

**THE LATEST MODELS** FROM THE WORLD'S BIGGEST TECHNOLOGY SHOW

# HI-FI CHOICE

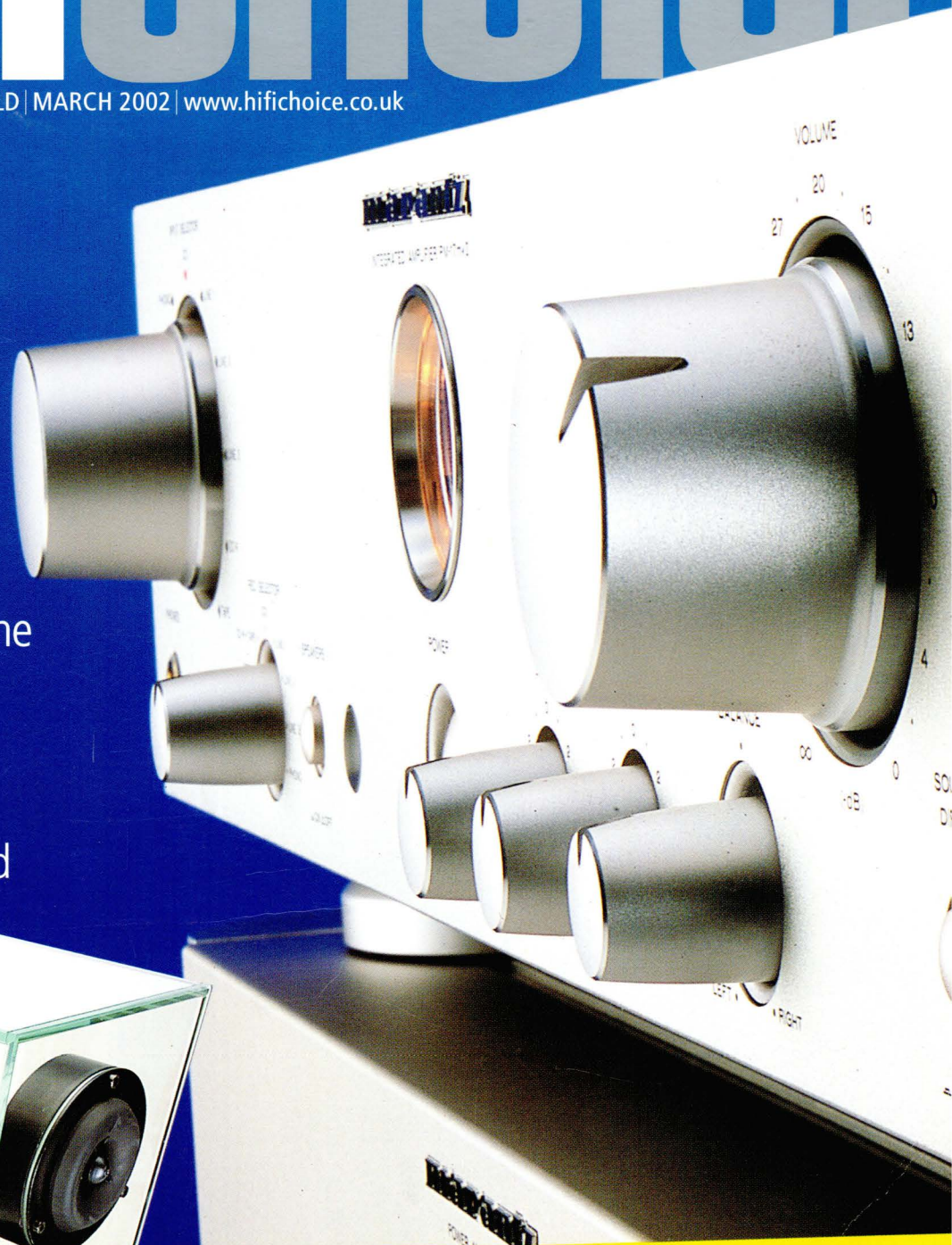
THE FINEST HI-FI MAGAZINE IN THE WORLD | MARCH 2002 | [www.hifichoice.co.uk](http://www.hifichoice.co.uk)

## SUPER SONIC AMPS

Twin engined models  
fight to prove two  
boxes are better than one

## Speakers With Style

Do designer boxes sound  
as good as they look?



## British Record

NAD launches first UK  
designed CD recorder



## Feel The Bass

How a  
subwoofer  
could change  
your life –  
the latest  
models rated



## IS CD STILL KING?

Find out if Yamaha's £700 DVD-Audio  
player can rival Meridian's latest high-end CD



MARCH 2002

£3.50

03

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**PHILIPS**

*Let's make things better.*

## CONTRIBUTORS



**Dan George** likes rock and acoustic music and plays it on a system consisting of Naim, Briston and B&W com-



**Jason Kennedy** HFC's former editor prefers the sound of esoteric Scandanavian jazz on his SME turntable.



**Paul Messenger** likes dance, folk, rock and classical music on vinyl and uses Linn, Naim and Rehdeko kit with gusto.



**Paul Miller** is the king of the technical world when it comes to hi-fi. He is in the process of getting fully mul-



**Alvin Gold** has eclectic music tastes although he prefers stuff that is miserable and downbeat.



**David Vivian** taps his toes to jazz fusion and likes his speakers to look good as well as deliver the aural goods.

**HI-FI CHOICE**  
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## HOW WE TEST THE PRODUCTS

Our reviewing process is the most rigorous in the business. We focus on transparency and resolution, mixing traditional hi-fi values with the latest technological developments via a blend of subjective views and scientific analysis.

**BENCH TESTS** Our main group test each month concentrates on a key area, with products from across the separates market. The testing consists of three stages: 'blind' listening, hands-on subjective testing and scientific measuring. The latter phase is conducted by our Technical Editor using the QC Suite Functional Testing Station.

**GROUP TESTS** Each issue features a number of additional tests aimed at narrowing the field in a specific product area. Here the testing involves just the reviewer concerned with no lab or panel testing, but plenty of comparisons.

**SOLO REVIEWS** As well as group tests we also review single components. In our First Impressions section, you'll find brand-new products that warrant early exposure, while

## AWARDS



**BEST BUYS** are considered to offer an excellent standard of performance at an attractive price.

**RECOMMENDED** products are first-class components, losing out to Best Buys only because of a higher price or less competitive sound quality. A third award, **EDITOR'S CHOICE**, is reserved for those products reviewed solo and is awarded where the Editor is convinced that a product offers exceptional



performance.

# intro



I went to a Ryan Adams gig the other day. The tousle-haired king of alternative country was in the finest of fettle; voice like an angel stumbling from grace, band with whisky sours in their hearts and honey dripping from their

fingertips. It was raining outside. When I reached home I lunged straight for the great man's *Gold* CD, slipped it in the drawer and stabbed play. That voice was still with me, the band still striking that same emotional chord. Because of my hi-fi it will always remain, not just a fleeting moment in time but something I can call upon whenever it's needed.

Music digs deep into our emotional core like no other art form. It touches the soul and makes grown men weep. Hi-fi is simply a means to a musical end – it provides a conduit for its energy and detail, delivers scale and space, ensures you get closer to the tone and impact of the original performance. It makes music seem more real and hence achieve its emotional goal. Quite simply, the music that moves you moves you more.

For 27 years, *Hi-Fi Choice* has been dedicated to the pursuit of audio excellence, its honesty and attention to detail forging a legend with industry and consumers alike. I stand before you as the latest in a long succession of *HFC* Editors and will endeavour to ensure the tradition continues as we present you with the finest hi-fi equipment money can buy, dedicated to bringing music – and indeed film – closer to those with a passion for the sonic arts. Stay with us through 2002. It's set to be quite a ride.

Incidentally, one particular Adams song, *The Bar Is A Beautiful Place*, helped me through a tough time recently. So here's to the author of its heart-tugging beauty. And here's to my hi-fi for making it real.

Tim Bower

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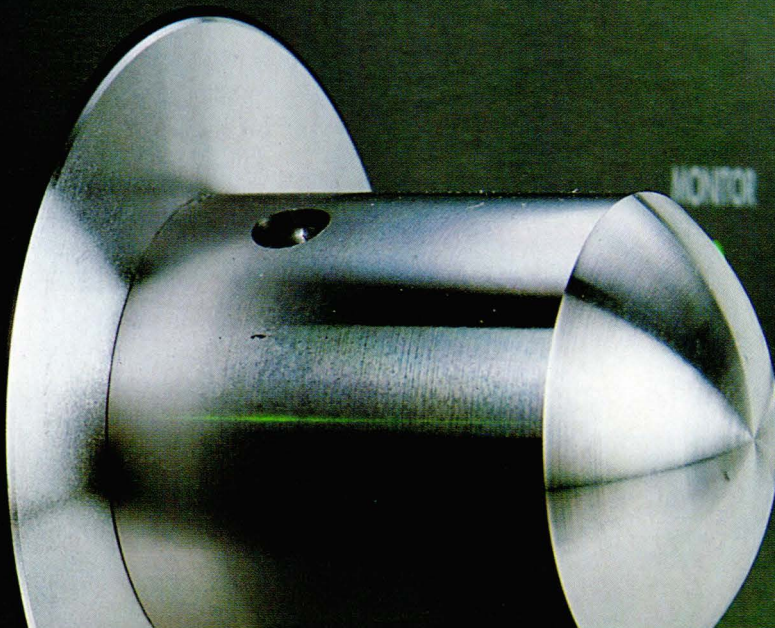
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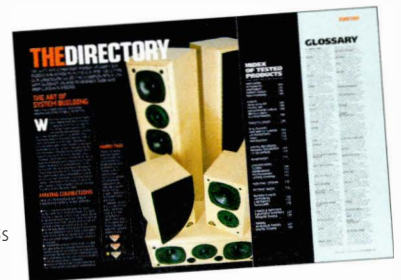
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Pick up a bargain from the people who  
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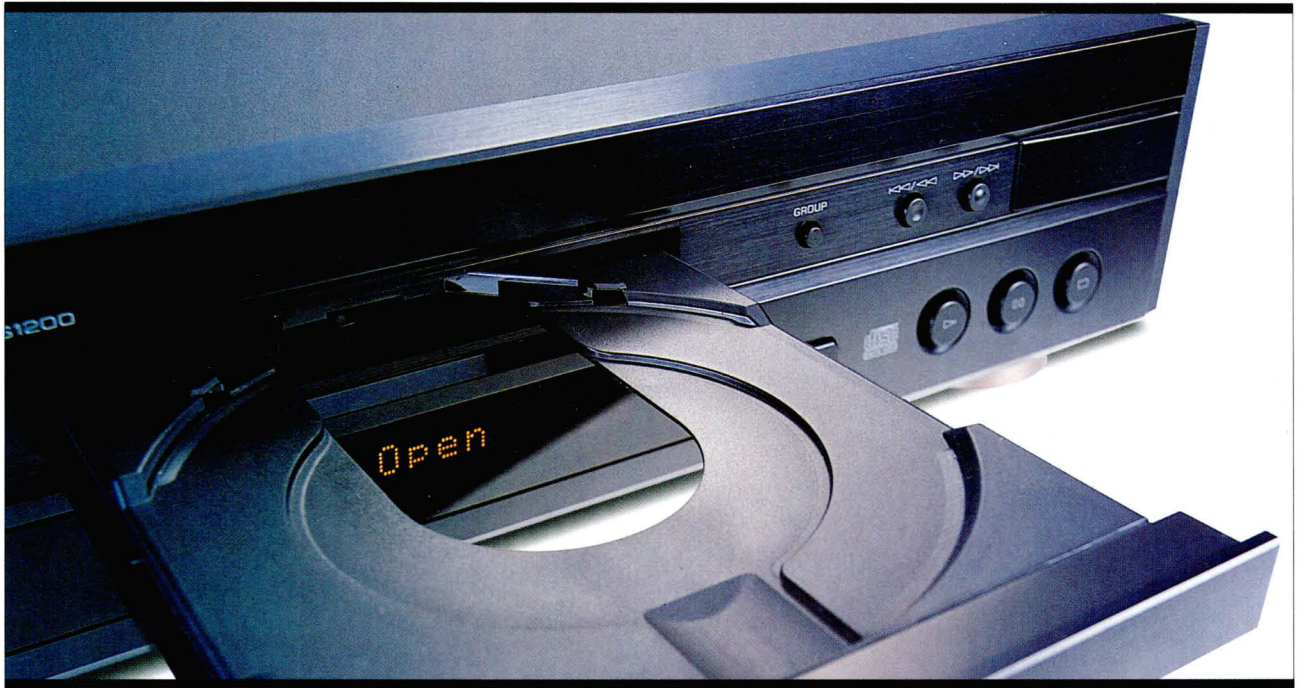


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# FIRST IMPRESSIONS

DAN GEORGE AND ALAN SIRCOM DRINK DEEP OF THE FRESHEST HI-FI WATERS.



## YAMAHA DVD-S1200 AV PLAYER

★★★★★ £600.00-£700.00

**"THE DVD-S1200 MAKES AN EXCELLENT DVD-VIDEO PLAYER, A GOOD DVD-AUDIO MACHINE AND AN OKAY CD PLAYER."**

**A**s DVD-Audio appears on some of the best DVD-Video players, many home cinema types buy a top-notch DVD player and barely notice the DVD-Audio facility.

The Yamaha DVD-S1200 is a prime example. In a world of £99 DVD players, the DVD-S1200 is a real enthusiast's model and will grace many Yamaha-based systems. For those buyers, the fact that it can play DVD-Audio discs is icing on the cake. It's an exceptionally good DVD-Video player, with a 12-bit video digital decoder, a pair of Scart sockets for video connection and built-in Dolby and DTS decoders. It also supports CD-R and RW discs, although MP3 replay is absent. The only limitations are the quite basic black plastic remote and the lack of progressive scan video outputs for projectors and plasma displays.

Any DVD Audio/Video player must be assessed as a DVD-Video player, a DVD-Audio player and a CD player. And that's the pecking order of the Yamaha; it makes an excellent DVD-Video player, a good DVD-Audio machine and an okay CD player. Its video performance is exceptionally good and more than justifies the price for a home cinema enthusiast – the sharpness and

clarity of the picture shines through whatever the disc.

On DVD-Audio the sound was well-balanced and good, but the dynamic range leaves something to be desired. Music was expansive and clean, but the scale of the instruments was not as dramatic as the very best. Moving to CD further highlighted the limited dynamic scale of the DVD-S1200. It is an exceptionally good CD player by DVD standards, especially when the video output is turned off, but it is warm and slightly soft sounding. There is a good sense of space to the soundstage, but everything is bathed in a rosy glow; this may prove too mellow for those with catholic tastes.

If you spend most of your time watching DVD-Videos but want some decent CD sounds and are keen to check out the latest in DVD technology, the Yamaha is an excellent choice. As an out-and-out music player, it is still good, but ultimately less convincing. **AS**



### DATASTREAM

**DVD AUDIO/VIDEO PLAYER,** Region Two DVD-Video replay, CD, Video CD and CD-R/RW compatible, single disc player, front headphone socket, composite, S-Video and RGB component video picture, stereo and six-channel output, optical and coaxial digital outputs, 2x Scart sockets.  
**YAMAHA ELECTRONICS**  
01923 233166

# TANNOY EYRIS 2 LOUDSPEAKER

★★★★★ £999.90

EDITOR'S CHOICE  
HI-FI CHOICE  
magazine  
★

"THE EYRIS 2 GOES FOR A CONTROLLED SOUND THAT IS AS DRY AS A MARTINI AND AS NATURAL AS BREATHING."



## DATASTREAM

**SIZE** 17x90.8x25.9cm (WxHxD), bi-wirable (with earth input), response 42Hz-44kHz, sensitivity 89dB, nominal impedance 8ohms, real wood veneers: sycamore, American walnut.  
**TANNOY** ☎ 01236 420199

**T**he £1,000 Eyris 2 is the least expensive floorstander in the five strong Eyris range. It's a slimline 21litre design that stands 908mm tall and looks fantastic in the supplied sycamore finish with contrasting dark blue grille and silver top insert. It has a rear port with a removable bung that should be inserted when the speakers are used close to a wall and features a 25mm titanium dome tweeter and a pair of blue 145mm paper cone mid/bass speakers. It includes a star-shaped speaker cable connector, with five WBT terminals arranged in a pentagon. The bottom terminal is intended to be connected to an earth point on the accompanying amplifier in order to reduce RF induced noise.

Putting wideband technology into a conventional speaker design pays dividends with DVD-Audio and SACD, but it also works wonders with almost any modern hi-fi and home cinema source. It means the speaker has the transient attack and speed of a metal-dome tweeter, but without the brightness and ringing that can beset these designs. This may mean that some find the speakers a bit dull; but they also have an uncanny sense of space and soundstaging, even with a TV set between the two in a home cinema context.

The Eyris 2 doesn't have deep, organ-pummelling bass and is not particularly fast or overtly dynamic, but goes instead for a controlled sound that is as dry as a martini and as natural as breathing – perfectly suitable for music and movies alike.

Tannoy has scored a hit with the Eyris 2, whether for CD or SACD or DVD. It needs a good amp to drive it properly, but the wideband design works extremely well. It has a real high-end sound without the high-end price tag. Check it out. **AS**

# Discover the natural beauty



For nearly a quarter of a century the Heybrook name has been associated with high performance audio equipment. In its new, 2000 series speakers, Heybrook has created a comprehensive range with models suitable for every situation... from compact, subtle bedroom systems to full scale, home theatre including surround sound.

The technical excellence of the 2000 series is based on custom designed Kevlar drive units. With a significantly higher strength / weight ratio, the lighter Kevlar cones are more responsive and have superior self-damping.

Heybrook's 'first order' crossover networks give the amp increased control over the drive units for greater immediacy and clarity. By comparison conventional crossovers can make speakers confused and slow sounding.

Heybrook 2000 series speakers are exclusively available through selected, specialist retailers.

*"...Clear, sharp and lively... this was an unusually likeable loudspeaker which had the liveness of a classy compact, with the bass extension and tonal range of a much bigger box...."*

Hi-Fi News - UK

*"...The HB4's achieve a small miracle. Their musical coherence demonstrates a real 'know-how' on the part of the Heybrook design team. They are quite simply beautiful and natural. Bravo!..."*

Revue du Son et du Home Cinema - France

*"...It sounds so good, that I don't think I have ever heard a loudspeaker at this price, reproduce midrange frequencies with such quality!..."*

Lyd & Bilde - Norway



Heybrook Hi-Fi

Audio Group (UK) Ltd, PO Box 115, Inglesham, Wiltshire, SN6 7UY, United Kingdom. Tel +44 (0) 1367 253295  
e: sales@audiogroupinternational.co.uk www.heybrookspeakers.co.uk





# NAD C660 CD-R/CD-RW RECORDER

★★★★★ £499.95

**"THE CD RECORDER  
WORLD IS  
PAINFULLY  
COMPETITIVE AND  
£500 SEEMS A  
LOT OF MONEY FOR  
ANY CD-R DECK."**

**T**he £500 C660 twin-deck CD-R and RW recorder comes in the typical love-it-or-hate-it drab NAD colour scheme with NAD's usual remote control. This last is an ergonomic nightmare and takes some time to get used to. The front panel is a little easier and one really nice touch is the front-mounted optical digital connector. This makes it ideal for hooking up to a portable digital recorder. The rear panel has analogue phono and coaxial outputs for the CD portion and a complete set of analogue and digital inputs and outputs for the recorder section.

The C660 has some nice touches to it. It can understand CDs full of MP3 Internet Audio files, or discs with a combination of regular PCM audio and MP3 tracks. It can also play CDs that feature HDCD encoding. However, it cannot cope with non-audio material such as CD-Graphics or CD-ROM data. Fortunately, all of this is covered in the comprehensive manual. The manual is particularly important for a CD recorder, as you will refer to it constantly until

you're familiar with operating the machine.

