal-stereo-sized.
- **OPTICAL IN/OUTPUTS:** Digital socketry for optical cable.
- **ELEC IN/OUTPUTS:** Digital socketry for electrical cable.
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
- **ISSUE NUMBER:** The issue of Hi-Fi Choice in which an original review appeared.

**B** BEST BUY    **R** RECOMMENDED    **E** EDITOR'S CHOICE

STATUS

# Digital Recorders

### SPECIFICATIONS

FORMAT  
 DAC TYPE  
 ADC TYPE  
 OPTICAL IN/OUTPUTS  
 ELEC IN/OUTPUTS  
 FACTSBACK NO.  
 ISSUE NUMBER

PRODUCT	(£)	COMMENTS	FORMAT	DAC TYPE	ADC TYPE	OPTICAL IN/OUTPUTS	ELEC IN/OUTPUTS	FACTSBACK NO.	ISSUE NUMBER
<b>MINIDISCS</b>									
Denon DMD-1000	300	A good machine, but it still doesn't manage to shake off the MiniDisc plague of losing the listener's interest							184
Denon DMD-1300	500	Sound sometimes lacks integration but tonal balance is good and it handles loud music with panache						2193	177
Kenwood DMF-9020	500	One of the best MD decks yet for sound quality, and the first to make titling a practical proposition							191
Kenwood DM-9090	550	Slight sibilance and image vagueness do not detract from excellent balance and solid bass						2194	177
Marantz CM635	500	CD player and MD recorder in one box: a practical idea but sound and features don't really match the asking price							191
Onkyo MD-121	450	Mid-sized deck that sounds slightly coloured at times, though immediate and lively						2195	177
Pioneer MJ-D707	250	A handy set of features for the price, though sound is not outstanding							191
Sharp MD-R1 MKII	200	It's cheap: sound is not outrageously bettered by rather pricier competition. A bit thin on features though							191
Sharp MDR3H	300	Nifty machine combining a 3-disc CD changer with a MD recorder. Sound on both is rather below par, though							184
Sharp MD-R2	300	Budget recorder that loses little or nothing in comparisons with much more expensive models - highly capable						2196	177
Sony MDS-JB920	300	One of the better MD decks, its sound is neutral and dynamic. European Audio Recorder of the Year '98-'99							184
Sony MDS-JA20ES	500	Sound quality about as good as it gets with MD to date, and a very comprehensive features set too							191
Sony MDS-JA55ES	650	Probably the best MD deck to date, with consistently less quality loss over a wide range of programme. Lots of features							194
Yamaha MDX-793	300	Nice machine to use and has some useful features, but sound quality a little wanting							191
<b>CD RECORDERS</b>									
Marantz DR700	600	Dearer than Philips and Traxdata equivalents, with apparently only a smarter front panel to show for it	CD-R	BS	BS				191
Philips CDR-880	499	Capable of making perfect copies of CD digital, and very acceptable copies of anything analogue too	BS	BS	N				184
Pioneer PDR-555RW	480	Competitor to Philips' CDR-880; can't make perfect copies but has the edge in replay and analogue record sound	BS	BS	N				184
Pioneer PDR-04	700	Scaled down version of the PDR-05 with auto level setting but all the socketry and features you need to make CDs	CD-R	BS	BS				171
Pioneer PDR-05	1,000	The first domestic CD-R deck - excellent sound quality	CD-R	BS	BS			1652	152
Traxdata Traxaudio 900	499	Identical to Philips and Marantz models: it makes bit-perfect copies of CDs and has perfectly acceptable replay	CD-R	BS	BS				191



# Headphones

There are several different ways of making a headphone. The most expensive models employ electrostatically-driven diaphragms within an open-backed earcup. Most mid-price designs feature dynamic, moving-coil-driven diaphragms in open, semi-open or closed-back designs. An open-backed headphone can sound remarkably transparent, but also permits the ingress of external noise. Closed-back designs keep out unwanted sound, but may be less comfortable to wear and more coloured. The latest development is the cordless headphone using either infrared light or, more recently, radio waves. Quality is improving, but has yet to match the best corded designs.

## KEY TO SPECIFICATIONS

- **TYPE:** Operating principle: D - dynamic; E - electrostatic.
- **SUPRA-AURAL:** Where a flat pad presses on the outer ear.
- **CIRCUMAURAL:** Where the earcup encloses the ear.
- **OPEN BACK:** Offers an open sound but lets in noise.
- **CLOSED BACK:** Keeps out external noise.
- **MASS (g):** Mass in grams
- **IMPEDANCE (Ω):** Load offered to the headphone amplifier. Many headphones offer a significantly higher value than loudspeakers, for example, but this does not mean they will be incompatible with the majority of amplifiers.
- **3.5MM JACK ADAPTOR:** Compatible with mini-jacked components, eg personal stereos.
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
- **ISSUE NUMBER:** The issue of *H-Fi Choice* in which an original review appeared.

**B** BEST BUY      **R** RECOMMENDED      **E** EDITOR'S CHOICE

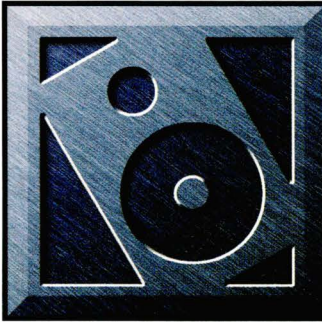
# Headphones

STATUS

## SPECIFICATIONS

PRODUCT	(E)	COMMENTS	TYPE	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	FACTSBACK NO.	ISSUE NUMBER
AKG 301	70	Big 'phones with even and detailed sound but lacks sufficient bass weight	D					230	100			194
AKG K 240 DF	100	Inoffensive 'phones that are very laid back, if lacking in grunt	D					240	600			186
<b>R</b> AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D					270	120			99
<b>R</b> Audio Technica ATH910PRO	80	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found	D					280	40			55
<b>R</b> Audio Technica ATH-D40fs	100	Detailed and involving sound with a professional 'studio' quality appeal	D					250	66			194
<b>R</b> Audio Technica ATH-M40	120	Incredible detail and honesty from these classically designed studio 'phone	D					250	60			186
Beyer DT311	50	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D					124	40		1098	133
Beyer DT411	63	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D					120	250			111
Beyer DT331	65	Clear and extremely detailed sound with rather thin bass	D					210	40			194
Beyer DT431	81	Nice looking 'phones that may not be the best players on the field, but will always give 100 per cent	D					210	40			186
<b>R</b> Beyer DT511	106	Superb midband clarity and speed slightly at odds with soft bass. Even so, high tingle factor	D					200	250		2063	172
<b>R</b> Beyer DT531	135	A good buy for serious, heavy-duty music making	D					245	250			144
<b>R</b> Beyer DT831	140	These provide silky, smooth textures in abundance and we're not just talking about the velvet ear pads	D					295	250			186
Beyer DT100	160	Rugged, modular professional design, but bass is woolly and treble lacks detail	D					350	600			157
<b>R</b> Beyer DT911	170	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		2063	172
Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable	D					120	32		2064	172
<b>R</b> Grado SR60	79	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste	D					200	32			194
Grado SR-80	100	Open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D					60	8		1801	157
<b>R</b> Grado SR125	150	What these 'phones lack in style they make up for ten-fold in musical quality	D					200	32			186
<b>R</b> Grado SR-225	200	Warm, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music	D					200	32		1883	163
<b>R</b> Jacklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness	D					400	200			55
JVC HA-D50	45	Detailed but with a characteristic mid-band all of their own and a modest amount of lower bass	D					290	56			194
JVC HA-W60	49	Remarkable lack of interference and hiss ameliorates adequate sound of this cordless design	D					165	I/R			172
JVC HA-D910	65	Broadly acceptable if unexciting design with low level losses and some colorations	D					220	32			121
<b>R</b> JVC HA-W200RF	75	Distinct lack of hiss from these FM cordless 'phones ensures that detail and depth are easily heard	D					280	20,000			186
Koss TD/80	50	Oodles of bass but with a recessed midband; tiresome on the head with prolonged wearing	D					250	60			194
Koss R/100	100	Rather cheap looking 'phones that supply good detail but are severely lacking in midrange excitement	D					215	60			186
Precede Ergo Model 2	140	Still has much of the spaciousness of the Float from which it is derived, but coarse mid/top	D					380	100		1892	163
<b>R</b> Philips SBC 3396	70	Remarkably airy for closed-back designs. Fine tonal balance, punchy delivery. Amazing value for money	D					255	32		2064	172
Philips SBC HP900	90	Sharper, snappier midrange than 3396: initially impressive but blows it on balance and listenability	D					200	32		2065	172
Sennheiser IS 380	55	As close as you'll get to real hi-fi with infra-red phones at this price. Inevitable hiss spoils the illusion	D					192	I/R			172
<b>R</b> Sennheiser HD 455	55	Inoffensive, if nondescript sound; modular, but can become dislodged from head	D					185	60		1801	157
Sennheiser HD 500	70	A disappointing pair that offer good stereo-imaging, but little else	D					210	32			186
Sennheiser HD 475	80	Elegant, uncluttered sound and very comfortable but lean bass saps satisfaction	D					120	60		2065	172
Sennheiser RS 400	80	FM cordless 'phones that are very wearable, but slightly woolly sounding with interference problems	D					160	N/A			186
<b>R</b> Sennheiser HD 570 Symph	90	Comfortable, light-weight 'phones with a detailed and open sound but lacks bass depth on weightier music	D					210	64			194
Sennheiser HD 545	125	Fine all-rounder that takes all styles of music in its stride. Ear-clamping headband	D					255	150		2066	172
<b>R</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 a pure midband, but top end is sibilant and edgy	E					260	N/A		1898	163
Sony MDR-605LP	50	Funky looking headphones that have a very bold, but tiring sound, with coloured bass	D					145	40			186
Sony MDR-CD770	100	Neutrality and comfort make the Sony easy to live with. Correct-sounding too, yet musically unrewarding	D								1801	157
Sony MDR-V700DJ	100	Great looking fold-away 'phones with exceptional build quality. Kickin' bass	D					300	24			194
<b>R</b> Sony MDR-CD1700	200	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone	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		2066	172
Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof	D					230	32		2067	172
<b>R</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
Vivanco Cyberwave FMH3000	40	The only cordless 'phone to offer genuine walkabout freedom, but sounds like a cheap FM tuner	D					210	FM			172
Vivanco IR5800	50	Consistently musical infra-red design. Doesn't reach for sonic heights so hiss can be forgiven	D					226	I/R			172
<b>R</b> Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive	D					175	50		1801	157
<b>R</b> Vivanco SR750	60	Cossetting physical design, attractive sound, though suffers overhang and lacks ultimate dynamics	D					188			1801	157
<b>R</b> Vivanco SR 950	80	Cuddly feel and sound make these an enjoyable pair of 'phones	D					252	32			194
Vivanco FM7980	80	A fair amount of whine and crackle detracts from 'phones which are otherwise very listenable	D					280	9,000			186
Vivanco FM8180	99	Well thought-out features and a better than average sound are, at times, marred by intrusive hiss	D					240	9,000			186