The CD performance of a recorder is often overlooked, but in the C660 the CD replay is fair. It is a bit uneven and ragged at the top end and can tend toward sounding fat in the bass but it is acceptable so long as it's not your main CD source. Direct digital recordings are very close to the original, with only a hint of foreshortening of the soundstage and a very slight softening of fine treble detail on minimalist, clean and clear recordings. The level of cloudiness rises as the dubbing speed increases but even at the maximum 4x speed, the differences are mild. However, choose good discs if you plan on a lot of high-speed dubbing, as it seems to give the error correction circuitry heartburn.

This is not a bad dubbing deck, but the CD recorder world is painfully competitive and £500 seems a lot of money for any CD-R deck. This is a market dominated by big multinationals like Philips, leaving the C660 for the NAD-ists only. **AS**

## DATASTREAM

CD-R/RW recorder, MP3 and HDCD replay facility, front optical digital input, rear optical and coaxial inputs and outputs, analogue inputs and outputs, CD only analogue and digital outputs. Dubbing up to 4x normal speed.

LENBROOK ☎ 01908 319360





"ITS STUNNINGLY NATURAL SOUND EVEN CHALLENGES HI-FI PROPER, THANKS TO ITS IMMEDIACY."

## TIVOLI AUDIO MODEL ONE TABLE RADIO



★★★★★ £99.99

**T**ivoli Audio is the brainchild of American speaker designer Henry Kloss (of AR and KLH fame) and this is the company's very first product: a deceptively simple, traditional-to-the-point-of-retro looking FM/AM mono radio.

The Model One eschews fancy displays, radio text and presets. Instead, it cuts to the quick of radio. There are just two LEDs – power and signal lock – and three knobs, one for power and waveband selection, one for volume and a larger vernier dial for tuning; in short, the Model One is extremely easy to use. Combined with the square wood cabinet and a small speaker on the front panel, it all looks purposeful and smart in a slightly dated way.

But while it may look nostalgic, the Model One is certainly not old-fashioned. It uses a new tuner system with ideas nicked from mobile phone technology to pull in more stations. And it sounds modern, too. It manages to imitate the positive traits of some of the best radio sets around, with few of the limitations. So, it has the precision and station-finding power of a Sony ICF

without the slightly tinny sound; it has the warmth of a Roberts radio without the rose-tinted performance and it has the immediacy and striking naturalness of the Bose Wave Radio without the artifice of stereo to add hiss to weaker signals.

This makes the Model One remarkably listenable. It doesn't go that loud, but loud enough to fill a room with voices and music in a resoundingly natural manner. Best of all, it produces this stunningly natural sound with music and vocals and even challenges hi-fi proper, thanks to its immediacy.

There is only one downside; the speaker is not shielded and if placed close to a TV or cathode ray tube PC monitor, it will eventually stain the screen.

Tivoli's Model One is the antithesis of Digital Radio and it shows just how far the new radio format has still to go. Anyone can use this radio in seconds and get a sound so good that all the extra text and preset options of more 'modern' radios are soon forgotten. Try one and be amazed. **AS**

### DATASTREAM

**TWO BAND TUNER, FM/AM,** 12v/240v operation, mono line input, tape and headphone output, size: 21x11.5x5cm (WxHxD), four colour options  
**RUARK ACOUSTICS**  
 ☎ 01702 601410

# INFINITY KAPPA 200 LOUDSPEAKERS & KAPPA STANDS

★★★★★ £599.00 (SPEAKERS)/£199.00 (STANDS)

"IMPRESSIVE BASS RESPONSE WITH GOOD, SOLID EXTENSION IS COUPLED WITH A FANTASTIC SPEED AND AGILITY ACROSS THE FREQUENCY RANGE, WHICH IS IN A LEAGUE OF ITS OWN."

**I**nfinity, under the careful guidance of loudspeaker guru Floyd Toole has been pretty busy lately producing five new loudspeakers for the Kappa range. Like the Alpha series in

Infinity's stable, all five Kappa models use CMMD driver technology, which employs an aluminum and ceramic sandwich to create a light and very stiff driver. Infinity designers claim most coloration in a loudspeaker is due to flexing diaphragms, as cone break-up across

the frequency range colours vocals and instruments. They claim the CMMD driver's stiffness helps create a more linear, piston-like operation. The Kappa 200 is the baby of the bunch in a line-up including two floorstanders, a centre and a sub.

The dedicated stand is a heavy, mass-fillable affair that provides spikes both into the floor and cabinet, the latter an odd mix of veneer and silver plastic. The 200s are weighty and quite large, but feel well-braced with a good standard of finish. Twin binding posts sit beneath a reflex port, and the cabinet is heavily tapered around the baffle to minimise diffraction.

In use it would appear that Infinity's objectives have been met. Greeted by a big sound, the Kappas tell it like it is: impressive bass response with good, solid extension is coupled with a fantastic speed and agility across the frequency range, which is in a league of its own. An unappealing characteristic of this speaker however is its inclination to give a metallic edge to treble, as well as some unwelcome midband hardness. This makes the high frequency response strident and unnatural. But balance is a reflection of room interactions and personal taste, and in some circumstances this forwardness would be called speed. **DG**



## DATASTREAM

**SIZE:** 22x36x36cm (WxHxD), two way reflex-loaded loudspeaker, 25mm tweeter, 170mm midbass driver, sensitivity 89dB, 6ohm impedance, twin binding posts, choice of cherry, black ash and maple finishes.

**HARMAN CONSUMER UK**  
☎ 020 8731 4670



## MISSION M70 LOUDSPEAKER

★★★★★ £99.90

**"BUILD QUALITY IS SUPERB: IT'S JUST LIKE A SCALED-DOWN M71 AND YOU'LL WONDER HOW THEY CAN DO IT FOR A TON."**

### DATASTREAM

**TWO-WAY** reflex loaded loudspeaker, 15x24x23cm (WxHxD), 21mm soft dome tweeter, 110mm woven glass composite midbass driver, 87dB sensitivity, 8ohm impedance, graphite black and European beech finishes  
**MISSION** ☎ 01480 423700

**A** loudspeaker for £100 is going to have its limits for sure, but there is often surprising potential even at this real world price point. Mission's M70 is the smallest model in the M-series, and it considerably undercuts Mission's previous range starter, the £130 700, which was well liked at *Hi-Fi Choice*. Plonk the M70 on a stand and it looks every bit the A/V satellite speaker, a purpose it is also intended for. In fact threads exist at the rear for wall bracket use if space is really tight. The build quality is superb; it's just like a scaled-down M71 and you'll wonder how they can do it for a ton.

Single wiring is the only option with these reflex-loaded speakers and the drivers are arranged with two mini reflex ports at the front and the tweeter at the very bottom. This puts what is a fairly upfront HF output bang in line with your ears, which can be a bit much. There's a bit of small box sound with these speakers and

sometimes things get a bit blanketed and muddy, particularly in the lower midband.

However, bass output is surprisingly good for such a small cabinet and all but the lowest octaves are reproduced, consistent with the claimed 68Hz roll-off point. Average sensitivity gives above average dynamics; these punchy little boxes entertain and go much louder than you might think. Near-field listening and small rooms would suit best, but the M70s can drive larger rooms if necessary. Vocals impress, sounding very natural with a great presence in the soundstage. Despite some limitations this speaker shares the same foot-tapping musicality enjoyed by its larger cousins that has earned our affection previously in *HFC*. A couple of minor moans: the bright treble output loses points as does the slightly muddy midrange, but at £100 the overall package is great value. Another triumph for Mission in the super-budget loudspeaker domain. **DG**

*Designed with  
passion,  
engineered to  
perfection...*



*Created for music.*

Chord products have captured the hearts and minds of listeners and reviewers throughout the world.

It's no wonder. Each unit is hand built to individual order by British craftsmen, and designed to give the effortless musical performance you have always desired.

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Chord Electronics Limited



The beautifully upgraded CD7.

## Q'D UP

### CYRUS LAUNCHES NEW PRODUCTS

Cambridge-based electronics specialist Cyrus has launched four new products for 2002. A new version of the CD7 player is available with a Q-board upgrade that offers a 24-bit balanced output DAC configuration for £1,150. For the Quattro system Cyrus has released a £350 multi-room card that allows the main unit to control up to three other zones using a radio handset that can operate through walls.

Multichannel users can now benefit from a new £350 centre-channel loudspeaker the CLS50C, designed to match the existing CLS50 standmount designs and finally a new 50-watt Q-Power amplifier allows loudspeaker bi-amping for £400.

Cyrus ☎ 01480 435577



JBL's flowery new TiK speakers.

## LOVELY JBL'LY

### JBL LAUNCHES NEW HIGH-END LOUSPEAKERS INTO THE UK

Some of the most striking loudspeakers available from JBL have just made it into the UK. The new TiK series comprises six models including two floorstanders, two subwoofers, a standmounter and centre channel loudspeaker. Each Tik cabinet uses a bent trapezoid design formed from bonded MDF to provide a five-sided enclosure that is said to minimise internal resonance. The range utilises a 25mm titanium-dome tweeter and 100mm inverted dome midrange cones. Each driver in the TiK series has its own binding posts which allows quad-amping with the largest Ti10K model. Available in natural beech and black ash, the TiK range can be ordered in one of five high-gloss lacquer finishes with prices starting at £499 for the TiK1 centre.

Harman Consumer UK ☎ 020 8731 4670



## ARCAM'S NEW DIVA

### NEW CD PLAYER FROM LEADING UK BRAND

Arcam has launched a new Diva CD player that claims to set new standards of performance at its price point. The CD62 shares many of the components found in the CD72, including a 24-bit Burr-Brown DAC and a new Sony mechanism. Arcam has made savings with the design of the

CD62 by stripping away the upgrade path to the CD92 and creating a simpler remote handset, output stage and chassis to produce the player for £349.99. The CD62 is available now in both black and silver finishes.

Arcam ☎ 01223 203200



## IT'S SHOWTIME

### UK'S BIGGEST HI-FI SHOW IS COMING

February brings us the 15th annual Bristol Sound & Vision show, the biggest event of its kind in the UK. This year's show promises to be the biggest ever with the Marriott Hotel once again hosting the event over three days from Friday, 22nd February. Expect to find a wide range of exhibitors showing products from the hi-fi, home cinema, and custom installation worlds, often with special show discounts. Tickets cost £6 on the door and further information can be obtained on the show's website or by calling joint organisers Audio-T.

Audio-T ☎ (01242) 239 839, [www.bristolshow.co.uk](http://www.bristolshow.co.uk)



PMC's passive, though striking MB2s.

## PMC ACTIVITY

### STUDIO SPECIALIST LAUNCHES NEW PROFESSIONAL RANGE

PMC has launched a new range of professional loudspeakers aimed at broadcast and studio environments. The new MB2 series is available in both passive and active forms in both single and double cabinet models. PMC's active models utilise PMC/Bryston amplification and feature active crossovers that can be manipulated with room analysis software to tune the system to the room. All models use 310mm (12") bass drivers, with soft-dome HF units that extend to 25 kHz. Prices start at £7,500 for the MB2 passive, continuing to £27,000 for the active twin-cabinet version.

PMC ☎ 0870 444 1044

## HARMAN'S PROGRESSIVE DVD

### NEW SUB-£500 PROGRESSIVE SCAN DVD PLAYER FROM HARMAN



Harman Kardon has launched a second DVD player into its current range. Featuring progressive scan video output and a Wolfson 24-bit/192kHz audio DAC, the DVD 25 will happily play a host of formats including CD-R/RW and MP3-encoded CDs. Harman's £499 player is well-equipped boasting component, composite and S-video outputs as well as RGB on SCART.

Audio outputs include digital coaxial and optical, along with standard down-mixed analogue.

Offering upgradable firmware the DVD25 also comes with a backlit remote control and a wealth of on-screen menus including a video test screen to adjust TV picture quality. Look out for a full review in the near future.

Harman Consumer UK ☎ 020 8731 4670



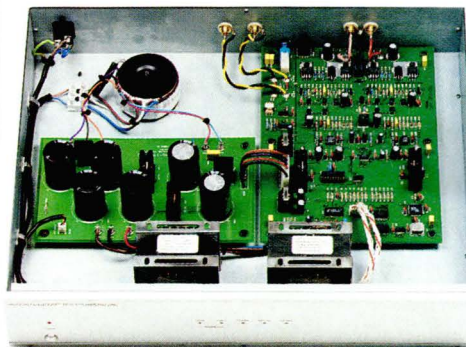
## TOSHIBA DVD-A BARGAIN

### TOSHIBA LAUNCH NEW AFFORDABLE DVD-AUDIO PLAYER

Toshiba has launched a new entry-level DVD-Audio player priced at £399. The SD510E is compatible with CD, CD-R/RW, MP3 encoded discs and DVD-Video. Picture quality is enhanced by Toshiba's Super Anti Alias filter which generates a 540-line resolution instead of the standard 500 lines. Connections include S-video and component video outputs, plus optical and co-axial digital outputs. Toshiba's new SD510E is the second sub-£400 DVD-A player on the market, following the launch of JVC's £350 XV-SA72SL unit. Expect to see a review in *HFC* soon.

Toshiba ☎ 01932 828828

The A3<sup>24</sup>: reduces distortion.



## DAC'S ENTERTAINMENT

### MUSICAL FIDELITY'S NEW UPSAMPLING DAC

Musical Fidelity has produced an all-new 24-bit up-sampling DAC using technology featured in its Nu-Vista 3D CD player. The A3<sup>24</sup> uses an upsampling technique that claims to remove distortion by shifting digital errors into the 25-35 kHz region and out of the audio band. The up-sampling method to 96 or 192kHz allows the use of simplified digital and analogue filters, which is claimed to offer greater resolution and transparency. Choke-regulated power supplies are used throughout and the unit is compatible with any CD player with a recognisable 44kHz digital output. The A3<sup>24</sup> is expected to retail at £799.99.

Musical Fidelity ☎ 020 8900 2866

## IN BRIEF



**CROFT** has introduced a new design concept called Stereolith that offers a new standard of finish to many existing components in the range. The new Baux fascia uses 12mm brushed aluminium front panels, available in both silver and gold finishes. The new design includes new casework, which is made from non-magnetic heavy gauge steel. The finish is available starting with the Charisma X two-channel pre-amp priced at £2,050.  
☎ 01746 769156

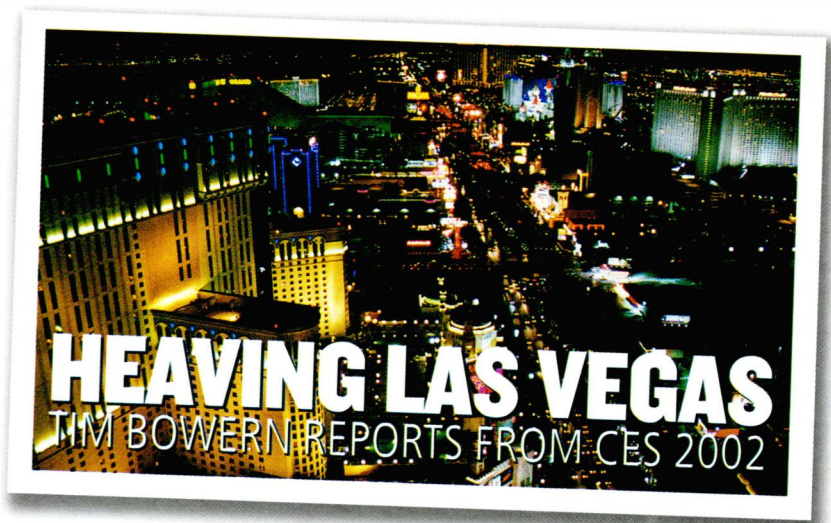
**DVD SALES** more than doubled last year to over 37 million units according to figures released by the British Video Association (BVA) in January. The Association reports sales of 2.4 million DVD players in the

UK during 2001, with 550,000 sold in the run-up to Christmas.

**TAG MCLAREN** has upgraded the performance of its DPA32R preamp to include 192kHz/24-bit DACs. New units will include the upgrade at no extra cost, and existing owners can arrange for TAG to upgrade the unit for a cost of £175. The modification also requires a firmware upgrade that can be downloaded from TAG's website at [www.tagmclaren.com](http://www.tagmclaren.com).  
☎ 01480 415600

**PRESSPLAY** the online music provider is to become the first official subscription service to allow users to download music onto CD-R. Backed by Sony and Universal Pressplay has over 100,000 tracks available.  
[www.pressplay.com](http://www.pressplay.com)

**MYRYAD** has released a new five-channel 100-watt power amp called the MA500. The £1,699 engine features five-line inputs and outputs, and the heavy-grade steel casework sports a 6mm brushed aluminium fascia available in silver or black.  
☎ 0800 652 5002



## LAS VEGAS: JANUARY 2002

Vegas... city of dreams. A theatre in the desert, where money passes like water and glamour burns from the gaudy glow of each electrifying neon light. Vegas is many things, few of them wholesome, but for two weeks each year it has a new purpose: home to the greatest technology show on Earth.

CES is the world's largest consumer electronics expo. Every major player from every related industry is there, attracted like moths to the city's neon glow. It's the most important technology indicator of the year – if you want to know what's going down, what will be pushed towards our homes in the coming years, this is the place to be.

As I write I'm slumped in the seat of a 747 just outside Vegas. The prospect of what lies ahead intrigues me – will I find a world moving inexorably closer to multi-tasking convergence and sonic mediocrity? Where does music stand in technology's new world order? There's only one way to find out...

## OLD AND NEW

The show sprawls over several different venues and I touch down at Alexis Park, home to high-end audio. As I move from room to room, my airborne concerns are vaporised in a wash of crisp, clean sound. Far from a hot bed of high-tech low-fi, Alexis Park is a haven of established audio technologies carried out to the highest specification.

This being the US, there are plenty of exotic tube amps on display. Most look gorgeous and many sound equally sublime, with the likes of **Audio Note**, **EAR**, **Quad**, **Cary** and **Balanced Audio Technology** working wonders for lovers of warm glowing valves.

While surveying such delights, I stumble upon **Conrad-Johnson's**

awesome new **GAT** power amp, the striking new **Logos** integrated with Italian brand **Pathos** and some exquisite hybrid monoblocks from **Full Circle**. But it's not all about valves – there are some fantastic solid state designs on display too, like **Chord's** SPM 6000 Reference monoblocks and some serious heavy metal from **Pass Labs**. Valve specialist **Red Rose** is busy showing off its neat new **Rosette** solid state designs, while those who crave serious power will love **Moon's** mono power amps at 1,000 watts apiece. And if that's still not enough you might try **McIntosh's** staggering 2,400-watter for size.

The Park is equally awash with exotic loudspeakers, few offering any radically new technology but many applying existing methods in stunningly original ways. Ex-**Eggleston Works** man William Eggleston III is showing off his new **WEGG 3** project, featuring several high-end designs with multiple tweeters for improved headroom. Meanwhile, his old company has a new version of the respected **Andra** floorstander, and multiple drive units resurface in the guise of **Pipedreams' mighty towers** – the largest stands eight feet tall and features 21 midrange units and 42 tweeters per box.