# Loudspeakers

As the last link in the hi-fi chain, loudspeakers are at the mercy of incoming signals. Nevertheless, distortions introduced by loudspeakers tend to be the most obvious. Inside the average loudspeaker is a simple electrical circuit (the crossover) which splits the incoming, full-frequency-range signal for the specific drive units to handle: highs to the 'tweeter', lows to the 'woofer'. For any speaker, designers must balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against bass extension (how low it goes). Subwoofers augment bass and are either passive (unamplified) or, preferably, active (self-amplified). Our 'bass from' figures are based on measurements in a particular room therefore results will vary in different environments.

KEY TO SPECIFICATIONS				
● <b>SIZE WxHxD (cm):</b> Width by height by depth in centimetres	● <b>FLOORSTANDER:</b> Requires no stand support	● <b>SENSITIVITY (dB/W):</b> How much sound results for a given electrical input – the higher the figure, the louder the speaker. An 'A' indicates active operation.	● <b>IMPEDANCE (Ω):</b> Impedance, measured in Ohms, indicates how much resistance the speaker presents to an amplifier. As impedance decreases, demands on an amplifier increase.	● <b>BASS FROM (Hz):</b> The lowest frequency that a speaker can reproduce effectively.
● <b>FREE SPACE:</b> Speakers which should not sit close to walls	● <b>CLOSE TO WALL:</b> Speakers which should sit between 3 and 12cm from the rear wall.	● <b>FACTSBACK REFERENCE:</b> The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.		
● <b>ISSUE NUMBER:</b> The issue of HI-FI Choice in which an original review appeared.		<b>B BEST BUY</b> <b>R RECOMMENDED</b> <b>E EDITOR'S CHOICE</b>		

# Loudspeakers

**SPECIFICATIONS**

SIZE WxHxD (CM)     FLOORSTANDER     SENSITIVITY (dB/W)     IMPEDANCE (Ω)     BASS FROM (Hz)     FREE SPACE     CLOSE TO WALL     FACTSBACK NO.     ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	FACTSBACK NO.	ISSUE NUMBER
Acoustic Energy Aegis Centre	140	Good value centre-front speaker but a tad shut in and with a slightly obvious top end (price per speaker)	46,17,20		89	5	50	●			198
Acoustic Energy Aegis One	150	At a new low price, this has a very natural and transparent midband, erring a little on the dull side	19,36,5,24		87	6	40	●			187
Acoustic Energy Aegis Three	350	High value floorstander has deep and even bass and a smooth neutrality thereafter	19,90,25		90	5	22	●			198
Acoustic Energy AE120SE	500	Attractive styling and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load	18,97,28		89.5	10	25	●			199
Acoustic Energy AE520	1,000	Could be more neutral, but high-class build is reflected in a high-class sound. Very elegant too	21,98,30		91	3	25	●			190
ALR Jordan Note 7	2,500	A beguiling Anglo-German collaboration delivers metal-cone precision with fine dynamic range	25,107,32		92	4	25	●			196
ATC SCM10	1,000	A compact speaker with good transparency but lightweight bass	18,38,25,5		80	8	65		●		192
Audio Gem Emerald	540	Pretty, compact floorstander with lively if lightweight sound	18,94,21		87	6	40	●		1905	164
Audio Note AN-I/B	799	Light damping and local unevenness add some coloration, but don't spoil the speaker	38,58,25		93	8	25	●			110
Audio Note AN-E/B	1,299	Coherent, dynamic and transparent, with extended bass and high sensitivity – but ugly	36,84,28		94	8	20	●			106
Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47		88	8	28	●	●	1344	143
Audiovector C2	799	Elegant two-and-a-half-way has a big, full bandwidth sound, but midband seemed a little underdeveloped	19,106,27		90	4	20	●			190
Audiovector M2	1,399	High-class, smooth and slightly laid-back performer has driving bass. It's upgradable, too	20,102,30		89	4	22	●			180
AVI NuNeutron	500	A smooth and subtle though pricey sub-miniature, albeit with the inevitable limitations of the breed	14,27,23		86	4	50	●			190
AVI Positron	899	This 'mini-floorstander' is capable of great precision and delicacy, but in a rather small-scale way	17,5,74,24.5		85	6	40	●		2130	174
B&W DM302	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22		88	4	45		●	1778	156
B&W DM305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31		89	4	40	●		1908	164
B&W LCR6	349	Large, gutsy standmount intended for all-round AV use delivers fine performance as a stereo pair too	20,5,55,32		90	5	20	●			198
B&W CDM2SE	400	Beautifully styled and finished, respectable midband. Lacks definition towards frequency extremes	22,32,25		87	6	40	●			183
B&W 603 S2	550	Capable of being driven seriously loud, but the cautious balance seems less happy playing at low levels	23,5,87,29		91	4	22	●			193
B&W CDM1SE	600	A great looking standmount with one of the best midbands around, and a subtle blend of other qualities	22,37,29		88	5	40	●		2209	177
B&W CDM7	1,000	A combination of serious welly and physical elegance; but a basic lack of midband smoothness	22,97,29		90	4	22	●		2131	174
B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31		89	12	28	●			199
B&W Nautilus 804	2,500	The prettiest Nautilus has tremendous clarity and imaging but lacks the welly of bigger models	24,101,5,24.5		89	8	38	●			200
B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art, needs real power but gives real sound	39,111,55		91	8	34	●			183
B&W Nautilus 801	8,500	The 801 is a magnificent loudspeaker in nearly every respect, but it is one that likes to play loud	52,111,69		91	8	34	●			186
Blueround Minipod	249	The Minipod can show its competitors a thing or two about freedom from boxiness and looks fab	18,34,+17		91	4	50	●			193
Cabasse Farella 400	950	Exciting but very upfront-and-in-yr-face sound. High sensitivity, fine build and good dynamic drive	26,92,32		92	5	28	●			180
Carlsson OAS2.2	1,500	Ultra-discreet design integrates cleverly with the listening room. Impressively unboxy, but sounds a bit thin	41,54,37		90	8	20	●			195
Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,27-29		88	8	45	●			198
Castle Richmond	250	Pretty miniature with woven carbon fibre cone, forward balance is not ideal for surround channel applications	17,33,20		91	8	55	●			198
Castle Inversion 15	425	This striking looking standmount is a good all-rounder, commendably free from boxiness	19-22,42,25		91	4	30	●			193
Castle Kendal	500	A beautifully finished compact floorstander with a decidedly forward but communicative sound	17,76,20		86	6	45	●		2204	177
Castle Severn 2	539	Carbon fibre cone gives lovely, subtle midband but treble is a bit dull and bass a bit thumpy	21,84,25		87	8	30	●		2120	174
Castle Harlech	880	Handsome big sounding floorstander, great value and dynamic midrange	20,96,33		88	8	28	●		1820	160
Castle Inversion 100	1,975	Large semi-omni design with gorgeous Art Deco styling, sounds open but bass alignment is ill-tuned	26,5,111,45		91	8	20	●			195
Celestion 12i	119	Not without virtue, but the relentless enthusiasm and mid-band colorations can become wearing	19,31,21		88	6	45	●		2254	179
Celestion 23i	300	Cosmetically flawed, but the bottom end has fine get-up-and-go, and works well with dance tracks	24,86,27		89	6	30	●		2200	177
Celestion A Compact	600	Provided the room isn't too large and your tastes not too heavy, this is a charming little number	17,24,21		90	3	45	●			193
Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35		88	6	25	●		1910	164
Celestion A2	1,500	Full-scale, big sound from ultra-elegant floorstander. Smooth and slightly laid back presentation	24,93,39		89	6	22	●			180
Chario Syntar 100	249	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27		87	6	45	●		2020	170
Chario Hipor 1000	300	Classy looking standmount has a sweet, easygoing sound with fine midband voicing	18,35,28		87	4	45	●			187
Chario Constellation Lynx	550	Beautiful near-miniature is let down by a midband too laid back for its own good	20,36,26		87	3	40	●			190
Chario Academy Millennium 2	2,100	Price includes stands. A showy speaker that lives up to its own hype	22,53,35		90	4	55	●			190
Dali 606	400	A big bruiser at a tempting price. Sounds refined and polite, but also packs some punch	22,97,32		91	4	25	●		2121	174
Dali Royal Menuet MkII	400	Classy sub-miniature with a beautiful box and fine ingredients, but a little lacking in subtlety and excitement	16,26,18		87	3	50	●			190
Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55,5,175,51		90	4	40	●			198
Definitive Technology BP2X	595	Pricey but effective bi-polar surround speaker, with unusually high sensitivity	23,37,15		94	4	120	●			198
Definitive Technology BP2004	1,700	Pricey bi-polar floorstander has a fine midband, let down by its built-in powered subwoofer	19,104,31		91	5	28	●			198
Dynaudio Audience 5	400	Follows the Dynaudio tradition for fine midband transparency, but the overall timbre is a bit thin	20,31,26		85	4	40	●		2205	177
Dynaudio Audience 40	400	Classy engineering content creates a winning combination of neutrality, dynamic range and involvement	17,28,25		87	4	40	●			190
Dynaudio LR/C 120	439	Slim centre and front standmount, has an evenhanded but rather laid back balance but lacks drive	16,5,57,31		89	5	25	●			198
Dynaudio Audience 50	577	This standmount doesn't look big, but sound quality can match many models at twice the price	20,33,25		86	4	30	●		2122	174
Dynaudio Audience 70	1,100	A highly competent and neutral speaker, but pricey for vinyl finish, and doesn't quite drag you into the music	20,5,93,25		88	6	20	●			199
Dynaudio Contour 1.8 MkII	1,842	Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	21,95,29		85	4	20	●		1986	167
ELAC CL102 II	599	Chunky floorstander with classy drivers has a neutral, slightly 'shiny' character, and could have more punch	20,95,28		88	9	23	●			199
Elac CL 310i Jet	800	It's pricey, and you can buy better performance for the money. Small speaker, good sound	12,3,20,8,28.2		86	4	42	●			191
Eltax Liberty 3+	150	Bright, bassy, laid back and attractively evenhanded, but dynamically challenged. Big box for your dosh	20,5,38,34		86	4	25	●			187
Eltax Linear Response	249	A curiously dumpy shape, but smooth, laid-back performer is easy on the ears, with fine tonal accuracy	25,35,32		85	4	40	●		2201	177
Epos ES12	499	High quality luxury standmount has great midband and stereo imaging	20,38,25		85	8	45	●		1823	160
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35		88	6	22	●		1346	143
Gale Zi	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27		88	7	40	●		2021	170
Heybrook Prima 2	159	Great openness, speed and timing. Sounds fresh and vital, though sometimes lacks scale and weight	20,29,18		87	6	50	●		2256	179
Heybrook Heylette	200	Attractive traditional-style near-miniature with classy main driver now has fine overall balance to match	19,5,30,22		88	4	45	●			187

**CONTINUED**

# Loudspeakers

### SPECIFICATIONS

ISSUE NUMBER  
FACTSBACK NO.  
CLOSE TO WALL  
FREE SPACE  
BASS FROM (Hz)  
IMPEDANCE (Ω)  
SENSITIVITY (dB/W)  
FLOORSTANDER  
SIZE WxHxD (CM)

**STATUS**

PRODUCT	(£)	COMMENTS								
<b>F</b> Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	●	94	4	30	●	193	
<b>F</b> Heybrook Heylios	389	Great all-round performance in a pretty package at a sharp price	24,36,27	●	87	6	25	●	1912 164	
Heybrook Heylo	439	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	●	88	8	30	●	1658 152	
Heybrook Ultima	649	Has the bass wallop to justify its dual hi-fi/home cinema roles, but doesn't excite	22,97,29	●	89	6	45	●	2126 174	
<b>F</b> Heybrook Duet	750	Looks slightly old-fashioned, sounds a bit coloured but its fine timing and liveliness serve music well	23,43,30	●	88	11	27	●	199	
Heybrook Octet	1,800	Good-looking but pricey floorstander with novel drivers and a fine ceramic-enclosure midband	24,97,31	●	90	6	25	●	180	
<b>F</b> Indigo Three	500	Cute 'n' chunky standmount is an entertaining communicator. Great fun, despite some sonic weirdness	23,30,53,2	●	86	17	24	●	199	
Infinity Delta 60	700	Striking and massive floorstander, lots of speaker for the price, but seems a victim of its own complexity	16-29,115,41	●	90	4	25	●	183	
Infinity Reference Ii	150	Although not to our tastes, this is a competent speaker, and decent material value	20,34,20	●	89	6	50	●	1403 144	
Jamo BX100A	350	Offering a cracking output for their size, these rock boxes can be a bit bright but have decent bass	31,5,54,28	●	91	8	40	●	1758 155	
Jamo Classic 8	400	A lot of speaker for the money; good when playing quietly, but boom'n'tizz character sounded crude	22,90,29	●	90	4	28	●	1659 152	
Jamo Cornet 195	350	Loads of bass, should have plenty of yooof-appeal – it looks the business, and is priced attractively	20,5,91,31	●	90	3	26	●	183	
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	Imaginative styling keeps the front view super slim yet still it packs a punch. Glass top is a nice touch	22,94,37	●	88	3	40	●	2126 174	
<b>F</b> JBL LX2	250	Invigorating, if a touch crude, this good-hearted speaker reproduces music with enthusiasm	22,40,27	●	87	8	40	●	2022 170	
JBL Ti200	400	Very substantial standmount knows how to rock and roll, but can sound uncouth on more delicate material	21,41,30	●	92	5	40	●	193	
<b>F</b> JBL L20	700	Pricey, 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 SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, with a fun sound, enlivened by a juicy bass thump	17,51,31	●	86	8	40	●	2127 174	
<b>F</b> JBL L40	1,000	Classic, large, three-way standmount is full of vim and vigour, with a superb sense of balance	30,65,31	●	88	4	23	●	1976 167	
JBL 4312 II	1,000	Crude but startlingly effective dynamics. The original party animal knows just how to rock'n'roll	36,60,30	●	94	4	25	●	190	
<b>F</b> JBL SVA 2100	1,250	Monstrously large and brutish styling, goes very loud as well as deep. Fine focus but some boxiness	37,114,52	●	91	8	<20	●	180	
<b>F</b> 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	
JBL LX70	550	Bassmeister supreme, shame the rest doesn't match up. Fine sensitivity but an itchy, scratchy treble	26,5,94,30	●	91	4	33	●	183	
JMLab Tantal 507	295	Competent all-rounder, this compact standmount has a good heart and sweet treble, but sounds a bit small	21,58,27	●	93	4	40	●	193	
<b>F</b> JMLab Tantal 515	495	Lively and open if bright. Sound is entertaining and informative, but presentation is nondescript	20,94,26	●	92	5	32	●	183	
<b>F</b> JMLab Cobalt 815	999	Hefty real-wood floorstander has a slight 'boom'n'tizz' character but delivers big speaker grip and dynamics	22,100,31	●	90.5	9.5	22	●	199	
JMLab Spectral 909.1	1,375	Multi-driver array in a large and very substantial enclosure. Good scale but lacks delicacy and sweetness	27,107,35	●	90	4	20	●	180	
JMLab Electra 915	1,795	Fine headroom and bass, and classy engineering too, but also a tricky amp load which lacks delicacy	26,5,106,36	●	92	4	20	●	195	
<b>F</b> JMLab Mezzo Utopia	7,250	Looks good and sounds even better. A genuinely big speaker with fantastic coherence	35,115,47	●	92	4	30	●	186	
<b>F</b> JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,175	●	86	8	50	●	1781 156	
<b>F</b> JPW Gold Monitor	80	More informative than Mini Monitor – but fiercer, too	18,27,175	●	86	8	50	●	1782 156	
<b>F</b> JPW ML510	130	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 ML910	330	Loads of speaker for the money, plenty of headroom and loudness capability, but sounds dull	23,104,30	●	91	4	43	●	183	
<b>F</b> 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	●	2031 139	
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 170	
<b>F</b> JPW Ruby 4	1,000	Twin metal-cone main drivers improve the dynamic performance and bass extension, with little sacrifice	22,94,26	●	88	8	25	●	2132 174	
<b>F</b> KEF Coda 7	129	Lovely open voice reproduction, but bass could be more taut and build tougher	18,30,23	●	88	6	50	●	1783 156	
<b>F</b> KEF Cresta 2	149	A good looking/value package but sonically disappointing, and no match for the Q15	20,5,37,24	●	91	4	40	●	195	
<b>F</b> KEF Coda 8	189	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	●	86	6	28	●	1784 156	
<b>F</b> KEF Q15	200	Beautifully balanced and voiced standmount, but a potentially tricky amplifier load at high frequencies	20,5,31,27	●	90	2.5	30	●	187	
<b>F</b> KEF Coda 9	299	Uneven budget three-way floorstander with poor bass definition	20,86,28	●	89	6	30	●	1785 156	
KEF RDM One	499	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24	●	88	6	70	●	1913 164	
KEF Q65	799	Dumpy-looking three-way has loads of bass and a laid-back midband; goes loud but lacks poise and impact	23,95,31	●	92	2.5	25	●	190	
KEF RDM Three	1,500	Definitely a speaker aimed at long-term satisfaction rather than immediate impressiveness. Nice	24,100,27	●	90	4	40	●	189	
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass	23,103,34	●	89	4	30	●	1987 167	
<b>F</b> Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24	●	89	8	20	●	1405 148	
<b>F</b> Keswick Audio Torino	999	Good value, lively contender with distinctive styling. Goes loud and deep but could be smoother	18-26, 93,28	●	90	4	20	●	1977 167	
<b>F</b> Linn Kan	295	Great bass discrimination from size, ensuring a very informative, if slightly shut-in experience	19,31,19	●	86	4	45	●	187	
<b>F</b> Linn Keilidh Passive	750	Stunning timing and coherence, awesome bass drive	20,83,28	●	87	4	22	●	1552 138	
<b>F</b> Linn Kaber Passive	2,000	Dry, bright balance emphasises dynamics and transients, but can sound unforgiving	20,90,28	●	87	4	25	●	118	
<b>F</b> Living Voice Auditorium	1,500	Pretty, compact floorstander has wonderful coherence, high sensitivity and fine dynamic integrity	21,5,98,29	●	91	4	25	●	180	
<b>F</b> Living Voice Avatar OBX-R	4,000	Discreet but extremely fine design with external crossover and an affinity with valves	21,5,104,27	●	89	8	45	●	196	
<b>F</b> Magnat Vector 77	450	Tall, dark and a lot of speaker for the money. Beautiful balance, but lacking in subtlety and transparency	22,115,29	●	89	5	30	●	183	
<b>F</b> Magnat Vintage 720	1,200	Slightly crude in some respects but lots of heart, fine scale, decent dynamic coherence and integrity	29,113,32	●	88	4	20	●	180	
<b>F</b> Mission 700	130	A lot of speaker for the money. Good bass weight and extension and goes loud with ease	18,34,26	●	87	8	40	●	2257 179	
<b>F</b> Mission 771	170	Beautiful standmount miniature has a delightfully well balanced and voiced sound, and real wood finish	17,31,22	●	86	7	45	●	187	
<b>F</b> Mission 77C	199	A good centre-front match for 77-series, the triple tweeter might be a curiosity, but voicing is very good	42,17,21	●	91	4	100	●	198	
<b>F</b> Mission 77DS	199	Neat flush-mount surround speaker has no bass but a smooth midband and nicely restrained treble	34,26,12	●	92	4	120	●	198	
<b>F</b> Mission 750LE	250	Fabulous cosmetics and a great midband carry the day, though size will out and bass is inevitably limited	17,28,27	●	86	7	45	●	2203 177	
<b>F</b> Mission 773e	400	Beautifully designed slim floorstander could be more neutral but still delivers an all-round entertaining sound	17,5,88,26	●	92	4	30	●	193	
<b>F</b> Mission 774	500	Gorgeous floorstander is an entertaining communicator, despite some balance oddities (bright treble)	18,95,31	●	90	4	40	●	183	
<b>F</b> Mission 752 Freedom	578	A beautifully judged compromise in the art of combining presentation with a decent sound	20,90,25	●	89	8	45	●	2123 174	
<b>F</b> Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	16,5,82,28	●	86	9.5	25	85	●	199
<b>F</b> Mission 753 Freedom	798	Great styling. New, more restrained tweeter reveals fine midband dynamics	21,90,31	●	89	4	40	●	1914 164	
Mission 754 Freedom 5	1,298	Tall but exceptionally elegant floorstander gives fine midband projection; goes loud but limited deep bass	22,111,31	●	88	4	40	●	1981 167	
<b>F</b> Monitor Audio 702PMC	700	A good all-round standmount with intimate midband focus	20,40,25	●	87	8	30	●	2128 174	
<b>F</b> Monitor Audio MA703PMC	800	Lovely but pricey floorstander has upfront, coherent, 'shiny' sound	20,89,27	●	88	8	50	●	1826 160	
<b>F</b> 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	●	1915 164	
<b>F</b> 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	
<b>F</b> Musical Technology PM15	450	A subtle, understated but very involving example of the 'classic' luxury-finish compact standmount	20,41,27	●	88	5	38	●	183	
<b>F</b> Musical Technology Condor	1,000	Lots of clever ideas in a floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	●	85	4	28	●	2134 174	
<b>F</b> Musical Technology Falcon	680	Big speaker has a big but also surprisingly smooth and civilised sound. Fine material value too	33,117,30	●	89	4	22	●	190	
<b>F</b> Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	1916 164	
<b>F</b> Naim Credo	1,060	Involving sound, but rather forward and cold. Good clarity, but some coloration and a lack of richness	24,89,30	●	88	8	28	●	180	
<b>F</b> Naim SBL Passive	1,970	Lively and punchy – smoother but more upfront than before	27,89,27	●	88	6	25	●	1352 143	
<b>F</b> Naim NBL	6,648	Elegant, large floorstander is exceptionally informative with an awesome dynamic range and dry, forward balance	29,116,47	●	89	4	20	●	200	
<b>F</b> Neat Critique 2	445	Contemporary standmount has a clean, crisp sound with lovely natural midband voicing	22,32,24	●	86	6	50	●	183	
<b>F</b> Neat Mystique Mk2	575	This elegant package delivers a fine overall sound quality; some might find the top end too insistent	20,86,18	●	85	6	23	●	2211 177	
<b>F</b> Neat Elite	1,195	A highly entertaining all-rounder, has a planar tweeter that sounds sweet, if not particularly smooth	20,88,18	●	88.5	6	25	●	195	