There are some amazing speakers here, not a few of which should qualify as works of art, albeit with a precise sonic function. **MBL's** glowing 101D looks like a large Chinese lantern, while the huge horn-based **Phoenix Grand** from **Calix** is little short of a masterpiece (at \$50,000 per pair one would hope so). On the other hand, if you're into multichannel sound and you'd prefer something more discrete than **ATC's** shiny new **Concept 2.5.1** system might fit the bill, or perhaps the rather natty little spherical satellite speakers



**“THERE ARE SOME AMAZING SPEAKERS HERE, NOT A FEW OF WHICH SHOULD QUALIFY AS WORKS OF ART.”**





1) Arcam AV8 preamp/processor 2) Parasound Halo D1 DVD-Audio/Video player plus amp 3) dcs Verdi SACD transport with Elgar DAC 4) La Luce LA Lentoventi turntable, hand-built in the Netherlands 5) Eggleston Works Andra II loudspeaker 6) Pioneer 'Blue Laser' DVD recorder prototype 7) Phoenix Grand loudspeaker (left) 8) Conrad-Johnson GAT power amp.

paraded by Anthony Gallo.

For vinyl fans there are stunning kinetic sculptures from Avid and Clearaudio, along with some interesting aluminium designs from German brand Acoustic Signature and a stunning hand-built deck from the Netherlands called La Luce. Rega's evolution of its top-end Planar sounds rocking, and the guys at Boulder reckon their new heavyweight phono stage is the most sophisticated ever. I think they may have a point.

#### DVD-AUDIO AND SACD

The Las Vegas Convention Centre is where all the non-specialist global brands hang out and most of the new-tech is to be found. Of the new high definition optical disc music formats DVD-Audio would seem to have a higher show profile than SACD, partly owing to Sony's limited presence alongside its major competitors, most notably Panasonic. For a list of the show's new DVD-Audio kit check the box below, but

#### NEW DVD-AUDIO AND SACD PLAYERS

##### DVD-AUDIO PLAYERS

Arcam – DVD-A upgrades for existing DVD players  
Cary D-3p  
Denon DVD-9000  
EAD DVD Master  
Kenwood Sovereign (400-disc megachanger)  
Marantz DV-125I  
Meridian – upgrades for 500 and 800 players  
Panasonic DVD-RP825  
Panasonic DVD-CP72 (five-disc autochanger)  
Panasonic – various micro systems  
Parasound D1  
Parasound D2  
Samsung DVD-A921M (inc Memory Stick slot)  
Samsung DVD-HD1000 (inc hard disc recorder)  
Toshiba SD-4700  
Toshiba SD-5700  
Yamaha DVD-S1200  
Yamaha DVD-C920  
Yamaha DVD-CX1 (five-disc autochanger)  
TEAC Legacy (micro components)

##### SACD

dcs Verdi (transport)  
Linn Kryptik  
Marantz SA-8260  
Marantz SA-14 (two-channel only)  
Onkyo DV-SA1  
Philips SACD 900 (DVD-V compatible)  
Philips DVD 962SA (DVD-V compatible)  
Philips DVD 763SA (DVD-V compatible)  
Philips DVD 920SA (five-disc autochanger, DVD-V compatible)  
Sony SCD-CE775 (five-disc autochanger)  
Sony DVP-NS500 (DVD-V compatible)  
Sony DVP-NC650 (five-disc autochanger, DVD-V compatible)  
**DVD-A/SACD UNIVERSAL PLAYERS**  
Pioneer DV-47A (European version DV-747A)  
Sharp DX-SX200  
Yamaha (prototype)

particularly tasty are new slimline players and tiny micros from Panasonic, Denon's top-line DVD 9000 and the beautifully built high-end Halo range from Parasound, which includes two DVD-Audio/Video players alongside some heavy duty amps. Also interesting is a Marantz machine which offers DVD-Audio/Video playback but no SACD. Its introduction has been made possible by Marantz's newfound independence from SACD co-developer Philips, though continued legal ramifications have forced exceptionally discrete DVD-Audio badging. Expect a Marantz DVD-Audio/SACD universal player later in the year.

New SACD players are thinner on the ground, though several are paraded by Philips and Marantz (see box for a full list). Of great interest is the high-end Verdi SACD transport from dcs, a new SACD/DVD-A player and one-bit digital amp combo from Sharp and the Linn Kryptik, which is likely to be the first SACD player from a UK manufacturer.

#### HARD DISC AUDIO SERVERS

The home-based hard disc server is set to boom over the coming year. All the big hitters are getting involved – Marantz is showing off its DH9300 Music Server, driven by Imerge's internet-enabled XiVA software, while Pioneer's forthcoming Digital Library can store and distribute digital media to multiple zones throughout the house. Samsung and Kenwood are in on the act too – the latter's Entré unit controls its new 400+3 disc DVD-Audio/Video auto-changer and also incorporates a hard disc, CD burner and internet connectivity.

#### DIGITAL A/V RECORDERS

DVD recorders are present in force. All three formats are pretty much equally represented – Pioneer and Sharp have DVD-RW machines, Philips and Yamaha have DVD+RW while Panasonic and Samsung are showing off DVD-RAM. All these recorders are very much aimed at the video market, as is a new hard disc

unit from Philips. Pioneer and Toshiba also give us a tantalising glimpse of the future with working 'blue laser' prototypes – these recorders use sophisticated blue laser technology instead of the usual red for higher definition and four times the capacity of ordinary DVDs.

#### DIGITAL AMPS

Many industry movers reckon bona fide digital amplification is the next logical step in the evolution of digital sound. Several examples are littered around the show, from Sharp's SM-SX200, the first with 5.6MHz sampling, to new pre and integrated designs from high-end digital amp specialist Tact. Yamaha has some intriguing prototypes too, of both two and multichannel varieties.

#### LEAVING LAS VEGAS

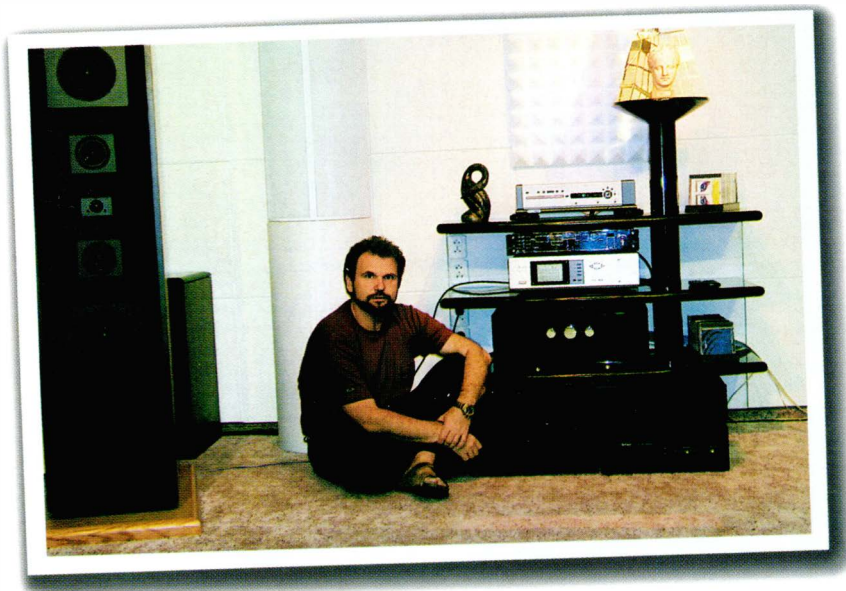
As I turn my back on this show of shows, my thoughts turn to the future. A future of choice, where internet-enabled hard disc and solid state audio mixes with high-end disc formats and conventional hi-fi gear. The choice will continue to broaden in the coming years, but the need for high-level sonic performance remains. It's going to be fun...

#### THE BRITISH ARE COMING

It's good to see a strong British contingent at the show, particularly speaker manufacturers. On the electronics side, Myriad is introducing its smart-looking Z-Series components, Talk Electronics has an upsampling CD player and Linn is showing its Klassik Movie System – a DVD player, tuner and multichannel amp in one compact box. Arcam also has some very tasty new gear: the AV8 multichannel preamp/processor and P37 seven-channel power amp, both due for a May launch at £2,500 apiece, along with its new £350 CD62 CD player and the FMJ A32, a stereo integrated amp which replaces the A22 at £1,100. Arcam's DVD-Audio upgrade boards for its existing DVD-Video players are also nearly ready, out in May with a projected price of £350.

#### NEW BRITISH SPEAKERS

Acoustic Energy – entry-level Aegis Evo range  
Castle – new Classic range  
Epos – M5 'satellite', M8 centre speaker, prototype mini monitor  
KEF – new Reference Series  
Mission – replacement for 77 Series  
Ruark – Contemporary II range  
Tannoy – entry level mX-M range



Sergej with his hi-fi system. Note the Tube Trap behind him and either side of the listening seat (far right). You can also make out Sergej's name on the ASR Emitter amplifier.



# TENOR'S LAW

SERGEJ LARIN, WORLD-RENOWNED TENOR, TALKS TO IVOR HUMPHRIES ABOUT THE HI-FI SYSTEM HE CREATED TO REPRODUCE MUSIC FROM PUCCINI TO PINK FLOYD.

**Y**ou may have been in the same room with, may even have talked to, one of the today's top tenors without realising it. In the past decade Sergej Larin has graced the stages of opera houses across Europe and in America, from Milan's La Scala to New York's Metropolitan and all points in between. He's the first Russian to be awarded Italy's Golden Verdi Medal. But he's also an avid and extremely knowledgeable hi-fi enthusiast, a devourer of audiophile magazines and, when his diary permits, a regular visitor to high-end hi-fi shows. He'll be found in earnest discussion with fellow enthusiasts and exhibitors, talking away in any of eight languages. Bump into him here and you may well not hear about his 'day' job.

Larin was born in Russia in 1956. Languages and vocal training at university and conservatoire led to early success in *La Traviata* at the Vilnius Opera in Lithuania, but his international breakthrough came in 1990 at the Vienna State Opera in the role of Lenski in *Eugene Onegin*. His passion for hi-fi began towards the end of the LP era. "My first complete opera I bought in

France in 1977. It was *Tosca* with Montserrat Caballé and José Carreras, conducted by Colin Davis. I also had some records of singers such as Kiri Te Kanawa, Plácido Domingo, Luciano Pavarotti and Joan Sutherland." Standard fare, perhaps, for someone of his musical leanings, but then he adds: "My first Pink Floyd LP was *Wish You Were Here*. Then came *The Wall*." He's also a home cinema enthusiast and has a passion for soundtracks.

"My first LP player was of Soviet production – a direct-drive model. It was not so bad but I heard the rumble. My loudspeakers were also Russian. I was never happy with the sound, especially with the medium part of the spectrum – it was veiled; so I made some changes to the crossover. I had a lot of articles from specialist magazines, some with calculations. I improved the sound very well at this time. I also changed the drive units and bi-wired the crossovers.

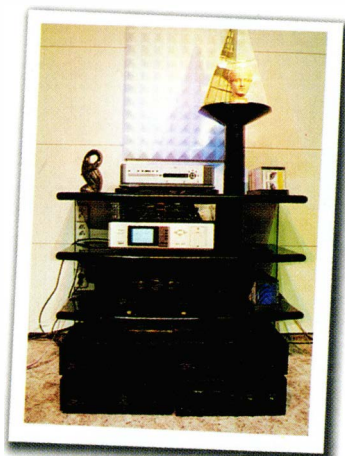
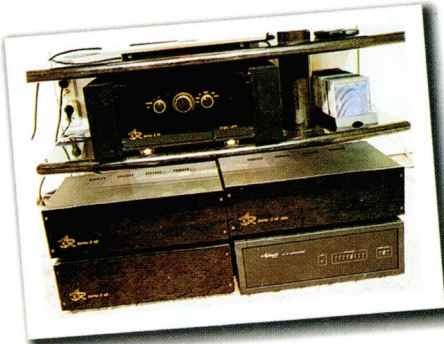
"When I came to Bratislava I had a long time with practically no big equipment. My next step forward was with loudspeakers. I bought a model of Mirage – the M7C. I heard it at a show in Florence. I was very impressed by the sound, very natural and very smooth. I

had the M7Cs for a long time before I upgraded to the flagship, the M1C. For three years I used these together with two Mirage BPS200 subwoofers. That was one of the best subwoofers ever made. I was very happy with the sound. My next step was to the Dunlavy SC-V Signatures I use today. It's very difficult to find something more accurate, more precise than this."

## THE SYSTEM

The front end of his system comprises a Proceed PMDT transport, Burmester 980 SRC D/A converter and German ASR Emitter II battery-powered integrated amplifier – a minimalist MOSFET design rated at 280 watts per channel into eight ohms but capable of 900 watts into two ohms and almost twice that into one ohm. Cabling is by Nordost: Quattro for the interconnects and Flatline for the speakers. There's also a Nightingale CR 1200 mains conditioner.

The listening room was specially created. The floor area is some 36 square metres with the listening seat about one third of the way forward of the rear wall rather than the usual 'optimum' of one fifth. Acoustic fine tuning is applied by Tube Traps which help control initial



reflections off the rear wall.

Modern digital signal processing enables elaborate tonal manipulation to be performed without the phase anomalies and signal degradation which gave analogue equalisers such a poor name. Larin has embraced the possibilities afforded by an Accuphase DG-28 Digital Voicing Equalizer which is connected between his transport and converter. With its companion microphone this 1/6th-octave (64-band) unit can analyse and correct for room anomalies automatically and can store up to four groups of settings.

"Yes, but I do my own settings because if I use the normal classical 'flat line' it's a very bad sound in my room. Our hearing is not flat. First of all I lift the bass below 30Hz so that when you have real 20Hz notes, maybe organ music, you feel it in a believable way. It's so clean and so powerful. The sensitivity of the ear in this part of the range is not so strong. For the rest of the range I have two main settings. One is suggested by Accuphase, rolling off slowly above two kHz. The other I found myself, reducing quite a lot between three and five kHz where the sensitivity of the ear is

greatest, and then going back up to a maximum at 22kHz. Generally I prefer this setting. I'm a very big sound picture fan... imaging, yes, this is very important. So I have the loudspeakers 1.8m from the end wall – it's very far, but I also have a very good subwoofer: the Audio Physic Rhea."

#### THE BIG PICTURE

"I'm a very difficult person with hi-fi. What do you usually hear in high-end rooms at hi-fi shows? You hear quiet jazz music. That's OK – it's not so difficult to reproduce three, four or five instruments well. The challenge is with a recording of a big symphony orchestra with terrific dynamics; so often the sound then is compressed or congested. In my system it's never limited like that – the character of the sound never changes. You hear everything. The only restriction is the quality of CDs."

Is he tempted to involve himself in engineering matters at recording sessions? "No I never do because they are professionals, they have a job to do. It's very difficult, you know, because to make a realistic sound – of an opera maybe, or of voice with orchestra – I

#### LARIN'S SYSTEM

- Dunlavy SC-V Signature loudspeakers
- Audio Physic Rhea subwoofer
- ASR Emitter II battery-powered integrated amplifier
- Proceed PMDT transport
- Burmester 980 SRC D/A converter
- Nightingale CR 1200 mains line conditioner
- Accuphase DG-28 Digital Voicing Equalizer
- Nordost Quattro cables (interconnects)
- Nordost Flatline cables (speakers)

think you should use one-point recording with the microphones. With many recordings it's a little bit artificial because you feel the soloist is too far forward, the orchestra too far behind. I'm never happy with this sound. Never completely satisfied.

"I don't like to listen to myself, no. A recording is fixed, like a Polaroid. Now if you do a recording with an orchestra you have a huge programme, so you have five-hour recording sessions every day. It's very difficult. I made recently a new recording for Arte Nova. It will appear in January for the premiere of *Manon Lescaut* in Munich. I had five days of recording. Sixteen arias. Every day after the recording session I thought 'No, no, it's impossible. I hate recording'. But now it's a little bit better!"

**"EVERY DAY AFTER THE RECORDING SESSION I THOUGHT 'IT'S IMPOSSIBLE. I HATE RECORDING'."**

**“THE DAC 64 HAS  
THE POTENTIAL TO  
SIGNIFICANTLY  
ENHANCE STEREO DVD-A,  
WHICH IS A BLESSING.”**



The DAC 64 is housed in a solid aluminium casket and is fitted with an array of in and output options, not to mention a pair of unmarked input switches – don't lose the manual!

# THROUGH THE LOOKING GLASS

CHORD'S STYLISH NEW DAC CERTAINLY HAS MILLION DOLLAR LOOKS, BUT DO THE RESULTS JUSTIFY THE COST?

REVIEW JASON KENNEDY

**C**hord Electronics is, if nothing else, well versed in the art of funky casework – the DAC 64 has to be one of the most elaborately encased digital to analogue converters ever produced on these shores. The base and sides are one piece, the internal volume having been milled out to produce a virtually bombproof casket for the electronics inside. Or at least it would be bombproof if it didn't have a porthole with a lens in the top; the effect is rather good in low-lit surroundings, but whether it's of any sonic or practical advantage is debatable. Still, if you're going to make a box with just a digital-to-analogue converter inside, it may be best to make it an attractive one if you're hoping to sell it for £1,900.

The converter itself is a 64-bit, 192kHz oversampling device which is coupled to "a radically new type of filter called the Watts transient aligned filter" – at least that's what it says in the manual (see Paul Miller's lab report over page). Its main feature is a digital buffer or bit reservoir which can be switched between minimum and maximum buffering or off. This allows the data to be re-clocked as it passes out of the buffer with the minimum of jitter. You can tell which buffer setting is switched on by the delay between pressing play and hearing music – on the max setting this is around five seconds, with three at minimum.

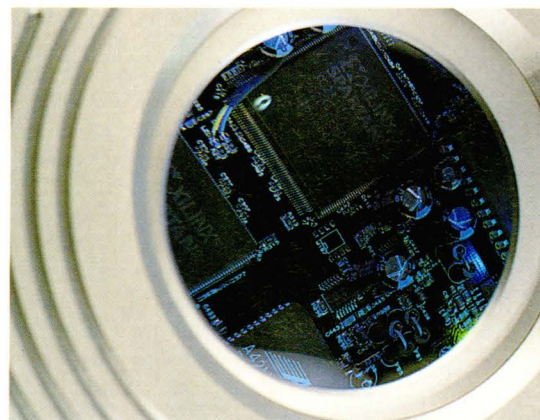
Feature-wise, one side of the casket supports a good array of sockets and a couple of switches. The digital connection to your disc player or transport can be made with BNC or XLR (AES/EBU balanced) equipped coaxial cable or Toslink terminated optical fibre. Everything in fact except the preferred method of most player manufacturers – the RCA phono plug. This is because the phono plug is not a proper 75-ohm

connector, but Chord appreciates that as the DAC is averse to phono to BNC converters it needs to supply a phono to BNC lead which the Chord Company (no relation) will be making. There is an optical lead in the box already but despite its fine technical proficiency this connector has never been popular with listeners and I used a (admittedly unconventional) phono to XLR lead until the DAC got fed up with it. Apparently it's a bit sensitive about how you hook it up and this pseudo-balanced arrangement caused a lot of random relay activity inside the unit. I went back to the reel of Toslink.

The analogue output is via balanced XLRs or regular phonos, so no compatibility issues there.

## SOUND QUALITY

First off, I investigated the buffer switching which, as with many Chord products, is not labelled on the case and therefore requires the manual to set up. Having said that, it's likely that having heard the effect of none, minimum and maximum buffering most users will opt for the max setting and leave it there. The difference between none and minimum is quite unsubtle, the latter sounding a lot more natural ▶



The DAC 64's circuitry is visible through the lensed porthole and well lit.

# CHORD ELECTRONICS DAC 64 DIGITAL TO ANALOGUE CONVERTER



Electrical digital signals get into the DAC64 via the BNC connector (above) or an XLR socket. But analogue connections travel via the phono route (top).

and relaxed and the max setting offering the best performance of all with greater depth of image and better low-level resolve.

Before my digital connector troubles I compared coax and optical links and found the latter to be wanting by comparison, the electrical lead bringing more detail and a greater sense of naturalness to the music. Most listening was done via the optical lead for the reasons listed above.