**CONTINUED**

# Loudspeakers

## S P E C I F I C A T I O N S

SIZE WxHxD (CM)    SENSITIVITY (db/W)    IMPEDANCE (Ω)    BASS FROM (HZ)    FREE SPACE    CLOSE TO WALL    FACTS/BACK NO.    ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SIZE WxHxD (CM)	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	FACTS/BACK NO.	ISSUE NUMBER	
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	●	●	1988	167	
<b>NHT Super One</b>	<b>250</b>	<b>A fine compromise between size and performance, sensitivity and hence loudness capability is modest</b>	<b>18.5,29.5,23</b>	<b>85</b>	<b>8</b>	<b>30</b>	●	●		<b>170</b>	
<b>NHT 1.5</b>	<b>400</b>	<b>This compact standmount sounds much bigger than it has any right to. Good timing and communication skills</b>	<b>18,42,19-26</b>	<b>85</b>	<b>6</b>	<b>40</b>	●	●		<b>177</b>	
<b>NHT Super Two</b>	<b>550</b>	<b>Black and shiny compact three-way floorstander has marvellously even balance and good coherence</b>	<b>18.5,100,26</b>	● <b>87</b>	<b>8.5</b>	<b>25</b>	●	●		<b>199</b>	
Opera Prima	495	Good-looking hardwood enclosure, plus fine mid and treble, but less satisfactory bass	19,34,31	90	4	40	●	●		190	
Origin Live Conqueror	1,650	Chunky floorstanding three-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	● 88	8	30	●	●	1989	167	
Orelle Swing	1,200	A superb example of what an essentially small loudspeaker can do, with bags of brio and enthusiasm	18,101,28	● 87	8	45	●	●		195	
<b>PMC TB15</b>	<b>430</b>	<b>Pro-audio version of TB1, cheaper because of black paint finish</b>	<b>20,41,30</b>	● <b>87</b>	<b>6</b>	<b>40</b>	●	●		<b>2207 177</b>	
<b>PMC TB1</b>	<b>482</b>	<b>A classy, laid-back performer that likes going loud and loves the bass guitar</b>	<b>20,40,31</b>	● <b>87</b>	<b>8</b>	<b>45</b>	●	●		<b>1830 160</b>	
<b>PMC LB1</b>	<b>999</b>	<b>Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic</b>	<b>17.5,53,26</b>	● <b>87</b>	<b>6.5</b>	<b>40</b>	●	●		<b>199</b>	
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	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	● 91	4	22	●	●	1831	160	
Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35	92	4	25	●	●		198	
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	
Polk RTE 1000p	1,300	Tall elegant tower with built-in powered bass 'subwoofer' that needs using with discretion. Bright but engaging	20,110,35	● 91	4	25	●	●		198	
ProAc Response 2.5	2,700	For aspirant high-enders looking for seriously good boxes, this speaker should be first port of call	22,107,25	● 86	8	30	●	●	1457	149	
ProAc Studio 125	1,000	Pretty if pricey compact floorstander with a beautifully natural and neutral midband, and some bass thump	20,94,28	● 87	8	28	●	●		192	
QLN Signature	1,000	Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	27,37,36	● 83	4	25	●	●		167	
<b>Rega Kyte</b>	<b>198</b>	<b>Has splendid timing and coherence, sounds very explicit and informative</b>	<b>19,31,19</b>	● <b>87</b>	<b>8</b>	<b>50</b>	●	●		<b>114</b>	
<b>Rega EL8</b>	<b>298</b>	<b>Kyte drivers in compact floorstander give more bass but less coherence</b>	<b>17,72,20</b>	● <b>86</b>	<b>8</b>	<b>55</b>	●	●		<b>122</b>	
<b>Rega Jura</b>	<b>450</b>	<b>Beefy sounding, chunky floorstander sounds very 'direct coupled' to the music, if a touch 'boom'n'tizz'</b>	<b>22.5,92.5,26</b>	● <b>90</b>	<b>5</b>	<b>25</b>	●	●		<b>193</b>	
<b>Rega ELA Mk II</b>	<b>498</b>	<b>Pretty and smooth, the latest incarnation has a superb midband and excellent communicative skills</b>	<b>30,80,20</b>	● <b>87</b>	<b>8</b>	<b>40</b>	●	●	1578	139	
<b>Rega XEL</b>	<b>1,040</b>	<b>Looks and sounds great: balance bright but even, with delightful coherence and timing</b>	<b>20,82,30</b>	● <b>89</b>	<b>6</b>	<b>40</b>	●	●	1083	132	
<b>Rehdeko RK 115a</b>	<b>1,700</b>	<b>Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic coherence</b>	<b>34,42,27</b>	● <b>95</b>	<b>8</b>	<b>55</b>	●	●		<b>1982 167</b>	
<b>RMS Revelation Series 1</b>	<b>1,299</b>	<b>Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance</b>	<b>20,99,24</b>	● <b>81</b>	<b>8</b>	<b>22</b>	●	●		<b>1983 167</b>	
Roksan ROKone	595	Large standmount 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 QJ3X Black	995	Innovative low-line, two-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	● 84	8	20	●	●	1979	167	
<b>Royd Minstrel</b>	<b>275</b>	<b>Not much welly or loudness, but fine coherence and timing; a bit bright</b>	<b>18,69,12</b>	● <b>86</b>	<b>8</b>	<b>30</b>	●	●		<b>1167 135</b>	
<b>Royd Doublet</b>	<b>485</b>	<b>Great value compact floorstander: lively and very informative, if a little uneven</b>	<b>18,93,19</b>	● <b>90</b>	<b>4</b>	<b>28</b>	●	●		<b>1835 160</b>	
<b>Royd The Sorcerer</b>	<b>595</b>	<b>Extremely musical and communicative speaker that's fun to listen to. Aesthetics could be better, though</b>	<b>20,31,18</b>	● <b>86</b>	<b>8</b>	<b>35</b>	●	●		<b>139</b>	
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 Epilogue	269	Beautifully finished miniature with a lively balance and plenty of charm; best suited to smaller rooms	17,29,23	87	8	47	●	●		183	
Ruark Sceptre	599	'Traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by rather wayward sound balance	21,38,31	87	8	40	●	●	2129	174	
<b>Ruark Talisman II</b>	<b>749</b>	<b>Less ideologically committed than some, strength lies in fine all-round coherence</b>	<b>23,84,32</b>	● <b>88</b>	<b>8</b>	<b>30</b>	●	●		<b>118</b>	
<b>Ruark Crusader</b>	<b>1,599</b>	<b>Elegant luxury three-way with wonderfully even-handed, if rather laid-back balance</b>	<b>24,94,31</b>	● <b>85</b>	<b>6</b>	<b>22</b>	●	●	1990	167	
Ruark Equinox	1,849	The primary strength of this speaker is its ability to vanish behind the music	25,88,34	● 88	6	45	●	●	1227	140	
<b>Ruark Excalibur</b>	<b>7,000</b>	<b>A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom</b>	<b>30,125,53</b>	● <b>90</b>	<b>4</b>	<b>30</b>	●	●		<b>186</b>	
Sequence 400	329	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	86	8	45	●	●	1917	164	
Shahinian Arc	1,875	Occasionally wonderful, small, floorstanding omni directional design: 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	●	●	1918	164	
Snell K.5	795	Classy AV-ready stand mount is very solidly engineered. Sound is neutral but lacks excitement	22,46,30	87	6	25	●	●		190	
Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration.	28,117,50	● 91	6	25	●	●		194	
Solloquy SM 2A3	1,095	Fine match in balance, coherence, transparency and speed. Intended for use with Cary CAD 2A3SE	35.5,19,30	91	8	45	●	●		196	
Sonus Faber Concertino	599	A beautifully neutral loudspeaker in a beautiful Italian suit of clothes. Classy, if quite pricey	21,32,29	87	5	30	●	●		193	