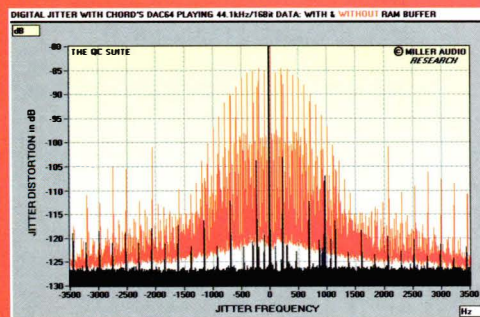
One advantage of this device is its ability to play DVD-A discs, albeit only in stereo. As there have so far been no hardcore DVD-A players on the UK market this is an opportunity to hear what the medium is capable of and I was a bit peeved to find that half my software was out on loan to other reviewers! However, The Doors' *LA Woman* sounded very impressive, plenty of energy and dynamics making it considerably more listenable than usual. The Pioneer 939A DVD-A player sounds full and fruity next to the DAC 64, lacking its leading edge definition, precision timing and bone-crunching bass. The DAC 64 did the same trick with CD, adding space and air to its relatively lean balance and making for a more engaging experience. In one instance this had the effect of making a disc sound unusually hard but I'm inclined to blame the recording rather than the converter as it didn't occur again.

I did a fair amount of comparisons between the Pioneer and a Sony SCD-555ES SA player used as a transport with the optical lead. Did the variation in transports have a significant effect on the end result? Not much. Even though these two players have quite different characters on their own, when their digital outputs were played through the DAC 64 the sound was pretty much the same. Further to this was the finding that although the Pioneer was clearly improved by the addition of the DAC the Sony was not enhanced by the sort of margin that one would expect for the outlay required.

## CONCLUSION

This is an interesting DAC with some fabulous casework but I get the impression that the optical connector does not allow it to give of its best and would suggest that anyone interested in hearing it make sure that the dealer has the Chord Co cable that's been promised. On the other hand the DAC 64 has the potential to significantly enhance stereo DVD-A, which is a blessing. It also looks capable of turning mouse-like transports into more manly ones. On the other hand the pricing would seem to preclude its use with budget players and the performance thus far does not offer a great advantage over one-box machines of a similar price, which makes it difficult to recommend.

£1,900, Chord Electronics ☎ 01622 721444



## LAB REPORT

At the heart of Chord's DAC 64 are three XC100 FPGAs (Field-Programmable Gate Arrays) which, together, execute the code stored in an EPROM to yield the full 'digital circuit' of this converter. This includes the S/PDIF digital input receiver, digital filtering, a RAM buffer to reduce jitter and two Pulse Array DACs. The use of an EPROM means that software upgrades are easily accommodated, but the claimed compatibility with 192kHz data is something of a red herring as no 192kHz digital output equipped sources are currently available on the domestic market and, if and when they are, the DAC 64 lacks the appropriate hardware interface.

The digital filter is highly advanced, however, and offers a significantly steeper attenuation of digital images than any competing design (theoretically >165dB, limited to >110dB by analogue noise). This and the low 70-ohm output impedance, bodes well for the combination of the DAC 64 with almost any amplifier.

The Pulse Array DACs, meanwhile, employ 32 switched elements which, not unlike dcs's Ring DAC technology, enjoys the benefits of one-bit operation (excellent low-level linearity) while 'averaging' out distortion and noise at very low signal levels. Distortion is typically 0.001% through bass and midrange, increasing to 0.016% at 20kHz (48kHz data) and 0.02% at 40kHz (96kHz data) while its resolution holds true to +/-1dB over a 100dB range. The response is just -0.6dB down at 45kHz with 96kHz/24bit digital sources and -0.1dB at 20kHz with 48kHz DVD or 44.1kHz CD sources.

The RAM or FIFO (First in, First Out) buffer holds irregularly-timed data in a loop before clocking it back out against a precision reference, prior to D/A conversion. This explains the slight time delay experienced on test, though as there's no functional difference between either the one or four second buffer, I'd stick to the former. During the production phase, Chord equipped the DAC 64 with its trademark switch-mode supply, which may explain the substantial increase in supply-induced jitter, amounting to 8570psec with 44kHz/16bit data (see graph above, red trace) and 2100psec at 96kHz/24bit. Switch in the RAM buffer and this drops to 500psec (see graph, black trace) and 110psec, respectively, fundamentally improving both its technical and subjective performance. So, until Chord addresses this issue, the use of its RAM buffer is not an option but a necessity if the DAC 64 is to achieve anything close to its full potential.

Paul Miller

www.tagmclaren.com

# TAG McLaren



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192kHz/24 bit  
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*Hi-Fi World - 10/2001*

"TAG McLaren describes the DPA32R preamplifier as unique, and given its versatility and potential facilities, this is no exaggeration....I checked out the analogue stages first and found that the volume control had outstanding precision and resolution...the combination with the 100x5R/2 providing crisp stereo image focus, rated 'good plus' with above average dynamic expression ... It's not hard to conclude that the DPA32R is well engineered and provides solid performance for a fair price."

*Hi-Fi News - 10/2000*

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*Stereoplay - 11/2000*

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*Audio - 11/2001*

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#### Best Recording

Signals can be cross-converted between digital and analog, allowing perfect analog and digital recording.

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Volume control is carried out by analog circuitry, providing a fully analog path from input to output for analog sources.

#### Multilayer circuit board

A multilayer board controls the complex pattern of return currents and provides controlled impedances for the high speed digital signals, resulting in improved signal to noise ratio.

#### Premium Grade Audio Components

No-compromise premium grade audio components are used throughout.

#### Minimal Jitter

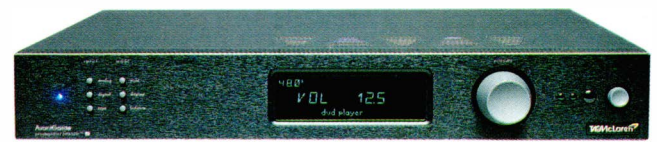
A precision twin phase-locked loop reduces jitter to an absolute minimum, while the TAGtronic Sync Link sends a signal to products, designed for this technology, to synchronise their clocks to the master reference within the DPA32R. The result: even better sound!

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The DPA32R is fully remote controlled. Its custom-designed display features our 'Dot Burst' layout for increased legibility. Inputs have descriptive names and analog inputs adjustable sensitivity.

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The TAGtronic Communication Bus allows easy software upgrades and sharing of information for powerful communication between components.



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- |  |  |   |   |   |   |   |   |
|--|--|---|---|---|---|---|---|
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|--|--|---|---|---|---|---|---|



# SILVER TONGUED DEVILS

NAD'S FIRST HIGH END MULTICHANNEL AMP COMBO HAS PLENTY OF TRICKS UP ITS SLEEVE.

**n** AD's Silverline range represents the brand's highest aspirations. Launched in late '98 with the S300 integrated amp and S500 CD player, it combines NAD's value-for-money ethos with high-end internal design and casework. The £3,500 S170 processor/preamp and £2,200 S250 five

channel power amp represent NAD's most ambitious components to date, and pits the brand against some of the finest on the market.

Setting up the system was inevitably less straightforward than the stereo kit I'm used to and I was prepared to read the manual for the processor/preamp itself, but didn't expect to be doing the same for the remote! The S70 remote

is a die cast stick with a big LC display and multifunction buttons that operate three tiers of functionality. This explains why it's missing the flight deck look of most AV remotes, though it doesn't make operation any simpler. I did try using the manual but in the end the trial and error technique produced results, and that's what you want after all.

The back panel of the S170 processor, though well stocked, is not as alarming as your average AV receiver. There are plenty of in and outputs for both audio and video, a total of nine for analogue audio and six for digital with video socketry for composite, S-video and component video systems both in and out. For the multichannel sound seeker there are 7.1 outputs alongside 5.1 inputs, (7.1 is a purely AV standard, and the incoming signal arrives via digital input from a DVD-V player). When you use the S170

REVIEW JASON KENNEDY



**“STEREO SOLIDITY CAME THROUGH APLENTY WITH GOOD STRONG IMAGING AND NO SHORTAGE OF SPACE IN THE SOUNDSTAGE.”**

with DVD-A or SACD it effectively becomes a purist multichannel preamp – the tone and surround mode controls are bypassed leaving only the volume control in the signal path. Which means that any processing or bass management has to be done at source.

As the current crop of multichannel players have rather limited controls in this respect, set-up can be a little tricky. Ultimately you need to be more flexible with speaker positioning with DVD-A and SACD than you do with Dolby Digital and DTS, but the lack of compression means it's worth it.

Using the preamp with a stereo source (eg CD player) there are alternative modes available, including mono which is sent to the centre channel only, Dolby Pro-Logic and EARS, NAD's proprietary surround processing system that's designed to translate acoustic music recordings into a realistic surround experience.

The S170 is an immensely flexible processor, as detailed in the rather chunky manual (the English language section runs to 28 pages), which covers everything up to and including software upgrades via the RS232 port. Unusual features include the ability to assign digital inputs to any of the analogue or video inputs that are displayed on the dot matrix screen, 24-bit DACs on all channels, a BNC digital input for high-end video or audio transports and three 12V triggers for remote switching of other components in the system. Not to mention a multi-source second zone output, albeit in stereo only. Oh, and did I mention tone controls and the ability to set up alternative balance/channel level combinations to suit different material, ie movies and music? Thought not.

The S250 power amp is blissfully straightforward by comparison. Its features stretch to THX Ultra spec, variable gain for each channel and NAD's old favourite 'soft clipping' which stops you blowing speakers up when things get exciting. It weighs in at 19kg and is specified at 5x125 watts or 2x200 watts per channel into eight ohms, which should satisfy most room/speaker combinations. Its monoblock-style, modular construction means that only the toroidal mains transformer is shared between the channels, which should mean that the output power claims are fully met in practice.

**SOUND QUALITY**

With all this complexity on board, does this pairing stand a chance of producing decent quality music? Happily the answer is yes. Thanks to the analogue Bypass mode your two-channel CDs take an extremely direct route through the preamp missing out any processing and using the S170 much like an all-analogue preamp. Compared to a more hardcore hi-fi preamp (the ATC SCA2 for example) the NAD sounded relaxed and smooth, lacking the edge-of-your-seat grittiness of the ATC but resolving detail with considerable finesse and in a fashion that's likely to suit a good variety of loudspeakers. Stereo solidity came through aplenty with good strong imaging and no shortage of space in the soundstage. Timing is likewise very good, better than many in fact, and this despite a neutral balance that doesn't lean on the leading edges the way other rhythm and pace-oriented preamps can.

The S250 equals its partner in the timing

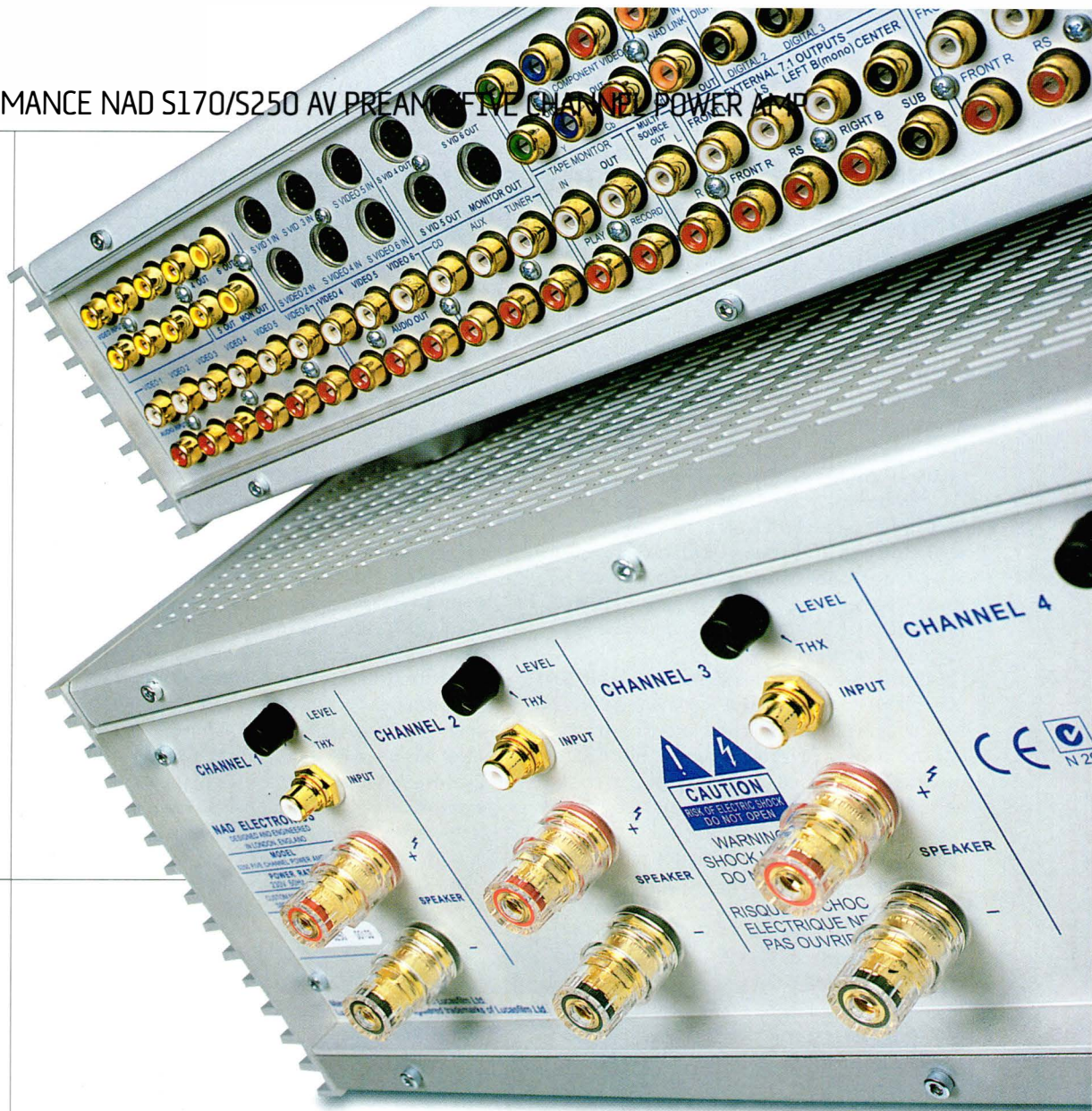
department and likewise produces plenty of detail and space for music to breathe in. Compared to a more expensive two-channel power amp there is some shortfall in the dynamics department, the ability to track the level of the various elements within a piece not being as well refined. The most obvious sign of this is the need to turn the wick up more than usual in order to release the energy in the music. That said, when given the contemporary jazz beats of Norwegian pianist Esbjörn Svensson to deal with, the results were simply stunning.

My stereo listening was carried out with the reference Living Voice Avatar loudspeakers which revelled in this amp pairing's abilities. However, in order to assess them fully I used a new set of Cyrus CLS50 speakers. These are relatively compact and feature far smaller mid/bass drivers but by dint of sheer numbers (six mid/bass cones in all) they managed to produce nearly as much bandwidth as the LVs and proved a good match with the power amp.



The discreet D70 remote runs a myriad functions with the aid of a multilayer logic system and LC display.

# HIGH PERFORMANCE NAD S170/S250 AV PREAMP/FIVE CHANNEL POWER AMP



The rear panels are comprehensively equipped, right down to individual level controls on each channel of the S250 power amplifier.

If anything the CLS50 is a slightly forward-sounding design which went well with the refined S250.

With the better DVD-A and SA surround material the results were superb, even a less than spectacular Daniel Barenboim DVD-A was brilliantly rendered. The SACD choral classic *Sacred Feast* by Guadeamus stretched the speakers to their limit when the high crescendos came in but the engineer's decision to use the sixth channel for height information, requiring an overhead speaker, seems to be excessive given the stature you can achieve with five channels at a conventional height.

The system proved more than able to elucidate the advantages of SA over CD, the extra detail at all frequencies and the fundamental naturalness of the format being plain to hear.

With encoded material (Dolby Digital, DTS) you don't seem to get as much perceived compression as with less expensive decoders. There's not the chalk and cheese discrepancy between CD and DVD for instance and I had more fun with my music DVD-Vs than ever before – I even played the ones I don't like just to

hear them at their best. But not for long!

One practical factor which surprised me was how close to the volume range's end-stop I was running the system, yet not playing at breakneck volume. It could be that the Cyrus speakers are a difficult load but the specs don't suggest it. Maybe there's a preamp gain control that I couldn't find in the manual...

## CONCLUSION

NAD's Silver series processor and five channel power amp sounds better to me than the original Silver series stereo combo did when it came out. It has similar traits but the extra money spent on this pairing has not all gone on the digital bits, something has also been done on the analogue side. In the S170, NAD has a processor to take on the likes of TAG McLaren, Bryston and maybe even Lexicon. It costs a lot but top-flight AV processors usually do. If you're in the market for a serious multichannel surround system and want to get the best from movies too these components definitely deserve your attention.

S170 £3,500, S250 £2,200, Lenbrook UK ☎ 01908 319360

# Seriously Well Equipped

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# SMOOTH OPERATOR

SOME CD PLAYERS DEMAND YOUR ATTENTION AND FORCE THEIR PERSONALITY ON YOUR MUSIC. THE MERIDIAN 588 ISN'T ONE OF THOSE.

m

eridian is a company that by repute fits comfortably into the 'high-end' bracket where audio design is concerned. For many the Cambridge-based company produces truly aspirational equipment, but its products are by no means out of reach for the determined music lover.

REVIEW DAN GEORGE

What sets Meridian apart is its expertise in digital processing, which led to the firm's involvement in the development of DVD-A and the incorporation of MLP (Meridian Lossless Packing) coding into the format's standard. This is a type of compression which enables six channels of 96kHz/24-bit music to happily reside on a single DVD-A disc without any loss of data.

Meridian's achievements with the technology have reaffirmed its position as a pioneer in

digital signal processing. So who better then to produce a new CD player?

Meridian has made over 20 CD players in its 17-year history, and this latest model promises to be the best yet. The 588 has evolved from the 508 CD and 500 CD/DVD players, and incorporates some interesting new technologies.

The use of a DVD-ROM drive was developed for the brand's range-topping 800 series, the claim being that it offers more precise pick-up of data with CD and CD-R. ROM drives tend to be more accurate as computers demand incredibly fast data transfers, in fact the 588 drive often reads data more than once just to be sure! Data leaving the ROM drive passes through three large memory buffers, smoothing things out and minimising jitter. 192/24-bit DACs are employed for the analogue output, and data is re-clocked again at the digital output stage.

Build quality is first-class both outside and in,

with six-layer PCBs and seven separate power supplies under the lid. Classic Meridian styling hasn't dated despite the plethora of silver boxes that decorate dealer showrooms nationwide. The slender vertical fascia buttons are distinctive, and the textured enamel casework with smoked glass reeks of class. Meridian's enormous system remote has the proportions of a midget's laptop, and excellent functionality. Despite its size I found it a joy to use and with its dual IR output, the most effective remote control I've used. A host of additional Meridian equipment can be controlled from the unit and the player's comms port allows full system integration. The 588 also has both optical and digital outputs, as well as standard and balanced analogue outputs. An RS232 port allows PC connectivity for future software upgrades, and it's well worth pointing out that Meridian kit uses components and software that are designed from the ground up.



That's no ordinary disc drive, the cut out gives away its CD-ROM origins.