South Coast Speakers Lancelot	895	Pretty compact standmount has nice ribbon tweeter but sounds a bit soft and lacks dynamic vigour	19,36,26	84	8	45	●	●		199	
<b>Spendor 2030</b>	<b>599</b>	<b>Discreet slimline floorstander with delicately coherent, laid-back sound</b>	<b>18,89,27</b>	● <b>87</b>	<b>8</b>	<b>30</b>	●	●		<b>1836 160</b>	
System Audio 1130	499	Super-slim, super-smooth, involving experience, but not ideal if you like your bass deep and loud	3,100,21	● 89	4	43	●	●		183	
System Audio 1150	749	Pricey but persuasive, sonic subtleties sneak up to confound a dodgy first impression. Super-slim	16,105,26	● 90	4	30	●	●		190	
<b>Tannoy Mercury M1</b>	<b>120</b>	<b>Sounds much bigger and expensive than it is. Solid, tuneful bass, wide open soundstage, excellent imaging</b>	<b>17,30,20</b>	● <b>87</b>	<b>8</b>	<b>50</b>	●	●		<b>179</b>	
<b>Tannoy Mercury M2</b>	<b>140</b>	<b>A fine all-rounder with big box and deep bass for the price; could be sweeter and tighter</b>	<b>20.5,38,28</b>	● <b>87</b>	<b>8</b>	<b>25</b>	●	●		<b>169</b>	
Tannoy R1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22	86	4	30	●	●		187	
<b>Tannoy Saturn S6C</b>	<b>200</b>	<b>A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver</b>	<b>38,21,29</b>	● <b>89</b>	<b>6</b>	<b>25</b>	●	●		<b>198</b>	
<b>Tannoy Mercury M3</b>	<b>230</b>	<b>Good-looking floorstander; very neutral and even-handed, with fine midband but weak dynamics and drive</b>	<b>20.5,87,28</b>	● <b>87</b>	<b>7</b>	<b>20</b>	●	●		<b>2025 170</b>	
<b>Tannoy Revolution R2</b>	<b>350</b>	<b>Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back</b>	<b>17,94,24</b>	● <b>90</b>	<b>4</b>	<b>20</b>	●	●		<b>193</b>	
<b>Tannoy Saturn S6LCR</b>	<b>400</b>	<b>A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver</b>	<b>21,38,29</b>	● <b>89</b>	<b>6</b>	<b>25</b>	●	●		<b>198</b>	
<b>Tannoy Saturn S6</b>	<b>500</b>	<b>Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension</b>	<b>21,89,29</b>	● <b>91</b>	<b>4</b>	<b>20</b>	●	●		<b>198</b>	
Tannoy Revolution R3	550	Handsome real-wood floorstander does a decent job, but lacks the evenness of its smaller R2 brother	18.5,103,28	● 89	8.5	28	●	●		199	
Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	16-24,85,23	● 87	6	26	●	●		167	
Tannoy D500	1,999	Plenty of muscle and stereo, but short of poise and delicacy. Hard work for amps	31,93,34	● 91	6	20	●	●	1355	143	
<b>Tannoy Westminster TW</b>	<b>6,600</b>	<b>These awesome horn-loaded speakers are remarkably controlled and impressive</b>	<b>large</b>	● <b>99</b>	<b>8</b>	<b>38</b>	●	●		<b>C93</b>	
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	● 85	8	25	●	●	1666	152	
Triangle Cometes	359	Communicative standmount has great midband dynamics, but the very bright top end might be intrusive	22,40,29	91	4	42	●	●		193	
<b>Triangle Zephyr II</b>	<b>599</b>	<b>Loads of fun. Dramatic dynamics and righteous tuning will give any hi-fi system a wake-up call</b>	<b>22,94,29</b>	● <b>91</b>	<b>4</b>	<b>25</b>	●	●		<b>190</b>	
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	
Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	● 104	4	50	●	●		191	
Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid-back but very charming, and musically literate	17,97,30	● 88	7.5	25	●	●		199	
<b>Wilson benesch Bishop</b>	<b>20,000</b>	<b>Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too</b>	<b>25,161,561</b>	● <b>89</b>	<b>4</b>	<b>S20</b>	●	●		<b>189</b>	
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 Diamond 7.2 Anniversary	200	Lively and exuberant, but a tad untidy with it; can sound a bit cold and hard	19,29,5,24	88	4	40	●	●		187	
Wharfedale Valdsu 400	200	Very loud with a minimum of amplification, but the sound is thick and uneven, with a heavy upper bass	25,80,26	● 91	8	30	●	●	1414	148	
<b>Wharfedale Valdsu 500</b>	<b>300</b>	<b>These rock boxes can move plenty of air, albeit not as subtly as alternatives</b>	<b>25,108,26.5</b>	● <b>91</b>	<b>4</b>	<b>40</b>	●	●		<b>1758 155</b>	
Zingali Overture 2S	1,975	Gorgeous, pricey, imposing standmount has a horn tweeter of great delicacy. Impressively weighty	30,57,38	90	8	25	●	●		195	
SUBWOOFERS											
Acoustic Energy AE108S	299	Lots of loud subwoofer for your money, though ultimately more film than music oriented	50,42,43			20	●	●	2247	179	
B&W ASW1000	499	(Active) Very competently engineered all round, and goes (unnecessarily) very loud	54,47,48		A	20	●	●	2248	179	
JB&W SW1000	499	Bulky heavyweight is a high quality item, able to generate more bass output than music is likely to need	54,47,50	● A		A20	●	●		198	

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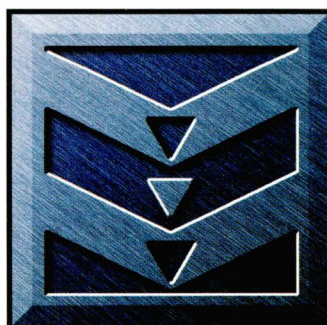
# Loudspeakers

STATUS

**SPECIFICATIONS**

ISSUE NUMBER  
FACTSBACK NO.  
CLOSE TO WALL  
FREE SPACE  
BASS FROM (HZ)  
IMPEDANCE (Ω)  
SENSITIVITY (db/W)  
FLOORSTANDER  
SIZE WxHxD (CM)

PRODUCT	(£)	COMMENTS	PRICE	IMPEDANCE	SENSITIVITY	BASS FROM	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER	FACTSBACK NO.
<b>R</b> JPW SW60	349	A real heavyweight, sounds clean and transparent, if perhaps a little understated. Usefully flexible	55,47,39	●	20	●	●	●	2249	179
KEF Model 30B	499	(Active) Commendably discreet with good sense of timing but limited extension	38,5,37,43	●	A	45	●	●	1736	154
<b>R</b> M&K MX70	900	(Active) Justifies cost and belies its diminutive size, with an agility that makes sense of the toughest material	25,5,46,35	●	A	25	●	●	2250	179
Mission 7AS2	399	Ugly if very effective at supplying very low bass, but filter could do with more flexibility higher up	56,30,31	●	<20	●	●	●	198	
<b>R</b> REL Q50	375	(Active) Genuinely deep, clean bass from an attractively compact and cost-effective package	40,41,42	●	A	20	●	●	2251	179
Soliloquy S10	1,050	(Active) Pretty subwoofer, cosmetically matching SM 2A3 speakers, pricey and mid-bass a bit strong	51,30,5,46	●	A	25	●	●		196



## Stands & Supports

Hi-fi supports are more important than you might imagine – they can have very subtle effects on the sound of your system! There are two kinds of support: those for equipment and those (stands) for loudspeakers. Equipment supports keep vibrations and resonances from affecting electronic components, while speaker stands hold enclosures stock-still and ensure they are at the correct height for your ears. Equipment supports may be rigid affairs fabricated from steel or more exotic materials; or they may have a form of suspension. Speaker stands come in a variety of sizes and styles to suit different models, and vary between open-frame and solid-pillar types. Always check with speaker and electronics manufacturers to see which supports they recommend.

**KEY TO SPECIFICATIONS**

- **HEIGHT (cm):** How tall is your support?
- **TOP PLATE SIZE (cm):** Dimensions of top surface on stand or equipment support.
- **FILLABLE:** Some speaker stands can be mass-loaded with sand or lead-shot to improve sound.
- **WELDED:** The better stands and supports are welded together rather than just bolted.
- **NUMBER OF SHELVES:** The number of tiers on an equipment rack or support.
- **SHELF TYPE:** The material from which shelves are made. Wood generally means Medium Density Fibreboard (MDF).
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
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**B** BEST BUY

**R** RECOMMENDED

**E** EDITOR'S CHOICE

# Stands & Supports

STATUS

**SPECIFICATIONS**

ISSUE NUMBER  
FACTSBACK NO.  
SHELF TYPE  
NUMBER OF SHELVES  
WELDED  
FILLABLE  
TOP PLATE SIZE (cm)  
HEIGHT

PRODUCT	(£)	COMMENTS	PRICE	HEIGHT	TOP PLATE SIZE	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER	FACTSBACK NO.	
<b>EQUIPMENT SUPPORTS</b>												
<b>R</b> Aavik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47	●	●	●	4	Wood	193		
Alphason GR 17/17-AS	275	Great looks but sound can be bettered for the money	36	60,39	●	●	●	4	Glass	181		
Apollo Soprano	275	Uninspiring looks and sonic performance that can be beaten at this price	68.5	45.5	●	●	●	4	Glass	193		
Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6	●	●	●	4	Wood	193		
<b>R</b> Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43	●	●	●	4	MDF	193		
<b>R</b> Avid Isosshelf	1,100	An enthusiasts equipment support stand free from coloration if a little fiddly to set up	87.5	48	●	●	●	5	MDF	193		
<b>R</b> Elemental Isotube x 4/Ref	1,199	Blockbusting size and build. Super sound quality	92	45,49	●	●	●	4	Marb	181		
<b>R</b> Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49	●	●	●	4	Glass	193		
Fi-Rax R4	399	Lively, exuberant sound, slightly weak bass			●	●	●	5	Glass	1633	151	
<b>R</b> Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel – made a spectacular impression on audition	70	52,34	●	●	●	3	Glass	1952	166	
Ixos Deadrock 704	250	Looks unassuming but sound is full and inviting		46,39	●	●	●	4	Resin	181		
<b>R</b> Mana Acoustics Ref. Table	350	King of its type: angle iron, chipboard and glass combine to make a significant difference to sound quality	56	49,39	●	●	●	1	Glass	147		
<b>R</b> Mana 5 Tier Sound Table	600	Infinitely upgradeable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth	91	49, 39	●	●	●	5	Glass	1633	151	
<b>R</b> Optimum Int 2000 OPT490	299	25kg stand with shelves between variable-height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40	●	●	●	4	Glass	1953	166	
<b>R</b> Optimum Int 2000 OPT660	349	Glitzy style isn't reflected in sound, which is wholesome	82	60,52	●	●	●	5	Glass	181		
Projekt Furniture A4	215	An elegant support stand that blends in to any home environment with a laid-back sound	56	48	●	●	●	4	Wood	193		
<b>R</b> Quadraspire Q4	250	Easy to live with, tonally neutral	54	40,49	●	●	●	4	MDF	1633	151	
<b>R</b> Sound Organisation Z560	160	Welded and bolted members give structural integrity. While performance is not up with the best, it's great value	90	46,36	●	●	●	5	Wood	1954	166	
Sound Organisation Z545	160	Budget price and great looks make this a great value stand	73	46	●	●	●	4	Glass	193		
<b>R</b> Soundstyle X100	230	Looks lovely, sounds lively but slightly bright	64	49,28	●	●	●	4	Glass	181		
Soundstyle Radius SR100	280	Stylish looks and a smooth sound	63.5	49.5	●	●	●	4	Glass	193		
<b>R</b> Soundstyle Select 6105	290	Respectable sonics: structurally solid and smart	78	43,36	●	●	●	5	Glass	1633	151	
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights. Delivers with classical material	82	48,27	●	●	●	4	Wood	1955	166	
Stands Unique Sound Tower	289	Wooden uprights combine with glass shelves to provide a fresh, forward sound, but bass could be quicker	81	72,42	●	●	●	5	Glass	1633	151	
<b>R</b> Standesign Design 4	190	An all-in-one support at a budget price with good sonic performance	88.5	50.8	●	●	●	4	Glass	193		
<b>R</b> Target B5	175	Free of colorations, fine grip and good value	81	49,36	●	●	●	5	Wood	1633	151	
<b>R</b> Townshend Seismic Stand	1,245	It's big, it wobbles and it's pricey. But this is the ultimate equipment support	72	58,45	●	●	●	3	Wood	181		
<b>R</b> Wilson benesch Asside	520	Sounds even better than it looks. And it looks wonderful	72	37,50	●	●	●	4	Wood	181		
<b>SPEAKER STANDS</b>												
Alphason HDS	85	A reasonable stand with a smooth but rather bland sound balance. Good finish options	45-60	15.5,15.5	●	●	●				189	
Apollo Olympus	75	A popular stand and a decent performer, but unremarkable by today's standards	40-60	15,12.5	●	●	●				189	
Apollo AZ6	80	Fine engineering value, but sound is unexceptional and top-plate small	66	15,13	●	●	●				159	
<b>R</b> Atacama BD21	55	Good looking and good value, but doesn't match the SE24's sound quality	56	15,17	●	●	●				159	
<b>R</b> Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15,17	●	●	●				189	
<b>R</b> Atacama SE24	70	Stands out from the budget crowd because of the consistency and overall quality of its performance	61	19,5,17	●	●	●				1373	146
<b>R</b> Custom Design R/S 300	70	Combining strong aesthetic and sonic appeal at a popular price point, this is a good stand all round	40.6-60.9	15,15	●	●	●				189	
<b>R</b> Elemental Isotube S2se	599	Stands of distinction, able to free the speaker's sound from its box in a way budget stands simply can't	61	23,27	●	●	●				189	
<b>R</b> JPW HS1	120	A purposeful stand, a touch dry-sounding but particularly strong with bass. Great for rock and dance music	61	19,21	●	●	●				189	
Mana Soundframes	125	For use under floorstanders and equipment racks, these make music effortless and natural. Can be stacked	5		●	●	●				1373	146
<b>R</b> Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than almost anything below £150	50-100	19,22	●	●	●				189	
<b>R</b> RMS/Stands Unique Vivus	349	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A	●	●	●				159	
Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33.5,24	●	●	●				189	
Sound Organisation Z524	69	A coherent-sounding stand with particular strengths in the midband, though quality drops at the frequency extremes	61	16,17	●	●	●				189	
<b>R</b> Stands Unique HP	220	Real wood disguises high-performance tuned technology	59	22,23	●	●	●				159	

CONTINUED

# Stands & Supports

STATUS

PRODUCT	(£)	COMMENTS	SPECIFICATIONS					
			TOP PLATE SIZE (cm)	FILLABLE WELDED	NUMBER OF SHELVES	FACTSBACK NO.	ISSUE NUMBER	
R Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack	53	15,21	●	●	1373	146
R Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than-audiophile-oriented, twin-column design	60	15,15	●	●	1373	146

SPECIFICATIONS

TOP PLATE SIZE (cm) FILLABLE WELDED NUMBER OF SHELVES FACTSBACK NO. ISSUE NUMBER

## Tonearms



Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). However, hard-core vinyl fans should invest in a more expensive separate motor unit with specialist tone-arm – the only way to make the most of vinyl LPs. It is essential to achieve operational synergy between such components, so this is one area of hi-fi where the skills of a knowledgeable dealer are invaluable. The quality of a tonearm's construction and design affect sound quality significantly. There are three basic arm designs listed in the key, and each has strengths, but pivoted designs are the most popular, being usually the most practical and affordable.

KEY TO SPECIFICATIONS

- **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 the arm from bearing to cartridge mounting.
- **ADJUSTABLE HEIGHT:** Important for accurate cartridge set-up.
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**B** BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

# Tonearms

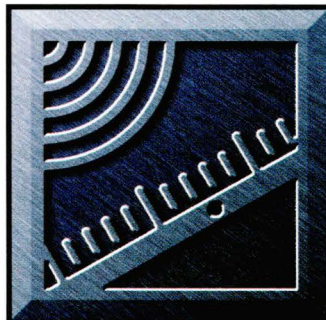
STATUS

PRODUCT	(£)	COMMENTS	SPECIFICATIONS						
			PARALLEL TRACKING	EFFECTIVE MASS	PIVOTED	UNI-PIVOT	ADJUSTABLE LENGTH (cm)	FACTSBACK NO.	ISSUE NUMBER
R Kuzma Stogi Ref	1,250	Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	High		●				79
R Linn Ekos	1,500	Superb, state-of-the-art design which builds significantly on predecessor's strengths	Medium		●		229	●	67
R Moth/RB250	109	The ultimate budget arm? Refined, sweet, detailed and natural	Low		●		237	●	60
R Rega RB300	174	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	Low		●		237	●	60
R Roksan Tabriz Basic	350	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	Low		●		240	●	91
R SME Series IV	983	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low		●		233	●	60
R SME Series V	1,461	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low		●		233	●	60

SPECIFICATIONS

PARALLEL TRACKING EFFECTIVE MASS PIVOTED UNI-PIVOT ADJUSTABLE LENGTH (cm) FACTSBACK NO. ISSUE NUMBER

## Tuners



TV has stolen radio's status as the foremost broadcast entertainment medium, but with its Radio Four plays and Radio Three music, the BBC still makes a potent case for audiophile reception equipment. For how much longer, under the cost-conscious Birtist régime, remains to be seen. Another new imponderable is the arrival of digital radio broadcasting, though reception apparatus is currently non-existent outside of the in-car market. These days tuners play second fiddle to hi-fi sources like CD, but in many ways they are a greater engineering challenge than digital equipment, and thus higher price-tags clearly equate to superior performance. High-quality, roof-mounted antennae are essential for audiophile listening, so factor them into your budget.