## "ITS MOST STRIKING QUALITY IS ITS NEUTRALITY - IT ENJOYS A DECEPTIVE ALLURE THAT BEGUILES THE LISTENER FROM THE OFF."

### SOUND QUALITY

Some earlier Meridian CD players have been criticised for sounding 'safe' which may not be a problem for everyone, but it could prompt some to search elsewhere for excitement. Initially I found the 588 slightly lacking in dynamics and punch and there was some hesitation in coming forward. But, with time these observations faded somewhat as I began to appreciate what the 588 is all about. Its most striking quality is its neutrality - it enjoys a deceptive allure that beguiles the listener from the off. It's extremely clean and well mannered; vocals are smooth, very three-dimensional and solid within a big, wide soundstage and with a real sense of acoustic space.

The 588 times very well, but not with the energetic insistence you might expect. Most significantly bass transients are very rapid and well controlled across the frequency range; drums are tight and basslines tend not to hang around. Madonna's *Music* impressed through this player; heavy basslines and drums were lightning-quick and very well controlled. It's a detailed player for sure, not super-high resolution but it uncovers solid, well-defined information straight down the line of neutrality. And this means you can listen for hours with no fatigue, which is a very good sign.

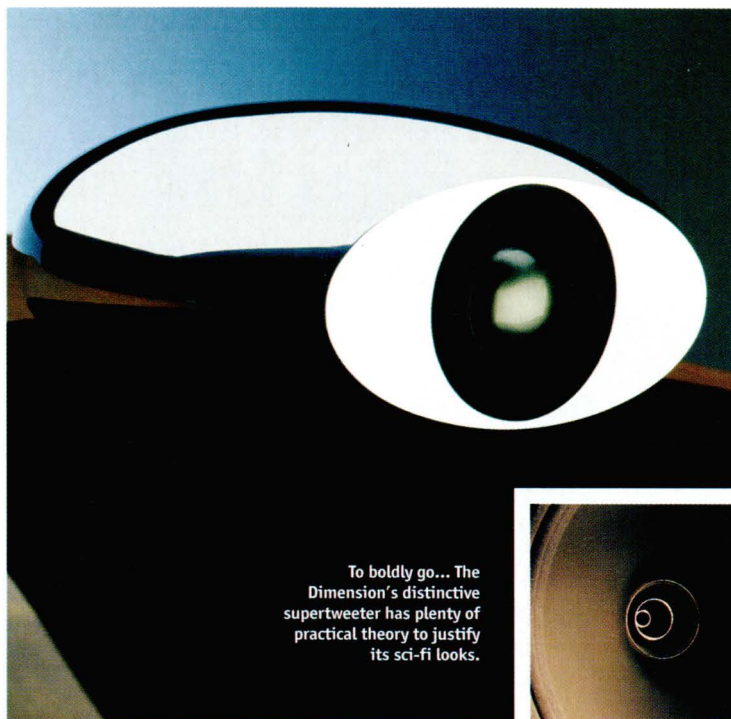
### CONCLUSION

This is an amiable CD player which I expect will make a great all-rounder due to its neutrality and its capabilities with detail and timing. Agreed you may find more energetic and exciting performers elsewhere, but you'll be pushed to get the slick performance offered by the 588, a player that really reels you in unawares. Whether it's significantly better than the best of the competition out there is questionable, but you're paying for a class act; a reputable CD player built from scratch using some very innovative technology. Build, looks and functionality are very impressive as is the performance. You'd need a lengthy audition to appreciate what it's capable of. Leave a deposit and see if your dealer will let you take it home for a week or so.

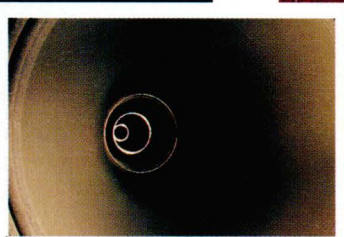
£2,100, Meridian ☎ 01480 434334



The 588's remote comes with its own rack mounting (we're joking, we're joking).



To boldly go... The Dimension's distinctive supertweeter has plenty of practical theory to justify its sci-fi looks.



# THE TWELFTH DIMENSION

TANNOY'S TOP OF THE RANGE  
SPEAKER IS A BIG BEAST WITH  
A GENEROUS SOUND TO MATCH.

t

annoy's Dimension loudspeakers have roots that go all the way back to the 1940s, yet also represent a thoroughly modern reworking of a fundamentally classic format. The largest of three models, the £6,500 TD12 with its 12-inch (300mm) main driver is big brother to the £5,000 TD10 (reviewed by Dan George in *HFC* 215), and the £4,000 TD8.

Although the driver and enclosure sizes change dramatically, all three are essentially two-way designs based on the dual-concentric drive units which have long been a Tannoy speciality, but elaborated by an additional supertweeter operating beyond the theoretical limits of human hearing. All have high-class finished

enclosures with stylish Art Deco overtones.

The TD12 is a bulky beast to be sure, but there's no way of avoiding that if a 12-inch main driver provides the starting point. Those seeking discreet lounge-friendliness might well find the much smaller TD10 or the positively cute TD8 rather happier solutions. But there's something about a big driver. It's probably to do with its extra headroom and consequent freedom from stress and strain, since the larger the cone area, the less it has to move to generate a given sound level. (A 12-incher has nearly twice the cone area of a ten-incher, and almost three times that of an eight-incher.) The obvious analogy is with car engines: there's no need for a large engine to power a modern car, but it makes for a more relaxing and low-stress motoring experience.

Combining an unusual mixture of real wood,



Big guys don't have to try so hard: the larger the cone area, the less it has to move to shift air.



EDITOR'S CHOICE  
**HI-FI CHOICE**  
 magazine  
 ★

**"THIS IS AN EXPENSIVE SPEAKER, BUT MANY DESIGNS COST MORE, AND FEW CAN BETTER THE INGREDIENTS AND BUILD QUALITY."**

polished stainless steel and black velvet, you'll have to make up your own mind about the styling, and how well it will fit into your lounge scape. But whatever your views on the aesthetics, it makes plenty of sense from a form-follows-function point of view. To mount a 12-inch dual-concentric driver at seated ear height necessitates a wide and tall loudspeaker, and to reflex-load such a large driver properly also requires a large enclosure – 130 litres in this case. The tilted top and base, and strong front-to-rear tapering will help avoid the standing waves created between parallel faces. A very minor quibble is that, because the back is narrow, it proved quite tricky to adjust the deep-set rear spikes to achieve true four-point stability.

This is an expensive speaker at £6,500, no question, but many designs cost more, and few

can better the ingredients and build quality found here. With a total weight of 49kg, the box is made up from thick birch ply covered in a top quality cherry real wood veneer.

At the heart of this speaker is the latest incarnation of the famous dual-concentric main driver, a uniquely Tannoy device that originally appeared in 1948. A two-way unit built on a single substantial cast chassis, this driver combines a large conventional bass/mid cone with a horn-loaded tweeter that fires through the centre of the main cone. Using the established 'tulip waveguide', this horn has a nominal 90 degree radiating angle.

Though smooth enough to imitate moulded plastic, the bass/mid cone is made from traditional paper, while its surround is a real 1950s throwback, using impregnated cloth to



avoid the hysteretic (energy storage) effects of synthetic rubbers. This doesn't offer as much damping as rubber, but is reckoned to sound 'faster' especially in the bass.

The terminal block is equally unusual, with five chunky WBT socket/binder terminals arranged in a circle. Four provide bi-wire/amp access to the bass/mid and tweeter drivers, while the fifth is for earthing the main driver frame back to the amplifier ground connection, so that it doesn't pick up any RF (radio) signals or create these in the voice coils. Tannoy sources (from LFD) its own Reference five-conductor cable to match the Dimension loudspeakers sonically, this conveniently makes the extra earth connection. The crossover point from bass/mid to treble is at a relatively low 1.1kHz here, the crossover network using top quality components made to precise values.

The most visually striking – and technically contentious – feature is the supertweeter. This looks like any normal 25mm dome tweeter, but is mounted in a hewn-from-solid aluminium billet, and set back on the sloping top surface of the enclosure to time align with the horn tweeter. It only comes in at a nominal 14kHz, which is close to the top limit of human hearing, and has a claimed usable bandwidth extending to 50kHz and beyond.

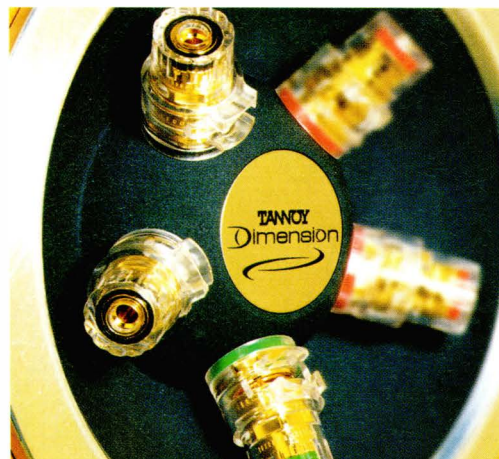
Simple in-room measurements confirm Tannoy's claim for a generous 92dB sensitivity rating alongside a reasonably benign amplifier load. The overall balance is unusually flat through the upper midrange and treble, without the presence 'dip' shown by most conventional speakers, while the bass is both warm and rich yet free from midbass boom, with decent extension (20Hz at -5dB in-room).

## SOUND QUALITY

That unusually flat and smooth mid-to-treble is immediately obvious in this speaker's lovely openness and superior neutrality, especially when reproducing speech. It's a characteristic that's less commonly found than many believe, and should be more highly valued, partly because the speaker can remain fully intelligible even at whisper-quiet levels.

However, the TD12 also sounds distinctly different for another reason, which is all to do with the ratio of direct to reflected sound that reaches the listener (discussed in some detail in my column in *HFC* 221, December 01). Tannoy's horn-loaded tweeter radiates sound across a much narrower angle than a conventional panel-mounted dome device, and its large bass/mid driver diaphragm will also tend to focus the midband in a forward direction.

Compared to most regular loudspeakers, the sound is richer in phase-coherent direct sound, but weaker in room-reflected sound. As a result, you get a more precise, accurate and detailed 'window' onto the actual recording session, but



a weaker tendency to create the impression that the musicians have joined you in your listening room. As a tool for monitoring your recorded music, it's hard to argue with the superiority of Tannoy's approach, but hi-fi is a broad enough church to embrace various philosophies in the way it presents music, and there's really no absolute 'right' or 'wrong' involved here. Rather it's a matter of personal taste and preferences.

This is very much a 'sit down and listen' loudspeaker. Settle down into your favourite armchair, carefully positioned on the stereo sweet-spot, and you'll be rewarded with a beautifully constructed and precise image with generous weight and scale, and a magnificently wide dynamic range. The bass is authoritative and superbly free from colour and overhang, showing impressive powers of analysis with the complex textures and figures found on modern dance material, such as Basement Jaxx's *Remedy*.

The treble has its own special quality. Quite distinct from the typical 25mm dome, its magnificent headroom and freedom from strain is particularly obvious when punching out a brass ensemble. And the supertweeter plays its part too, sweetening and opening up the top end in its own subtly seductive way.

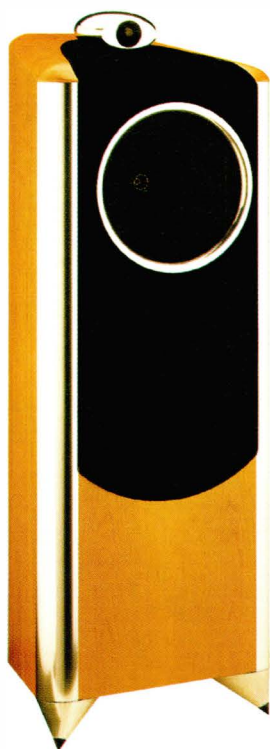
Although I heard some midband boxiness and a slightly 'hollow', 'paper cone' quality when using my regular Naim NACA5 cable, this seemed magically banished by substituting the (much more costly) Tannoy Reference cable. Although an expensive accessory (at around £1,000 for two 4m terminated lengths), this cable is definitely worth serious consideration.

## CONCLUSIONS

Exceptionally accurate, neutral, transparent and involving, the TD12 has the all-round magnificence that befits a genuine state-of-the-art contender. Its tendency to favour direct over room-reflected sounds provides an unusually clear 'window' onto both the programme material and the rest of the system.

£6,500, Tannoy ☎ 01236 420199

**“THAT UNUSUALLY  
FLAT AND SMOOTH  
MID-TO-TREBLE IS  
IMMEDIATELY  
OBVIOUS IN THIS  
SPEAKER'S  
SUPERIOR  
NEUTRALITY,  
ESPECIALLY WHEN  
REPRODUCING  
SPEECH.”**





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# FORUM LETTERS

The Marantz DR6000 is compatible with all Red Book CDs.



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**"THE DISCS WILL NOT PLAY ON MY PC BUT THEY ALSO REFUSE TO PLAY ON MY MARANTZ DR6000. THIS MUST BE BREAKING THE LAW?"**

HECTOR ROOFE - THE UNPLAYABLE

**"I WONDER WHY HI-FI BUFFS SPEND FORTUNES ON KIT, WHEN SURELY THEY'RE LIMITED BY THE QUALITY OF THE DISCS."**

JOHN BURKE - MASTER STROKES

**"AS A RECENT IMPORT TO THIS COUNTRY I AM STAGGERED TO FIND THE PRICE DIFFERENCE OF HI-FI ITEMS IN THE UK COMPARED TO OTHER COUNTRIES."**

ALAN ROBERTS - STITCH UP

## LETTER OF THE MONTH

### THE UNPLAYABLE

The new copy protection systems that record companies are incorporating on some CDs seem to have an unfortunate side effect. I have just bought a double CD, *The Best Of Deacon Blue*, manufactured by Sony. The discs will not play on my PC as is made clear on the sleeve, but they also refuse to play on my Marantz DR6000. The fact that they won't play on a hi-fi CD-R/W deck is not mentioned however.

This must be breaking the law? I'm sure that by not being clear about the full extent and effect of their copy protection system, Sony must be breaking part of the Trade Descriptions Act? Even if the law is not being broken, I think consumers should be warned of the effects of this before they buy Sony CDs.

I am fully in favour of Sony's aim, which is to stop the illegal distribution of their music on the internet, but this is the wrong way to go about it. A better idea would be to cut the price of

the discs! I take a great pride in owning original CDs, but that pride has cost me an arm and a leg over the last fifteen years.

Hector Roofe, via e-mail

The Editor replies... Copy protection is a very hot topic at the moment as the submissions to this month's letters page amply demonstrate. These discs have only recently been distributed on a large scale and many angry consumers have already returned discs to stores. We hope that warning labels will become clearer and we'll monitor the situation with interest. We spoke to our friends at Marantz with regards to your DR6000, and their response was: "In terms of CD playback in Marantz disc players, all discs recorded to Red Book standard will play in our machines. We cannot confirm the playability of those discs which are not recorded to the Red Book standard. As discs do not state whether they are recorded to the Red Book standard, we can only advise end users to return the discs to the point of the purchase".

### MASTER STROKES

For Xmas I scored the Bee Gees latest collected works and I was amazed at how well their remastered stuff scrubs up. The disc had great dynamic range, detail and superb vocals, in fact everything! It got me thinking about how many pathetic recordings are released where record labels have not bothered to put much effort into the quality of the product, probably because it is targeted at audiences that do not have the

ears or the equipment to do it justice.

My point is how can the technology super-powers expect us to believe that the new high-resolution formats are here to further our cause, when record labels don't even make the effort to exploit the full potential of existing technologies? Will we ever hear real-world music mastered with attention to 24/192 detail, or just repackaged low-fi which costs more to buy?

John Burke, via e-mail

## MUDDIED BY MIDBAR

I've read a lot in the press lately about the Midbar copy protection system used on Natalie Imbruglia's new CD and no doubt to be used on all new CDs soon, and I was wondering if it affects sound quality?

As I understand it, it places more work on the DAC to fill in the sectors of the disc that have been deliberately corrupted and therefore may well affect the overall sound of a protected disc versus a normal copy. It would be really interesting if you could do some tests or an article on this system and publish the results.

What do you think?

David Evans, via e-mail

*The Editor replies... As a general rule, any additional information on a disc is unlikely to improve sound quality, and as far as we're aware, there hasn't been any definitive work published on the sonic effects of the Midbar protection system. However, we will certainly be looking at the possibility of a test in the near future.*

## CD NOT

If anyone has read about the desire of some record companies to prevent CDs being played in certain drives, or to prevent them from being copied, the aim is about to be squashed it seems.

Philips' legal dept has just decided to kick ass on the playability of CDs. It says if a disc can't be played on any CD player including PC CD-ROM it will not be able to be called a CD! Any company who decides to alter its CD with copy protection will also be breaching Philips' patents held in each country. Philips also stated that if a CD is protected or won't play in a CD drive, it will have to state so clearly on the case - imagine the sales lost from that! Not only



Copy protection systems beg the question: when is a CD not a CD?

does Philips need to flex some CD owning and creating muscle, I expect it wants to preserve its market for CD-Rs.

Dan Duchaine, HFC Forum

*The Editor replies... We asked and received this word from Philips on the issue: "Some music record label companies have announced that they are experimenting with the release of copy protected CDs. We have not been involved, nor have we been informed by these labels, and are investigating the situation at the moment.*

*"However, Philips would be concerned with any technology which limits or even blocks playability in CD playback drives. It is possible that any technology that effectively changes the essential characteristics of a disc to render it outside the Audio CD Standard (the 'Red Book', the protocol created to ensure compatibility between discs and hardware), results in a disc that should no longer be described or marketed as a Compact Disc."*

## FLOYD FLOP

I was thinking of upgrading my old system which consists of a Marantz CD 52, PM40 SE amp and Tannoy 613 floorstanders. However, I recently bought two new CDs, Sting's *All This Time* and Pink Floyd's *Echoes*. The Sting CD sounds awesome, so good in fact I wonder if I need to waste money on upgrading, but the Floyd sounds crap! If there is such a big sound difference on my cheap system, I wonder why hi-fi buffs spend fortunes on kit, when surely they're limited by the quality of the discs. I wonder if vinyl varies as much? Should I buy a turntable and give it a try?

Karl C, HFC Forum user

*The Editor replies... It's a sad fact that sound quality can vary so much between albums, but don't lose heart. Hi-fi enthusiasts spend their time and money trying to get as close to the music as possible and upgrading your kit will help you to reach that goal. Don't rush to blame the humble silver disc, though, as production values vary between one album and the next, whichever format you choose. Oh, and if you're finding that Sting sounds better than Floyd, start auditioning new kit now!*

## STITCH UP

As a recent import to this country I am staggered to find the price difference of hi-fi items in the UK compared to other countries. The most extreme example is that of BOSE UK Ltd, it sells a Home Theatre system model called Lifestyle 50. This unit is on [www.bose.com](http://www.bose.com) for the equivalent price of £2,500 in the USA, yet it sells for £4,500 here. BOSE UK tells me it's because of the cost of doing business here. What gives?

Alan Roberts, via e-mail

*The Editor replies... Truth be told, we're as upset as anyone else when it comes to paying a premium to buy imported goods, it's where the term 'rip-off Britain' comes from. However, it works both ways, as many British-made hi-fi components can be found at increased prices in the States. The best advice is to vote with your feet, if it costs too much don't buy it.*

# FORUM HELP

TROUBLE WITH THE RIG? LOST IN THE UPGRADE JUNGLE? FEAR NOT, DAN GEORGE IS HERE TO GUIDE YOU TO SONIC SAFE HAVEN

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Hi-Fi Choice

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London W1U 6FP

Or e-mail:

dan.george@futurenet.co.uk

TURNABLES

## THE SELECTOR

I'm considering buying a new record player to replace my old one. The three models I'm looking at are the Clearaudio Reference, Michell Orb SE and the Nottingham Analog Hyper Deck. I'll also use the SME Series V tone arm or the SME model 20.2A, and a Clearaudio Signature cartridge to accompany my Pioneer VSA-E08. Which is the best one?  
*Stuart 'Null' Leif, via e-mail*

We reckon you should go for the Michell, we gave it a Best Buy in *HFC 192*, and at £1,725 it's a lot cheaper than the Clearaudio Reference at



nearly £4k. We've not tested the Hyperspace, but we loved the more affordable Spacedeck. By the way the SME Model 20.2A is turntable and arm combination, and extremely good one at that. Bear in mind that you'll need a phono stage to get the best from your cartridge.