KEY TO SPECIFICATIONS

- **WAVEBANDS:** FM – (VHF), M – MW, L – LW.
- **PRESETS:** Number of station frequencies that can be stored.
- **RDS:** (Radio Data System) was originally designed for in-car applications. RDS tuners can identify and display the name of the radio station being received, traffic news and other information about broadcasts.
- **REMOTE CONTROL:** Infra-red control handset supplied.
- **SIGNAL STRENGTH METER:** Indicates strength of signal from aerial – useful for aligning your 'twig' during installation.
- **ROTARY TUNING KNOB:** Experience has shown that this analogue throwback is ergonomically far superior to the button-based approach.
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**B** BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

# Tuners

STATUS

PRODUCT	(£)	COMMENTS	SPECIFICATIONS							
			WAVEBANDS	PRESETS	RDS	SIG. STRENGTH METER	ROT. TUNING KNOB	FACTSBACK NO.	ISSUE NUMBER	
R AMC T7	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30			●		1945	166
R Arcam Alpha 10 DRT	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM, M, L	24					1946	166
R Arcam Alpha 10 DRT	800	The first DAB tuner and arguably still the best, but the system's still not perfect	DAB	7	●	●	●	●		199
R Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM, M, L	64			●	●		193
R Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM, M, L	64			●	●		193
R Symbol C-DAB 1	1,000	The first 'high-end' DAB tuner, although format is the ultimate limitation. Gorgeous finish	DAB	8	●	●	●			199
R Denon TU-260L II	130	The return of the all-time favourite, now enhanced with RDS and sounding as fine as ever	FM, M, L	40	●	●		●		193
R Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●	●			1947	166
R Denon TU-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM, M	40	●	●		●		184
R Magnum Dynalab FT11	499	All-analogue tuner: receives weak or tightly packed stations but loses out on noise and sonic neutrality	FM	3				●		184
R Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30	●	●		●	1948	166
R Linn Kremlin	2,600	Controversially good sound at a very high price	FM	80			●	●	1254	142
R Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM, M	60	●	●				184
R Musical Fidelity E50	300	Sounds involving if coloured and has a subjectively larger-than-life presentation	FM	20					1810	157
R Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29			●	●		193
R Myryad T-10	530	A very smart unit which works well and offers good rhythmic drive and vitality, albeit at a price	FM	20				●		184
R NAD C40	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM, M	30	●	●				193
R Naim NAT01	1,730	There may be better sounding tuners in the world, but we have yet to hear one	FM						1254	142
R Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM, M	40	●	●		●	1949	166
R Pioneer F-504RDS Precision	300	Lots of features, plus a sound that's low on noise and high on communication, adds up to a good value package	FM, M	40	●	●		●		184
R Roksan Caspian	595	Neat facia with great ergonomics, but sound is not really any better than models at half the price	FM	50			●	●		184
R Sony ST-SE500	140	A lot of features for the money, but sound lacks detail and has some coloration	FM, M, L	30	●	●		●		193
R Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M	20					1950	166
R Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM, M, L	30	●	●		●	1810	157

SPECIFICATIONS

WAVEBANDS PRESETS RDS SIG. STRENGTH METER ROT. TUNING KNOB FACTSBACK NO. ISSUE NUMBER

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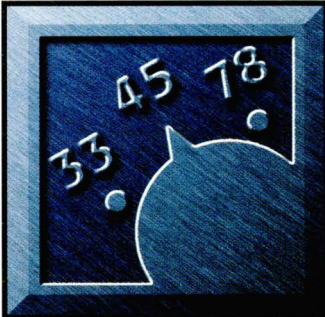
# Tuners

SPECIFICATIONS

WAVEBANDS PRESETS REMOTE CONTROL SIG. STRENGTH METER ROT. TUNING KNOB FACTSBACK NO. ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	FM,M,L	30						184
Sony STS-B920S	180	A little hiss and image compression don't detract from the clean performance of this feature-packed tuner	FM,M,L	30						184
Technics ST-GT350L	130	Decent RF performance is offset by sound quality more typical of a mini/midi system	FM,M,L	30						1254 142
Technics ST-GT1000	500	Handy tuner that combines DAB, FM and AM in one unit and substantially lowers the price bar for DAB entry	DAB,FM,M	97						199
Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM,M	59						1810 157



# Turtables

Specialist turntables are at the heart of high-fidelity sound. CD players may offer ultra-low noise and a flat frequency response, but they can't match the dynamics and superlative rhythmic timing taken for granted by serious turntable users. Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). Still better quality is found at higher prices among the separate motor units and tonearms. Because turntables are mechanical devices, designed to retrieve micron-small modulations engraved into vinyl, engineering quality is of paramount importance. This is also the reason why turntables cost as much as they do, and require the finest equipment support systems.

KEY TO SPECIFICATIONS

- **MANUAL:** You do all the work.
- **AUTO:** The record player does all the work.
- **SEMI-AUTO:** You put the needle on, the turntable lifts it off at the end of the record.
- **SPEEDS:** In RPM to correspond with long-playing records or seven/12-inch singles.
- **SUSPENDED SUBCHASSIS:** Spring suspension to minimise structural interference.
- **EXTERNAL PSU:** Outboard power supply; generally indicative of higher-quality performance.
- **SUPPLIED WITH ARM:** Many turntables do not come with a tonearm fitted, but if this category is checked, the deck is already thus equipped.
- **SUPPLIED WITH CARTRIDGE:** If a turntable comes complete with arm and cartridge.
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**B** BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

# Turtables

SPECIFICATIONS

MANUAL AUTO SEMI-AUTO SPEEDS SUSP. SUBCHASSIS EXTERNAL PSU SUPPLIED WITH ARM SUPPLIED WITH CARTR. FACTSBACK NO. ISSUE NO.

STATUS

PRODUCT	(£)	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP. SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH ARM	SUPPLIED WITH CARTR.	FACTSBACK NO.	ISSUE NO.
Avid Acutus	4,995	Extremely capable design with no apparent shortcomings, don't sell your vinyl 'til you've heard it on this!									33/45	194
Clearaudio Reference	3,990	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail, but can sound bold									33/45	1328 144
DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table									33/45	1328 144
Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph									33/45	103
Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended									33/45	91
Linn LP12 Basik	1,100	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	875	Sweet and natural-sounding player, well matched to Rega RB300 arm									33/45	55
Michell Gyro SE	775	A stunningly desirable combination of looks, solidity and sound make this a tempting turntable									33/45	190
Michell Orbe 'SE'	1,725	A Superb turntable, able to mix it with the best at virtually any price									33/45	192
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm									33/45	1907 164
Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever									33/45	159
Pink Triangle Tarantella II	850	A turntable that looks unlike any other, with rare ability too. Quirky, but sound is immensely likeable									33/45	192
Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound									33/45	1907 164
Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best									33/45	192
Pro-ject 6/Sumiko	850	Don't think of this as a 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	Sounds musical in a balanced manner, needs decent isolation and suffers a little pitch instability									33/45	1907 164
Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail									33/45	159
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 10A	3,333	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built									33/45	195
SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm									33/45/78	186
Thorens TD166 VJ/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget 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	850	Intriguing and challenging. Musically not ideal, but its limpid quality and lack of artificiality set standards									33/45	1180 136
Wilson benesch The Circle	795	A beautiful turntable with a sumptuous sound, all at a very reasonable price - a clear Best Buy									33/45	192

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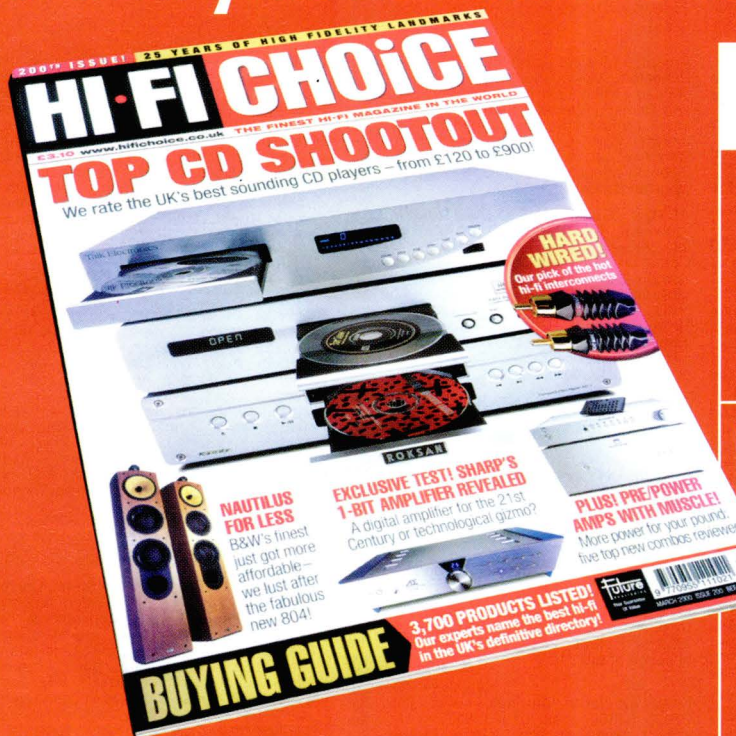
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 HI-FI CHOICE Nov 1998

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**GAMUT: "the entire range of musical notes" (Webster's Unabridged Dictionary)**

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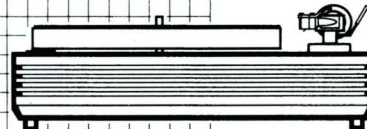
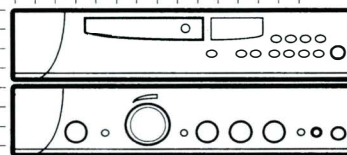
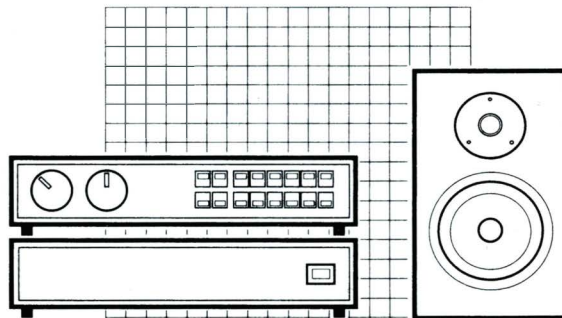
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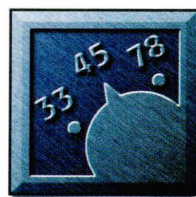
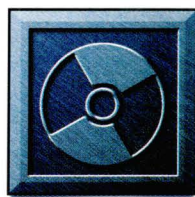
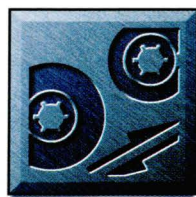
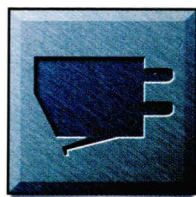
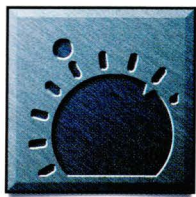
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● Chord 1200B, £2,000. Harbeth HL Compact 7 including Target stands, £700. Nordost Blue Heaven 2m bi-amp, £160. Five-shelf rack, £90. Call (020) 7226 7481.