HEADPHONES

## HEADGEAR

I am looking to buy some headphones and I'm stuck on which ones to get, can you help? I have a budget of up to £100 and the music I listen to is everything from thumping dance music through to classical so I need a good all-rounder. I like the look of the Technics RP-1200s but I'm still not entirely convinced. I will be using them on the move with my MP3 player as well. As I am 19 and at Uni I need something to impress the locals with too ha-ha!  
*Thomas Hussey via e-mail*

A ton should get you some great cans and Vivanco has a massive range - look out for the SR950s at £80. If you like the styling we can highly recommend the Grado SR-60 at £79. Finally, try and have a go with the Philips HP890s, a good all-rounder for around £66.

SPEAKERS

## BARGAIN HUNTER

Please can you give me a verdict on the speakers I am looking to buy. I'm after either Tannoy R2 speakers or Eltax 8.2s. Can you recommend something better in the same price range? I listen to rock music mostly and watch a lot of DVD movies.  
*Andrew Hawick, via e-mail*

Have you been to Richer Sounds Andrew? Of the two, go for the Tannoy, we gave it a Best Buy on test and thought it was a real bargain. We've not tested the Eltax speakers, but they have tended not to do very well in *Hi-Fi Choice* in the past. For the £200-ish you're likely to pay for these now, you must try the B&W DM303 at £180 which offer excellent sound for your pounds.



CD PLAYER

## WHAT CD?

I have a Rotel RA 930AX amplifier, Rotel RCD 930AX CD player and B&W DM601 speakers all in a small living room. I have been very happy with the sound of the system until now; the sound lacks bass and depth. I am considering buying a new CD player but I am not sure how this will improve the sound. I am thinking of the Marantz CD6000 but I don't know how it will work with my current amplifier. Which CD player would you recommend?

Juan Fitter, via e-mail

A better CD player should in theory give you the depth you're after by offering greater detail and resolution. We loved the CD6000 when we tested it, and at £250 it's a bit of a bargain. An interesting choice for bass extension would be the Denon DCD-835 at £230. Try also the NAD C521 at £200, which may provide the added depth you're looking for.



Marantz CD6000



Cyrus DAD30

SYSTEM

## SILVER SHOE BOXES

My system generally sounds great; a bit smooth but good. Are there any improvements you could suggest? I have a Cyrus DAD30 with a PSX-R, a Cyrus IIIi used as preamp, connected to two Cyrus Power amps. My speakers are Acoustic Energy AE109s.

Peter Mercer, via e-mail

You have some fairly lively equipment already so your perceived smoothness could be a result of your AE109s' bass-happy output. It might be worth auditioning some other speakers, however, we'd still suggest something a little relaxed to partner your electronics. Audition the Epos M12s for speed and midband ability and perhaps look at the Cyrus CLS50. It's probably worth investigating the new ranges from B&W and Tannoy while you're at it.

EQUIPMENT SUPPORT

## CHANGING MAN

I had a Classé CD player and pre/power amp combo with B&W 801s using high-grade MIT cables. I replaced my amp with a Krell KAV 300i, my CD with a Theta transport/DAC and my speakers with B&W 802s but I'm still having problems! I want tight but full bass, warm midband and open, un-brittle treble. Can you help?

Omer Tastekin, via e-mail

Townshend Audio  
Seismic Sink



It looks like you have a power problem, the N802s need a fair amount of the stuff to work at their best. Try to audition a bigger amp such as the Gamut D200, using the Krell as a preamp. The system would also benefit from great support, stick it on a Townshend Seismic base for quality bass.

SPEAKERS

## RUN-IN MAN

I have a new pair of speakers and a new CD player, both of which require substantial running in. I was told that you could wire the speaker positives to the negatives on the amp and speaker end and face the speakers toward each other. This apparently makes the drivers work against each other. Also, I was told to throw over a thick duvet to further reduce the sound! Does this work or has anyone got any suggestions?

Question from the HFC Forum

This method works a treat for loudspeakers, but you only need to reverse the polarity of one of the speakers. What you are doing is reversing the phase output of the speaker, which in effect reduces bass output from the speakers. The duvet muffles output further, allowing you to continue run-in through the night. Use your new CD player as your source and kill two birds with one stone.

CD-R

## BURNING ISSUE

Have you compared a CD-R burned on a PC with one burned on a separate recorder? What do you think - which one sounds better?

Peter Takov, via e-mail

Good question Peter. We've done some comparisons in the office recently with Radiohead's *OK Computer* CD, using Windows XP and a standard CD-R/W writer, and an early dedicated Philips CD-R 670 unit. The results were night and day; the PC-derived CD was awful, sounding compressed and lacking in dynamics with a blurred presentation. Remember that the PC has never heard of jitter, that insidious distortion which the hi-fi world appreciates can make or break both CD players and recorders.

CD-R

## BEST CD-R

Based on your reviews to date, what would you consider to be the best blank CD-Rs on today's market for the purpose of recording music?

JM Haughton, via e-mail



Our Technical Editor Paul Miller crowned the TDK CD-RXG king in a recent group test, closely followed by Fuji's regular CD-R disc. We measured the recording performance of these discs and found that there were some quite striking differences between brands. It's worth shopping around for the best price, these can vary as much as sound quality!

B1

B2

CD

TU

AU

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MONITOR

A30.1 INTEGRATED AMPLIFIER



# TWO BOX AMPLIFIERS

ARE TWO BETTER THAN ONE? ALVIN GOLD AND PAUL MILLER INVESTIGATE.

**T**he pre/power amplifier combination is one of the staples of the hi-fi industry. Removing the low-level preamplifier circuits from the high-voltage, high-current power stages with their massive attendant power supplies, is clearly a good way of avoiding mutual interference, but the benefits are offset in practice by the additional costs of housing the two components separately.

The other two-box solution is of more recent vintage, and consists of adding a pair of power amplifiers in a housing similar to the integrated amp, and bi-wiring the system – connecting one amplifier (usually the integrated amp) to the bass units, and the other to the tweeters. This arrangement offers an advantage because each amp is driving a narrower bandwidth and intermodulation distortion is reduced as a result, but there is no actual increase in power (see the lab conclusion on page 51 for the full story). One of the power amplifiers is still in close proximity to the preamplifier, though this potential problem can be addressed by using the integrated power stages to drive the bass units of the partnering speakers. They tend to be more opaque to the kinds of problems that are all too apparent in the full gaze of a high-resolution tweeter. Remember that integrated/power amp combinations require a loudspeaker that is bi-wirable, which in this case meant that my usual JMLab Mezzo Utopia test speakers could not be used.

Which is the better of the two options is a matter that was approached with some interest, and if the results seem equivocal, it is because the obvious effects are being partly concealed by a variety of other factors, not least the specifics of the system under test.

## ON TEST

Arcam A85 integrated & P85 power amplifier	£1,249.80
Audio Analogue Bellini preamp & Donizetti power amplifier	£1,155.00
Crimson 610C preamp & 620D power amplifier	£875.00
Exposure 2010 integrated & 2010 power amp	£1,098.00
Marantz PM-17 MkII integrated & SM-17 power amplifier	£1,690.80
Primare A30.1 integrated & A30.2 power amplifier	£2,699.98
Rotel RC-1090 preamp & RB-1090 power amplifier	£2,650.00
TAG McLaren PA20R preamp & 100P power amp	£1,699.90

## EQUIPMENT USED

Tannoy Dimension TD12 loudspeakers  
B&W DM602 S3 loudspeakers  
Primare D30.2 CD player  
Nordost Valhalla loudspeaker cables and interconnects

## THE LISTENING PANEL

John Bamford (Pioneer)  
Roger Batchelor (Denon)  
David Inman  
Steve N Harris (Tag McLaren Audio)  
Mark Hockey (Kenwood)  
Vince McAtamley (API)

## MUSIC USED

Alasdair Nicolson /Joanna MacGregor (piano) - *Play*  
Marc Cohn - *Marc Cohn*  
Stravinsky/Gergiev (cond), Karol Orchestra - *Rite Of Spring*  
Mary Coughlan - *Love For Sale*  
Carly Simon - *The Very Best Of*  
Rautavaara/Elmar Oliveira (violin), Leif Segerstam (cond)/Helsinki Philharmonic - *Violin Concerto*  
Bob Dylan - *Time Out Of Mind*  
Nojima (piano) - *Plays Ravel*  
Eels - *Electro-Shock Blues*



# ARCAM DIVA A85 INTEGRATED & P85 POWER AMPLIFIER

**SOUND** ★★★★★ **VALUE** ★★★★★ **A85 - £749.90, P85 - £499.90** **CONTACT** 01223 203200 [www.arcam.co.uk](http://www.arcam.co.uk) **GUARANTEE** 2 years

**T**he A85, the most successful and critically liked amplifier in the current Arcam range, was designed from the outset with expansion in mind, and this always included plans for an outboard stereo amplifier, the P85 included here. The P85 is essentially the power amplifier from the A85 in a separate box. It can be switched on and off using a wire link from the A85, or with a single button press from the remote control.

The A85 design even allows for further expansion: a phono stage can be added, and it will accept a third channel module for home cinema purposes. This also receives additional support, for example by allowing the use of an outboard processor by setting the volume control to fixed gain, using the A85's set-up menu structure. Build quality of both is exemplary without extending to particularly costly materials, and the standard of fit and finish are first rate.

## SOUND QUALITY

The all-star panel liked the Arcam, but with some reservations. 'It sets a standard that is hard to beat... it's wide, deep and clean,' said one of the Marc Cohn recordings. But it was

deemed 'dynamically challenged' by another. In the Stravinsky the system overall sounded rather 'soft and rounded' and 'lacking in balls', while one listener complained that the music was 'locked in to the speakers'. He also noted that the fiery Stravinsky extract should have sounded more intimidating, but that it was a little too polite, too tidy to convince.

In the later sessions, however, notwithstanding a slight loss of physical presence in the deep bass, the combination was described as smooth and attractive, with plenty of well organised detail and a constrained but very cultured and clean-sounding treble. The difficult Joanna McGregor piano sound was particularly liked, and attributed, ironically, with 'plenty of impact'.

In retrospect, the Tannoy system was not really designed to exploit the capabilities of the Arcam pairing, but the B&Ws could not have been better matched. In this combination, the Arcam sprang to life, the system performing with punch and verve, plenty of detail and excellent articulation. Here the interest was how matters improved with the second amplifier in circuit, and at ordinary levels (that is, within the compass of the A-85 on its own), this

was one system that really did show greater instrumental separation and a more firmly positioned and physical sense of stereo image.

## CONCLUSION

The Arcam clearly was not ideally suited to the Tannoys, but it worked well with the B&Ws where it was one of the only combinations tested to show a real advantage when the external power amp was added. With the added flexibility built in to the Arcam at ground level, it is hard to avoid a positive conclusion.



## THE LAB REPORT

For the full review of the A85, please refer to *HFC* 214, but for now we will look at its compatibility with the P85 as an integrated/power amp bi-amp solution. Both the A85 and P85 offer precisely the same 130W/8ohm power output (2x105W/8ohm) with a dynamic output that peaks at 520W/1ohm – equivalent to 22.8A of undistorted current. Gain, too, is matched to within 0.07dB so neither amp will sound louder than the other. Both offer a flat response and, importantly, the same output impedance

of 0.11 ohm (20Hz). The A85 has some advantage in S/N of 84.6dB versus the 81.9dB offered by its P85 cousin in bi-amped mode. Differences in 'character' between the amplifiers are marginal, though the P85 does suffer slightly higher distortion, under the same conditions, both with increasing power output (0.003% vs 0.001% at 10W/8ohm) and frequency (0.035% vs 0.007% at 20kHz/10W). Otherwise, the A85/P85 is better matched as a bi-amp combo than the three other integrated/power duets in our survey.





## AUDIO ANALOGUE BELLINI PREAMPLIFIER & DONIZETTI POWER AMPLIFIER

**SOUND** ★★☆☆ **VALUE** ★★☆☆ **Bellini - £560.00, Donizetti - £595.00** **CONTACT** 01753 652669 [www.ukd.co.uk](http://www.ukd.co.uk) **GUARANTEE** 2 years

**P**reviously we have tested the Audio Analogue Puccini integrated amp; but Audio Analogue also produces a pre and power amp based on similar ideas, and with a little more power on tap.

The Bellini has five line inputs and an MM/MC phono stage, separate record and listen selectors, a volume control, and a drop dead gorgeous palm-size remote control. The source and record selectors are twist-to-select knobs which are spring loaded back to the central position; selec-

tions are indicated by a column of LEDs. The Donizetti power amplifier is a classic black box, bereft of controls, and fitted with two sets of speaker terminals for biwiring purposes. The metalwork is thick but somewhat resonant – some damping inside the cover would have been a good idea – but the internal build looks unusually elaborate, with plenty of power supply capacity to support the power rating – 60 watts/channel into eight ohms, which almost doubles to 110 watts into four ohms and 170 watts into two ohms (all 1kHz).

### THE LAB REPORT

In marked contrast to the Puccini amplifier (HFC 181), the performance of this Bellini/Donizetti combination is utterly dominated by its relationship between distortion, musical frequency and the loudspeaker load. There's a temporal effect, so transient signals (like those encountered in music) suffer higher distortion for a given power output. Thus, under dynamic conditions, it'll deliver 95W/8ohm, 122W/4ohm (at typically 0.5% THD) and 200W/2ohm or 10A (at typically >1%). Under steady-state conditions, distortion still increases

steadily from 0.006% at 25W/4ohm to 0.03% at 30W/4ohm, 0.3% at 60W/4ohm to 0.6% at 100W/4ohm. Moreover, distortion is especially high through the bass (0.03% at 20Hz), falling quite markedly to 0.006% at 1kHz. Otherwise, the amplifier's performance is less bizarre, its response flat within +0.0/-0.1dB limits from 20Hz-20kHz, the output impedance steady at 0.04ohm across much of this span while the A-wtd S/N ratio amounts to 81.6dB (left channel) and 79.9dB (right channel) – about 5dB below the norm these days.

### SOUND QUALITY

The characterful nature of the Audio Analogue combination did not pass unnoticed, but it was not disliked in the Tannoy system – and I stress that what was being assessed in the panel tests was the particular system, one of whose common factors is a very fine but undeniably characterful loudspeaker that makes very particular demands on the amplifier. The Bellini and Donizetti have a muscular, slightly constrained quality that provides a type of discipline that the potentially untidy Tannoys responded to surprisingly well. The bass, which can sound weak and rather lumpy in other combinations (the B&W for example) came across as rich, warm and rather attractive. One panellist suggested that while he wouldn't disagree if anyone thought that the amplifier was slow and ponderous, it was very much to his personal tastes, and there was some sympathy for this view. 'Stodgy and muted' was the least favourable epithet, 'big and bold' one of the more favourable ones, while the potentially difficult and extremely dynamic Joanna McGregor piano recording was well received. Overall the least favoured performance area was the mid/treble, which was

decreed to be 'muted' and 'lacking in edge definition'.

The Tannoy combination was definitely the Audio Analogue combination's high point in my view. With the B&Ws the system sounded uneven and lacking in transparency, with a dry and uneven deep bass and some hardening in the mid/treble. It was not entirely consistent with level either.

### CONCLUSION

Curious, characterful combination is not without musical merit, and it made a kind of sense with the Tannoy TD12s, but it is clearly more characterful than most, and extremely system dependent, which makes it an idiosyncratic choice at best.



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*For more than fifty years McIntosh has enjoyed a reputation in the hi-fi world as the 'American Power house.' Not surprising, with some McIntosh amplifiers delivering four figures, these are big systems in every sense of the word.*

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*As enthusiasts ourselves, we've long been fans of the company's leading edge valve amplifiers. In fact the latest big valve amps have attracted a knowledgeable following at KJ and we're pleased that more state-of-the-art releases are on their way to us.*

*What has been pleasantly surprising, is how successfully McIntosh has embraced current multi-channel technology. Their home cinema systems are not only as versatile as anything currently available, they are so easy to use.*

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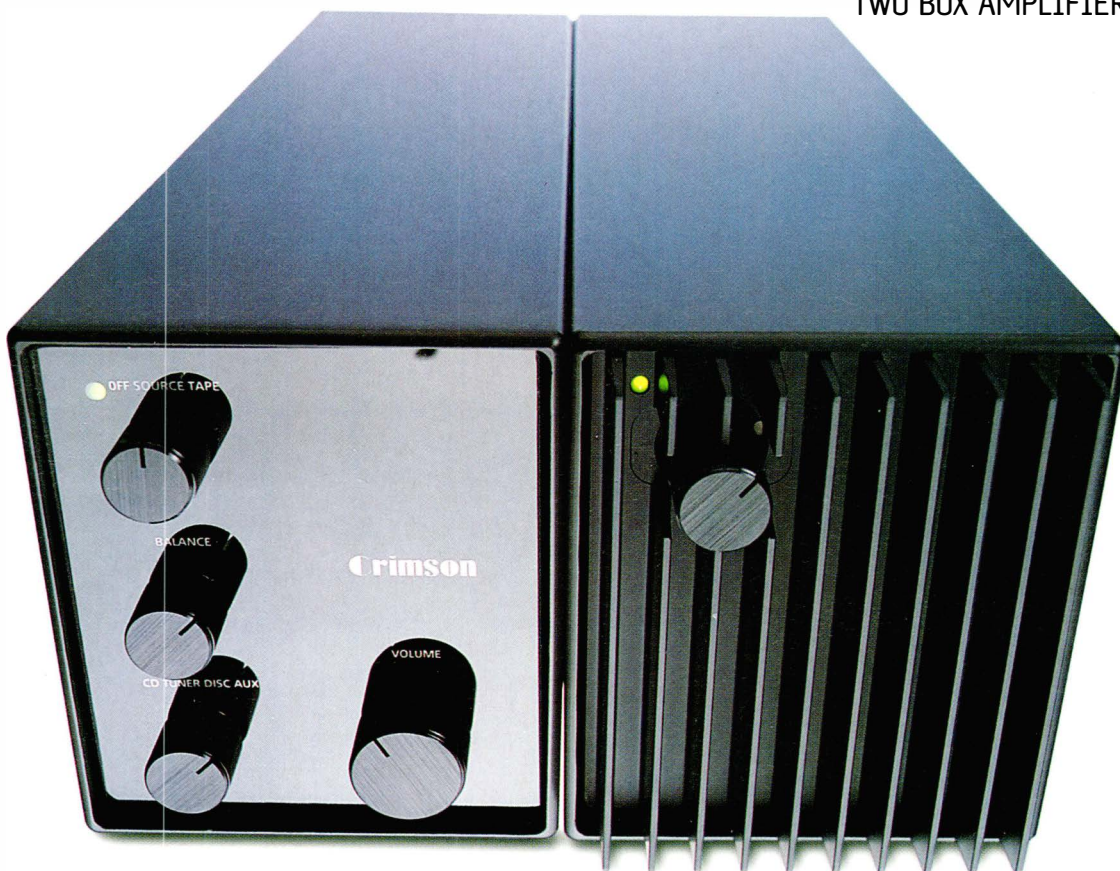
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**“THE 620D IS A POWER AMPLIFIER THAT IS BETTER AT PAINTING IN BROAD STROKES.”**

## CRIMSON 610C PREAMPLIFIER & 620D POWER AMPLIFIER

**SOUND** ★★☆☆☆ **VALUE** ★★☆☆☆ **610C - £450.00, 620D - £475.00, BOTH - £875** **CONTACT** 01277469055 **GUARANTEE** 3 years

**T**he original odd couple, the long-running Crimson preamp – due to be replaced soon – comes in a rather staid black crinkle finish with a diminutive black Perspex front panel and sixties-style rotary controls. The power amp however comes in a moody crimson anodised finish, a real knockout, and along with the fluted

heatsink helps provide a contemporary feel, and incidentally a better standard of finish than its epidermis threatening predecessor. The colour finishes, which include silver and blue, cost an extra £80 per unit, but there is a discount when buying the pre and power amp together.