● Drive belts, Thorens fit, £4 each or £10 for three, postage paid. Call (01642) 594645.

● Exposure XI preamp with Exposure XII power supply (£1,350), asking price £695. Call Laurence (01270) 871390 (day)/(07879) 460935 (mobile).

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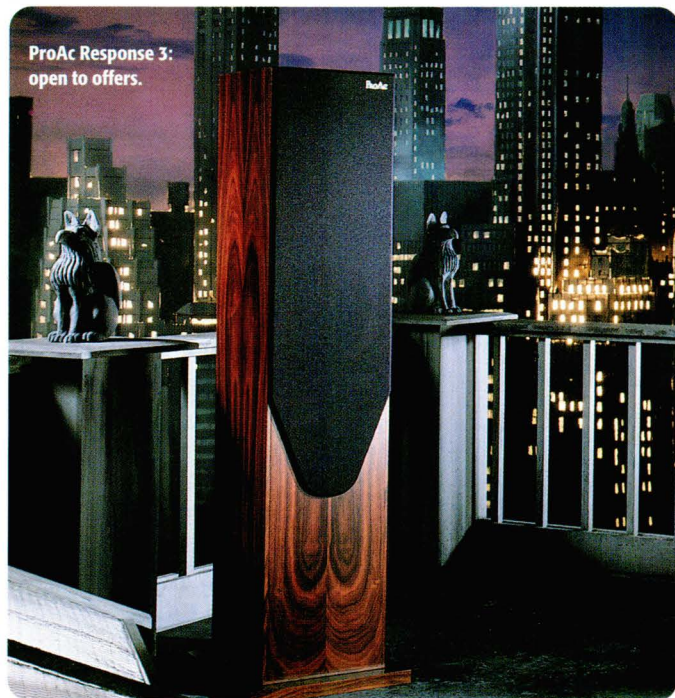
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Buying secondhand can be a great way to pick up a bargain. A formerly-expensive second-hand component might well prove a better long-term bet than a brand-new product engineered down to a price. Do some research on which brands and products have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a second-hand hi-fi dealer, you're unlikely to get any warranty. So it's up to you to ensure the fitness of any gear that you buy. Products such as speakers should be less prone to breakdown than amplifiers, and amps should be more reliable than CD players. But any abused component could be troublesome – have a proper dem, and judge the seller as well as the goods!



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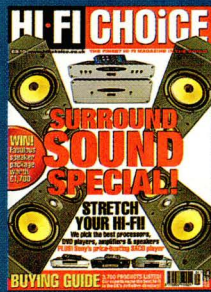
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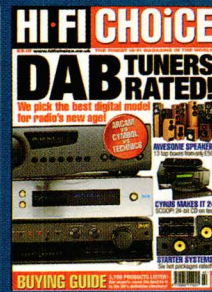
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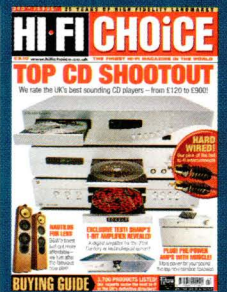
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1992	102-113	Mar	Very limited
1993	114-125	Feb and Dec	Very limited
1994	126-137	Jan, Feb, Mar, May, Jul, Oct, Dec	Very limited
1995	138-149	All sold out	None
1996	150-161	Jan, Apr, Jul/Aug, BBG	Very limited
1997	162-173	May, Dec, BBG	Very limited
1998	174-185	May, Jul/Aug, Oct, BBG	Limited
1999	186-197	None sold out	Good
2000	198-	None sold out	Good

Back issues from 1988 onwards are available as shown in the table. They cost £4.00 (UK) or £6.95 (overseas). Both prices include p&p. Order by phone on ☎ (01458) 271147.

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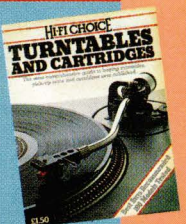
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# JIMMY HUGHES

**If you want your components to stand and deliver, Jimmy reckons you'd better not take your feet for granted...**

**R**ingmat Feet; it sounds like a nasty incurable tropical disease. In fact, it's the latest accessory from QR Developments – and it's been an extremely long time coming. I can't put an exact date to it, but it must be at least three years since designer John Rogers visited me with an early prototype. Results were encouraging, but it's taken John until now to release the product onto the market. Inevitably, the design has changed quite considerably during development, but the essential concept remains: a group of decoupled concentric rings that provide a cushioned foot for equipment to stand on.

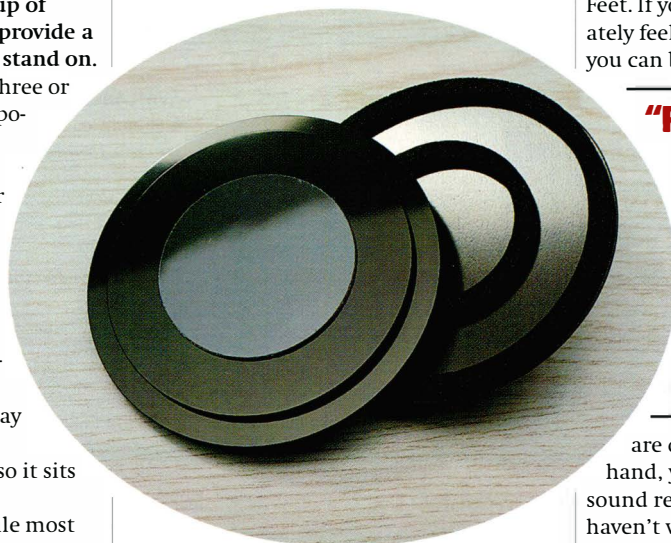
Installation is simple; just put three or four Ringmat Feet under the component of your choice, following the layout suggested in the instructions. It's assumed you've got your source components and amplification sitting on the supplied (rubber) feet rather than spikes or cones. The Ringmat Feet fit underneath the existing support feet, the intention being to decouple the component from the table or shelf. The only other detail to pay attention to is placing the special Statmat (called Ringmat ST foot), so it sits under the rear right foot.

Ringmat Feet are different. While most accessory feet concentrate on increasing coupling rigidity (usually by means of a spiked metal interface), these do the opposite. Putting a set of cones or spikes under a CD player or amp usually brings a fairly dramatic increase in tightness, control and immediacy – which many enthusiasts like. But while the effect produced by spikes and cones seems like a definite improvement in the short term, it may not be judged so over a longer period. Sometimes the benefit is double-edged; gains in clarity and immediacy are bought at the expense of a certain relaxed warmth and ease.

If your experience of putting spikes or cones under components tallies with what I've just said, and you're looking for something that increases fluidity and mellifluousness rather than sharpness and impact, chances are that these Feet will produce the

results you're after. But you definitely need to try a set of Feet in your system over a few days before deciding, as results can vary.

At best, Ringmat Feet produce an improvement comparable to the Townshend Loudspeaker Seismic Sinks I raved about last month. Taking a set of Feet to a friend's house and using them under his DNM preamp, the effect on the music was magical. Sonically, things became subtler and more varied in tone and texture – more real and believable, less obviously 'hi-fi'.



Fine detail was enhanced, but not 'in your face'. The effect was of a subtler, sweeter presentation that was friendlier to the ear.

Results at home initially seemed less convincing. With the Feet in place under my Audio Signal Enhancer (a small valve line stage similar to Musical Fidelity's X10-D), the sound felt more relaxed, but at the expense of a certain dynamic tension.

While recognising the benefits of having the Feet in place, something was missing...

There's always a balancing act between forwardness, attack and up-front detail on one hand, and a smoother, sweeter, more relaxed presentation on the other. The ideal, in my view, is a sound that's superficially smooth and refined, yet also capable of great attack and dynamic punch when the music demands something extra.

Ringmat Feet seem to take time to 'bed in', something which makes hasty A/B comparisons tricky. To further cloud the waters, the instructions warn the Feet have a temporary conditioning effect on any component they're used under. This means some of the effect produced remains for a while, even when the Feet are removed! Scary...

So the only fair way to audition this product is to fit and leave for a while, then remove and spend a few days listening without. If your experience matches mine, I think you'll find that Ringmat Feet don't initially produce a huge obvious improvement. But, after a few hours, the music seems to be more listenable and accessible. My advice would be to listen for a day or two, then (near the end of a session) remove the Feet and see what sort of change occurs.

Of course, the acid test will be your reaction the next time you listen, minus the Feet. If you switch on next day and immediately feel that something's missing, then you can be pretty certain the Ringmat Feet

**"Ringmat Feet aren't inexpensive, but cost is a relative thing; if they perform to their full potential, it'll be money well spent."**

are doing a good job. If, on the other hand, you switch on and think things sound really great, then (probably) the feet haven't worked their magic for you.

Fortunately, QR Developments offers a money-back guarantee if you're not delighted. John Rogers tells me no one's returned a set so far, and he's actually had people buying second and third sets. Ringmat Feet aren't inexpensive, but cost is a relative thing; if they perform to their full potential, it'll be money well spent.

You can buy Ringmat Feet in sets of three or four and two different thicknesses. The 7.7mm set (£75 in fours) is for components weighing up to 13kg, while the 8.8mm alternative is suitable for kit up to 21kg (£85). These weights decrease slightly if the Feet are used in threes, the recommendation being up to 10.5kg and 17kg respectively.

✉ QR Developments, PO Box 200, Brentwood, Essex, CM15 9FB

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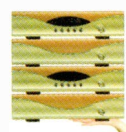
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