The preamp has three line inputs, a DIN-based MM/MC phono input and

a tape circuit, with a limited range balance control and volume completing the feature list. The new D-series power amp uses plastic cased bipolar output devices where its predecessor used T-03 metal can components, which suffer from eddy currents. Slit foil caps and DNM solid core wiring are used internally, and the main case is now thermally coupled to the heatsinks to improve stability, when driven hard for extended periods.

Coughlin recording were muted, but at the cost of fine resolution.

Despite its relatively small size and modest power output, the 620D is a power amplifier that is better at painting in broad strokes than managing the filigree detail. The caveat here is that power limitations were audible even with the 92dB/watt Tannoys resulting in a flattening out of the sound through the powerful volume peaks of the Stravinsky, where a ‘strong’ upper bass was noted, and qualities of ‘denseness and musical tension’ were identified and praised.

### THE LAB REPORT

Surprisingly, with Crimson’s balance control set at 12 o’clock (there’s no centre detent), channel balance is very good indeed and typically within 0.2dB over the top 60dB of the volume control’s range. The power amp is based around two mono modules, one inverted with respect to the other to minimise demands on its modest power supply. The CS620 is capable of delivering 60W/8ohm and a solid 100W/4ohm without compromising its dynamic headroom. Here, the CS620 clocks up 80W, 140W and 190W (9.7A) into

8, 4 and 2ohm, falling to 75W (8.7A) into 1ohm. Distortion climbs progressively through bass, mid and treble (0.008-0.1%) but remains pretty steady across its 60W power range. The response shows some premature roll-off through both bass and treble (-1.3dB @ 20Hz and -0.7dB @ 20kHz) while the inductive Zobel network in its output forces up its source impedance from just 0.07ohm (1kHz) to 0.3ohm at 20kHz. Expect a further ‘sweetening’ as the amp drives a real speaker load.

### SOUND QUALITY

Here is one of a number of amplifiers in the group which have very obvious limitations, but which managed despite all the odds to perform musically quite creditably, though it was not without certain problems. Predictably the preamp was relatively weak compared to the power amplifier, with a lack of hear-through clarity; indeed a rather reticent treble altogether, which sometimes made for bland listening. ‘Not very lively’ was one response to Marc Cohn’s excellent recording of *Silver Thunderbird* and the gravelly and sometimes sibilant vocal overtones in the Mary

### CONCLUSION

Reinforcing its status as a two box Naim Nait, but arguably with more drive and weight, the 610D power amp is a gutsy design with strong, propulsive timing and a greater power yield than I remember of its predecessor. It is even fitted with an inverter board, allowing bridging to around 200 watts output. The preamp has its merits too, but the design is acknowledged to be on its last legs, and those interested might feel it is worth waiting for the new model.



# EXPOSURE 2010 INTEGRATED & 2010 POWER AMPLIFIER

**SOUND** ★★☆☆☆ **VALUE** ★★☆☆☆ **integrated - £599.00, power - £499.00** **CONTACT** 01273 423877 [www.exposure.com](http://www.exposure.com) **G'TEE** 3 years

**L**ike most of the integrated amps in this report, the Exposure 2010 has been covered before. Here it is joined by the confusingly named 2010 Power Amplifier, but it is not simply a 2010 Integrated with the preamplifier circuits stripped out. In fact it is a more powerful amplifier (its output rating is 75 watts/channel into eight ohms to the Integrated's 50 watts/channel), and Exposure suggests that the integrated amp is used to drive the tweeters in a bi-amp system, which is the opposite of the way that I generally prefer as the output from a dedicated power amp is likely to be cleaner than from an integrated amplifier. In fact the limited power output of the Integrated does tend to militate in favour of Exposure's recommendation, though I still marginally preferred the sound of

the B&W system wired the 'wrong' way, at least at moderate volume levels (the Tannoy was not tried this way). A high current monoblock setting expands the options further.

### SOUND QUALITY

As with the other models which objectively have some limitations at the frequency extremes, the Exposure worked quite well with the Tannoys, the bass being an especially good match. The Exposure's constrained bass response was perceived as 'thin' in one case, but was paradoxically regarded as of better quality and better timed than most of the others, and certainly in my tests it clearly had a bounce and attack that gave a positive impression. A dynamic and well-timed bass is an important component in the Exposure house sound, and although this Exposure

combination is somewhat blander than the classic Exposure amplifiers of old, it still has enough in its favour to score highly.

The mid and treble were less well liked, however. The midband was consistently described as being coloured, with a 'shouty' feel. Although this is not an amplifier attribute as such, it is just how the Tannoys will sound if given the leeway to do so, and the Exposure is culpable for a lack of firm control, again a finding mirrored in the non-panel related listening using the B&W speakers. There was also criticism of the amp's treble, which was felt to be variously 'glazed',

'bright' and 'edgy', while dynamic behaviour came in for some censure for inconsistency with the frequency content of the music. 'I was completely aware of the speakers,' concluded one, and this is probably the Exposure's real Achilles' Heel.

### CONCLUSION

The idea of producing a more powerful power amp to match an existing integrated amp is an excellent one in principle, but there are some obvious dangers. The problem here appears to be a less than ideal match between the two components which, in my judgement and that of the panel, don't sing from the same songsheet.

## THE LAB REPORT

Although the gain of the 2010 integrated and 2010/2010 combination is matched at +37.9dB, the maximum power output of each amplifier is not. Thus, the integrated achieves 2x55W/8ohm with a dynamic output of 86W, 115W, 108W (7.3A) and 65W (8.0A) into 8, 4, 2 and 1ohm respectively. Meanwhile, the 2010 power amp delivers 2x75W/8ohm with sufficient headroom for 105W, 130W, 98W (7.0A) and 55W (7.4A) into 8, 4, 2 and 1ohm under dynamic conditions. The combined response is gently tailored at both bass (-0.3dB

at 20Hz) and treble (-0.9dB at 20kHz) frequencies while the integrated has a slightly higher 0.23ohm output impedance vs. 0.17ohm for the power amp. Otherwise, both amplifiers share precisely the same increase in THD at HF, rising smoothly from 0.001% at 20Hz through 0.02% at 1kHz to a full 0.17% at 20kHz. This represents a hundredfold increase across the audio range of, primarily, odd-order harmonics which are less subjectively appealing. Not optimised as a combination, the 2010s are better suited to pre/power duty.





# MARANTZ PM-17 MK II INTEGRATED & SM-17 POWER AMPLIFIER

**SOUND** ★★★★★ **VALUE** ★★★★★ **PM-17 Mk II - £990.90, SM-17 - £699.90** **CONTACT** 01753 680868 [www.marantz.com](http://www.marantz.com) **G'TEE** 3 years

**T**he PM-17 Mk II, an integrated amplifier that will be familiar to *HFC* readers (issue 214) is matched here to the SM-17 power amp. The moving coil temperature meters, fine satin-finish metalwork, wrap-around edges and superbly turned aluminium controls all contribute to a strong visual impression. Attributes like the heavyweight build, and quality WBT speaker terminals don't hurt either.

Both amplifiers have a power rating of 60 watts/channel into eight ohms (100 watts/4ohms) but unlike the PM-17, the SM-17 power amp can be switched to an alternate BTL

(balanced transformerless) mode, which operates the two channels in opposite phase, turning it into a monoblock with an output rating of 200 watts/channel. Because this is a single channel mode, and the PM-17 is not similarly equipped, this feature was not tested. Instead the combination was used to bi-amplify the test speakers, with the power amp driving the tweeters (this scheme was adopted with all integrated/power amp tests in this group).

## SOUND QUALITY

In an earlier outing, the PM-17 Mk II integrated was memorably described as the 'fat uncontroller', and for all its



good audio manners, adding a power amplifier does little to sharpen up its act. In the Marc Cohn, the Marantz was deemed 'a bit safe-sounding' and 'not very dynamic', another panellist adding that the system sounded 'squashed... sat upon, and not very revealing of fine detail', though there was praise for the lack of harshness, and piano reproduction was widely praised for its realism. Mary Coughlan's vocals, sibilant at the best of times, sounded more so here than usual. One panellist concluded that the Marantz may have been a consciously valve-like design, though of course he had no idea of the identity of the product or its enabling technology.

Although clearly not as powerful as the Arcam or Primare systems, the Marantz was capable of driving the Tannoy's hard, and the B&Ws not

much less so, though really enthusiastic use caused the combination to sound a little spongy and congested, indicative of incipient overload. Interestingly, doubling up of amplifiers in this combination does little to cure the sound of the blousy quality noted in the solo PM-17 Mk II, but the easy, relaxed sound quality is one that many potential users will value.

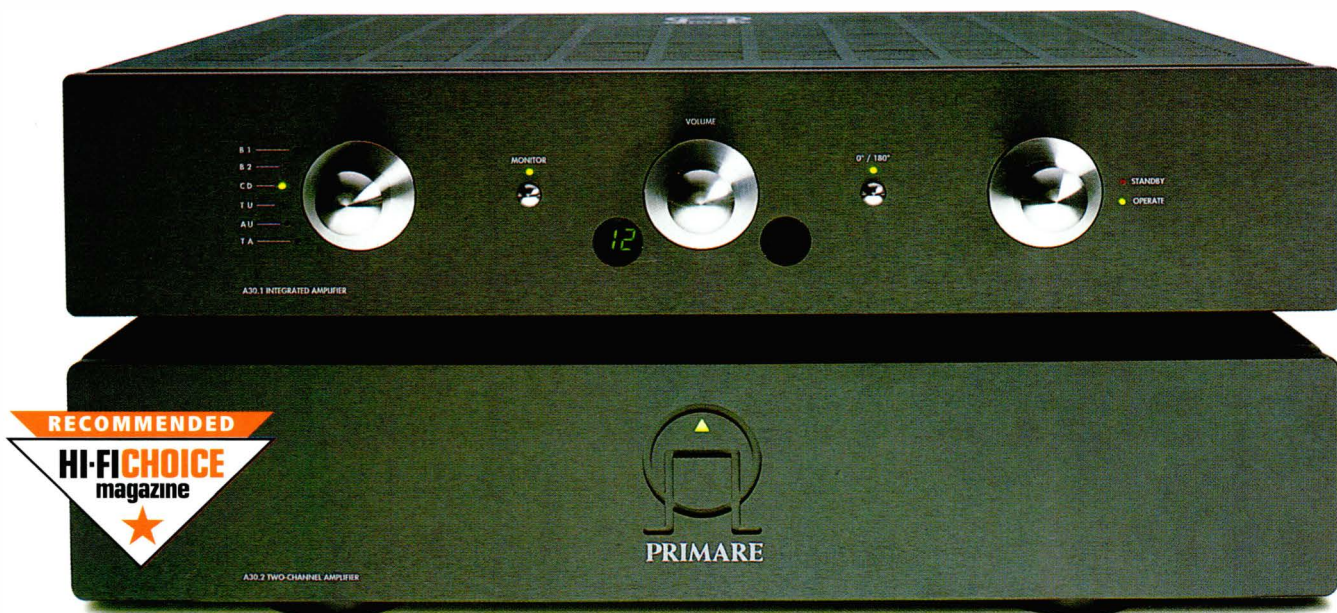
## CONCLUSIONS

The individual, even idiosyncratic voicing is a matter of personal taste, and if it wasn't the panel's favourite (or mine), that doesn't mean it won't be yours. More to the point is that doubling the dose does little to enhance separation or dynamic performance, but Marantz is to be praised for the excellent material value and the flexibility this package offers, hence the Recommendation.

## THE LAB REPORT

For bi-amp operation, the Marantz PM-17 Mk II should be configured in its 'coupled mode' (as an integrated amplifier) while hooking its preamp outputs to the SM-17 power amp (in normal, not BTL mode, with "att" set to 0dB). In this way, the gain of both amplifiers is matched to within 0.2dB, regardless of volume position – a difference unlikely to be audible between the bass and treble arms of a bi-amped system. In other areas, both amplifiers are matched as well as possible, right down to their respective dynamic power outputs of 106W,

200W, 218W and 130W (11.3A) into 8, 4, 2 and 1ohm loads respectively. At higher power outputs, the SM-17 has higher distortion than the PM-17 (0.008% vs 0.002% at 40W/8ohm, for example and 0.03% vs 0.003% at 100W/4ohm). The SM-17's output impedance is matched at 0.07ohm through bass and midrange frequencies but is far lower at HF, making it less susceptible to response variations through the treble. For this reason, it might make the better HF amp of a bi-amped pair.



# PRIMARE A30.1 INTEGRATED & A30.2 POWER AMPLIFIER

**SOUND** ★★★★★ **VALUE** ★★★★★ **A30.1 - £1499.99, A30.2 - £1199.99** **CONTACT** 01423 359054 [www.csesolutions.co.uk](http://www.csesolutions.co.uk) **GTEE** 2 years

**T**he A30.1 90 watt/channel integrated amplifier (reviewed *HFC* 214) is partnered here by the

A30.2, the matching stereo power amplifier is rated at 2x100 watts/8 ohms, rising to a healthy 180 watts/4 ohms with help from the hefty torroids that drive each channel output. The design of the two amps is very similar with extensive use of surface mount devices, and in the A30.1, Primare's usual high-precision, finely-stepped impulse generator volume and balance controls.

One curiosity of the Primare combination is that both have balanced inputs – the integrated amp has two – and in this test it was driven from the balanced output of the test Primare CD player using a set of Nordost Valhalla balanced XLR terminated cables. The obvious omission is a balanced preamp level output from the A30.1, even though the internal topology is balanced throughout – the power amp is balanced in this case from input through to output.

As usual with Primare, build quality is excellent, with thick metal panels and aluminium slab fascias, but the A30.2 power amp test sample, which had already run the gamut at our technical Editor Paul Miller's lab, failed to emerge from protect mode

when received for listening (couriers, who needs them!), and was replaced by another sample.

## SOUND QUALITY

It was not possible to run the replacement A30.2 in fully, though the consistency of the comments between morning and afternoon sessions suggests this was not a problem. One listener described the combination as giving a 'rose coloured' sound, which another panellist described as 'smooth', despite which there were odd complaints of 'harshness', for example in the Marc Cohn recording, and of 'muffle', 'dullness' and 'congestion' in the Mary Coughlan. On the other hand, the combination was praised for its 'ripe, listenable' vocal quality, and a 'smooth and sweet' balance. The Primare combination was felt to be grippy and in control, with a strong sense of image focus, but it was also a tad opaque with the Tannoy's.

Despite this, overall scoring was towards the top end of the scale, and the hands-on testing with the alternative B&W speakers was much plainer sailing, the combination adding a gravitas and an improved sense of scaling, separation and control, though it seemed somehow

less consistent in bi-amped form than when the A30.1 was used on its own (see the Lab Report for a reason).

## CONCLUSION

The lack of a balanced output from the A30.1 integrated, especially when such an output is available from the Primare CD player, implies that in its present form the A30.1/A30.2 combination is a halfway house. Successful with the B&W speakers, the Primare was palpably ill at ease with the difficult Tannoy load. This combination is one with some potential benefits, but which should be auditioned carefully in your chosen system.



## THE LAB REPORT

Primare's popular A30.1 has been 'tickled up' since we last reviewed it in *HFC* 214, offering +2dB extra gain and a little extra headroom to accommodate musical peaks. The 2x120W/8ohm rating is unchanged, but a full 160W, 310W, 530W and 470W (21.7A) is now achievable into 8, 4, 2 and 1ohm loads under dynamic conditions. Distortion remains reasonably constant at 0.01% (bass), 0.02% (midrange) through to 0.04% (treble) as it does through the A30.2 power amplifier. However, as supplied, the total gain

of the A30.1/30.2 is +1dB more than the A30.1 in isolation, implying that, in bi-amp mode, the A30.2 is always +1dB 'louder' than the A30.1. As the A30.2 also has different dynamic characteristics, the pair are probably better used as a conventional pre/power combo. A final warning: as both the A30.1 and A30.2 are fully balanced amplifiers, their return or 'black' terminals should never be grounded. Dealers should take particular care if either amp is routed through a speaker selection switchbox, for example.

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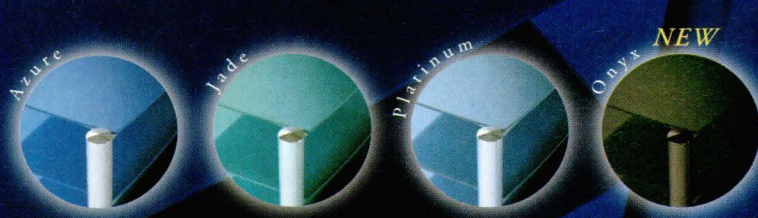


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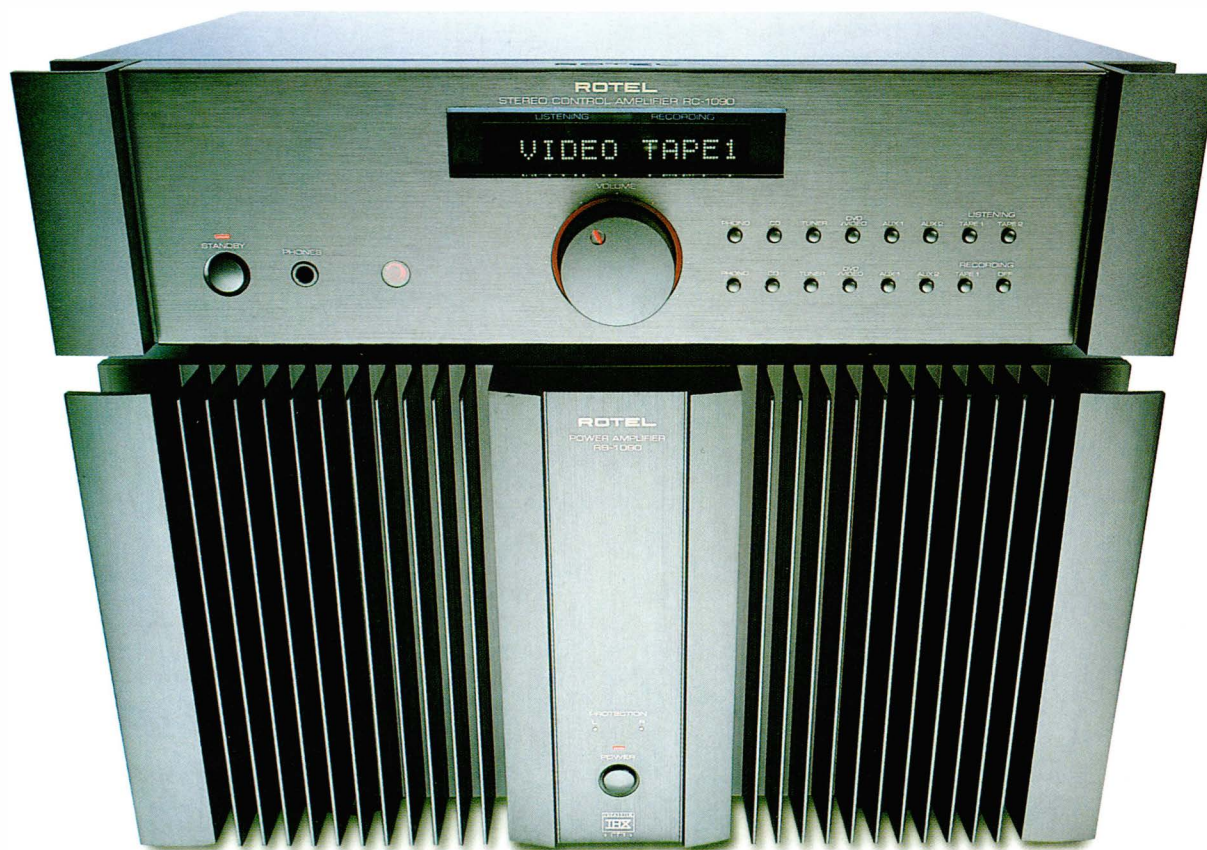
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X S S E R I E S



## ROTEL RC-1090 PREAMPLIFIER & RB-1090 POWER AMPLIFIER

**SOUND** ★★☆☆ **VALUE** ★★☆☆ **RC-1090 - £1,000.00, RB-1090 - £1,650.00** **CONTACT** 01908 317707 [www.rotel.com](http://www.rotel.com) **G'TEE** 2 years

**R**otel's flagship stereo preamplifier is a large and attractive unit, with a central display and remote control, and eight inputs, including a phono input with MM and MC settings. A balanced input feeds what appears to be an unbalanced CD input circuit. The RC-1090 boasts two 12 volt triggers, a generous selection of external IR remote in and outputs and a computer interface to cater for custom install and multiroom systems. Balanced and unbalanced outputs are available.

The RB-1090 power amp is rated at 380 watts/channel into eight ohms (unbridged, as the specifications point out, and generated by two 1.25kVA toroidal mains transformers and 4x22,000µF slit foil capacitors, with enough peak current on tap to start a car if it was available for slightly longer).

It weighs 38kg, which is high-end territory, but positioning is eased by a pair of rollers along the rear edge: tilt it and wheel it around like a wheelbarrow. Unsurprisingly, this powerhouse has home cinema pretensions, and is THX Ultra certified. Standard

unbalanced and XLR-based balanced inputs are available; impressive stuff, but the build quality is disappointing.

### SOUND QUALITY

If proof was needed that big muscle amplifiers don't always cut it in the subtlety stakes, this is it. On the first of its two presentations to the panel, it was described as a competent amplifier, but not an outstanding one. 'A good piano sound,' was a typical comment on the Marc Cohn track, 'but the voice is subdued and there's some coloration', while the admittedly very tough and dynamic Stravinsky passage was described as 'a bit confused, soft, not separated', with the conclusion that it 'doesn't draw me in', though another listener reacted more positively, pointing to good image depth, but noting that the music lacked the 'awesome' quality it had previously revealed – he also pointed out some coloration in the Marc Cohn recording, which normally sounds very clean.

In the second outing, the Rotel attracted comments like 'dull', 'sat upon', 'woolly', 'didn't get my toes going', 'sibilance on vocals' and 'the

distinctive rhythm on *Moon Over Bourbon Street* was missing' – and once again there were complaints of coloration. I too found a distinctive thread of coloration, a slight opacity which made the B&Ws sound uneven, though the enormous power reserves did ensure that the sound remained relaxed at all volume levels.

### CONCLUSION

The 1090 series components seem to

fall between two stools, with more power than can reasonably be required for everyday systems, and a lack of finesse in some areas which makes it less credible as an alternative to the true high end.

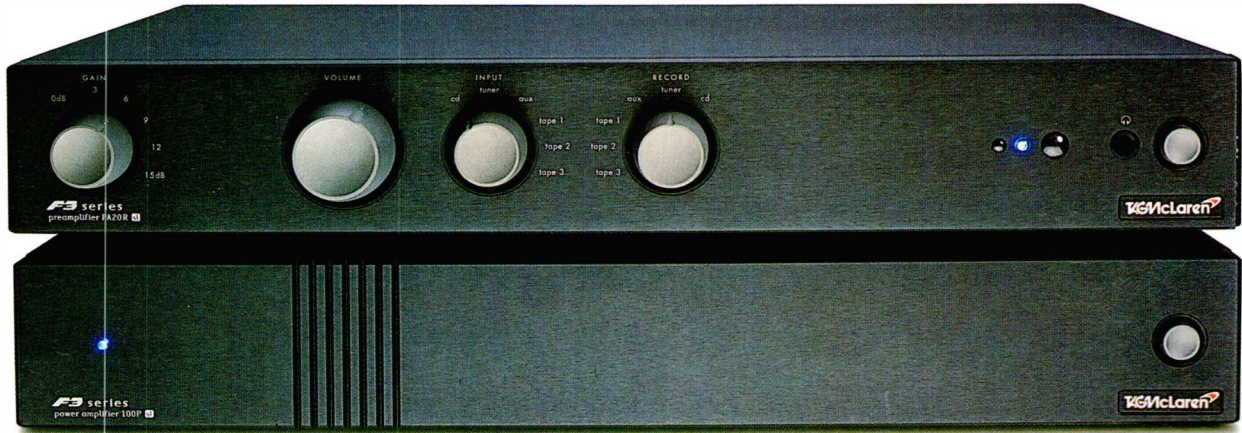
Nevertheless, the RC-1090 preamp is extremely flexible, and the RB-1090 power amplifier is prodigiously potent. Those with very large spaces to fill with sound should form an orderly queue.

### THE LAB REPORT

On a watts-per-pound basis, nothing comes close to the RC/RB-1090 combination. Rated at 380W, it will actually deliver 480W/8ohm and 830W/4ohm with sufficient headroom in reserve to produce 565W, 1070W, 1980W and a full 1945W (that's 1.95kW or 44.1A) into 8, 4, 2 and 1ohm loads under dynamic conditions. The RB-1090 laughs in the face of the most dastardly speaker loads and will drive the least sensitive speakers to their endstops. All of which leaves your choice of boxes wide open.

The combined gain of the pre/power is high at +45dB which means the volume control is used more up to, rather than beyond, the 12 o'clock position and where the channel balance is poor at ~1dB. Otherwise, its A-wtd S/N ratio is bang-on the industry average at 85dB. The response is very slightly tailored at -0.1dB (20kHz) to -0.25dB (30kHz) while the power amplifier's output impedance is both low and uniform at 0.01ohm, further isolating it from variations in speaker load.





## TAG MCLAREN PA20R PREAMPLIFIER & 100P POWER AMP

**SOUND** ★★☆☆☆ **VALUE** ★★☆☆☆ **100P - £699.95, PA-20R - £999.95** **CONTACT** 01480 415600 [www.tagmclaren.com](http://www.tagmclaren.com) **GUARANTEE** 2 years

**A**lthough thoroughly modernised and imbued with TAG McLaren's engineering-led input, the PA20R and 100P pre and power amplifiers are essentially part of TAG's prehistory, having been inherited from Audiolab, the company it took over when it entered the hi-fi industry around five years ago.

The PA20R is a stereo preamplifier with six inputs, three of them tape circuits. The design includes fully independent record and listen selectors, though TAG may have missed a trick by omitting a tape off switch. There are no tone benders either, but remote control is included, and so is a front panel stepped gain switch, a simple way to bias the volume control into its most linear middle region for any conceivable source. Outputs are available in balanced and unbalanced form.

The 100P is a dual mono integrated

power amp, with single-ended (phono) inputs and loopthrough outputs, but there is no balanced input to match the PA20R provision. Rated at 100 watts into eight ohms, the 100P has a high current supply and is said to be good for 180 watts into four ohms, and 220 watts into two ohms. The amplifier gives every indication of being at least as good as the numbers imply, with no hint of overload apparent at any stage during the test.

### SOUND QUALITY

The one consistent theme to this test is that technical perfection on the lab bench doesn't necessarily translate into sound quality. The TAG McLaren may have passed all its technical hurdles with contemptuous ease, but it failed to make a distinctive mark on audition. According to one listener it sounded as though 'in need of more running in' and 'a tad confused',

reflecting a more general ambivalence to an amplifier that 'failed to separate the voice and the piano' in the Marc Cohn recording, and which 'lacked balls' in the lower midband. The bass was not explicitly criticised by the panel, but I found it a little bland and woolly, and certainly timing seemed at best uncertain, with the imagery poor around the straight ahead position. Overall, in the final words of one contributor, the TAG is an uneven amplifier, but he did concede that it was at least musically involving.

The hands-on testing with less

demanding speakers (the B&Ws in this case) showed the TAG combination in a better light, but it lacks the incisiveness and precision of the best in its class, and the musical presentation was rather tight and lacking in transparency.

### CONCLUSION

This attractive slimline pre/power amplifier is as well turned out as we have come to expect from the fastidious TAG McLaren team, but although difficult to fault specifically, this rather bland combination failed to breathe and sing like a thoroughbred.

**"TO RATE THE 100P POWER AMPLIFIER AT 100W IS LITTLE SHORT OF A JOKE, IN PRACTICE IT'LL DELIVER A FULL 175W."**



### THE LAB REPORT


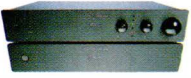


McLaren has the knack of understatement, but to rate the 100P power amplifier at 100W is little short of a joke for, in practice, it'll deliver a full 2x175W into 8ohm and 2x265W into 4ohm. Under dynamic conditions this increases to 235W, 425W (10.3A) and an astonishing 670W (18.3A) into 2ohm before McLaren's protection cuts in at 193W (13.9A) into 1ohm. This pre/power combination is more rolled-off through the treble (-0.6dB at 20kHz) than the individual paper specs might suggest, but this is no

bad thing.

The output impedance is low enough at 0.05ohm not to cause any significant variation in system response with different speakers while the excellent 105dB channel separation and 90dB A-wtd S/N ratio both make the best of modern digital sources. Distortion is also fabulously low through bass and midrange at ~0.0005-0.001%, though this does increase to 0.012% at 20kHz as the influence of any compensation (negative feedback) is reduced.



## AMPLIFIERS AT A GLANCE

				
<b>MAKE MODEL</b>	<b>ARCAM</b> A85 INT, P85 PWR	<b>AUDIO ANALOGUE</b> BELLINI PRE, DONIZETTI PWR	<b>CRIMSON</b> 610C PRE, 620D PWR	<b>EXPOSURE</b> 2010 INT, 2010 PWR
<b>PRICE</b>	£1,249.80	£1,155.00	£875.00	£1,098.00
<b>SOUND VALUE</b>	★★★★★	★★★★☆	★★★★☆	★★★★★
<b>CONCLUSION</b>	Integ/power combo won't suit all systems, but delivers classic A-85 virtues with others, plus extra gravitas and range.	Curious pre/power amp has a number of objective and subjective character traits that preclude recommendation.	Limited in what it does, but has real precision, verve and timing within those limits. Pre-amp due to be replaced soon.	Interesting match of integrated and more powerful power amp is not as sure-footed as some rivals.
<b>GUARANTEE</b>	2 YEARS	2 YEARS	3 YEARS	3 YEARS
<b>THE LAB REPORT</b>				
<b>DYNAMIC POWER OUTPUT</b>	██████████	██████████	██████████	██████████
<b>SPEAKER LOAD TOLERANCE</b>	██████████	██████████	██████████	██████████
<b>AUDIBLE DISTORTION</b>	██████████	██████████	██████████	██████████
<b>NOISE</b>	██████████	██████████	██████████	██████████
<b>OVERALL RATING</b>	██████████	██████████	██████████	██████████

# CONCLUSIONS

## ALVIN GOLD MAKES SENSE OF IT ALL.

**T**he results of this test were harder to interpret than usual, and this accounts in part for some fairly close scoring, with no absolute winners. Even the Arcam, which took our Best Buy gong, was inconsistent and obviously system-sensitive in practice. One thing the test outcome shows is that system synergy really is the name of the game here. Everything depends on the specifics of the test system. And if this makes the conclusions a little less clear-cut than you may like, then I can only say that unlike some, this is a magazine aimed at adults.

In reverse order, the Audio Analogue Bellini preamp and Donizetti power amp may have elegant names and the Bellini certainly has an elegant control system, but their perform-

ance with music lacks lustre. The Rotel RC-1090 and RB-1090 pre/power combination also receives a thumbs down because by traditional HFC standards it lacks finesse, but if the high power output is an issue, the Rotel offers extraordinary value. The Crimson 610C and 620D would certainly have been recommended if the power amp had had a deciding say, and if the promised new pre-amp is a success this could be a real cracker. Neither the Exposure 2010 integrated/power nor the TAG McLaren PA20R and 100P pre/power quite cut it either, the former because of a certain base level of inconsistency, and the latter for sounding a tad uneven, or just plain uninspired.










The three winning systems come from Marantz, Primare and Arcam. The Marantz PM-17 Mk II and SM-16 integrated/power

combo is not a high flier, but it is unfailingly enjoyable, and offers a lot of hardware for the money. The Primare A30.1 and A30.2 integrated/power is even better, but the two components are not perfectly matched. Finally, the Arcam A85 and P85 integrated/power amp was arguably the only package that showed a clear-cut benefit by adding the power amp, and even then only in the right system context.

The bottom line is that there is little compelling logic why bi-amping with two amps should be better than just using one, and similarly pre/power amp combinations may not necessarily be better than one-box integrated amps. But it was an integrated/power amp combination that offered the best results in this test, where quality was seen to matter more than quantity.

**“ONE THING THE TEST OUTCOME SHOWS IS THAT SYSTEM SYNERGY REALLY IS THE NAME OF THE GAME HERE.”**

## AMPLIFIERS AT A GLANCE

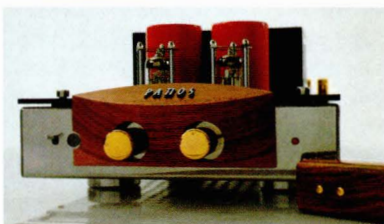
   				MAKE MODEL
<b>MARANTZ</b> PM-17 MK II INT, SM-17 PWR	<b>PRIMARE</b> A30.1 INT, A30.2 PWR	<b>ROTEL</b> RC-1090 PRE, RB-1090 PWR	<b>TAG MCLAREN</b> PA20R PRE, 100P PWR	
£1,690.80	£2,699.98	£2,650.00	£1,699.90	<b>PRICE</b>
★★★★★	★★★★★	★★★★★	★★★★★	<b>SOUND VALUE</b>
Flexible, beautifully made and as smooth as silk, but combo fails to build on the unaided PM-17 II in biamp mode.	Powerful, smooth, but uneven performance in some combinations, excellent control and separation in others.	Prodigiously powerful pre/power combination with a wide range of inputs, but not ideally subtle or uncoloured.	A blast from TAG McLaren's past highlights how much the brand has developed.	<b>CONCLUSION</b>
3 YEARS	2 YEARS	2 YEARS	2 YEARS	<b>GUARANTEE</b>
				THE LAB REPORT
				<b>DYNAMIC POWER OUTPUT</b>
				<b>SPEAKER LOAD TOLERANCE</b>
				<b>AUDIBLE DISTORTION</b>
				<b>NOISE</b>
				<b>OVERALL RATING</b>

# *Pathos at KJ West One ... power ... control*



*The two box pre-amplifier (shown above) is the only one in the country - it's part of the 'InControl + InPower' combination from Patbos - the mono-block power amps are shown below - again, the only pair in the country.*

*They're unique because the British distributor had no plans to import them. We at KJ West One 'begged' to differ.*



*Take a look the Classic One, in our view it's not only the most aesthetically appealing integrated amp for about a grand, it's also the most sonically convincing.*

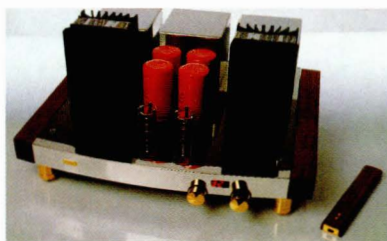


*As is the case with high-end components the Classic One takes time to reach it's potential but, even from first switching on there's abundant evidence of its capability. Indeed, running 'cold' this 50wpc hybrid amplifier goes head to head with any number of solid state competitors, but it's after a reasonable warm up period that you discover which one you'd rather live with!*

*Our introduction to Patbos amplifiers came through their pretty Classic One integrated. Pretty it certainly is but, more importantly, we discovered that it met the demands of many customers who'd grown out of 'bi-fi' - customers who'd gradually become aware that many of the 'five star,' 'bangs for your buck' boxes they'd been encouraged to audition were simply too tiresome.*

*Our own appetite for Patbos could have been sated by the glorious 'Twin Towers' which had both the musical and muscular abilities to create an appropriate sound stage for those customers with larger listening rooms. Just take a look at it - how stylish can hi-fi get?*

*Here then is realistic music reproduction - rather than 'bi-fi' as most of us know it - an important difference that discerning listeners quickly come to appreciate, and are now increasingly happy to live with.*



*That's what Patbos is all about. Amplifiers that defy conformity, that choose art before science, musical integrity over technological specifications, sonority before clinical accuracy, euphony rather than sterility.*

*Almost sated, but not quite ... as enthusiasts, we really couldn't understand why the new 'InControl - InPower' combination was not intended for British ears. So, at our special request (call it begging if you like!) a set has now arrived in New Cavendish Street. Be among the first to hear it, you'll be very welcome.*

West **kj** One

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# ONE BOX OR TWO?

PAUL MILLER SORTS OUT THE PROS AND CONS OF THE TWO BOX APPROACH.

**F**or a given power output, an integrated amplifier typically offers better value than a pre/power thanks to the cost saving of a single chassis, power supply and packaging. However, a 100W pre/power might offer better *performance* than a 100W integrated because the low-level preamp circuitry is isolated from the vastly higher swings of current demanded of a power amp as it grapples with the loud-speaker load. This is particularly true if your primary source is an MM or MC phono cartridge, but arguably less so if you're using a line-level CD, SACD or DVD-A player.

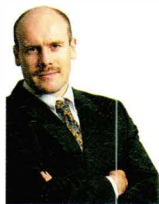
## THE PRE/POWER APPROACH

With modern line-level sources, a preamp is little more than an input selection device with a volume control. Very little 'amplification' is required for it to drive the power amp which, to some advantage, may be placed close up against the speaker itself. Provided the preamp has a low source impedance and can drive long interconnect cables with impunity, the power amp can be coupled as closely as possible to the speaker with short, high-quality cables. This is the approach I have used in my reference system for the last fifteen years or more, so it's certainly stood the test of time!

## THE BI-AMPING APPROACH

In our test, the preamp outputs of an integrated amp are used to drive a second, comparable power amp. Although both are handling a full range of musical frequencies, they are each connected to only one half of

the speaker's crossover – loudspeaker permitting, of course. With one amp driving either the bass/mid or mid/treble arm of the speaker, the demands on each are reduced.

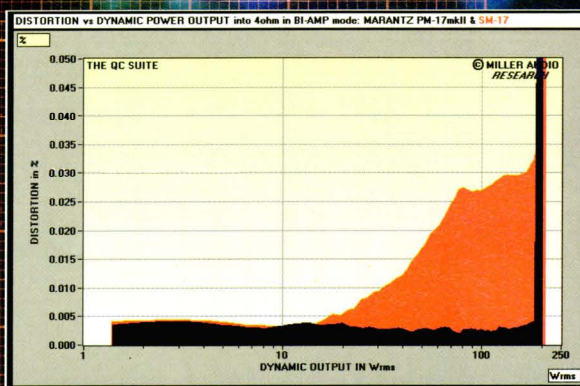


Furthermore, the split crossover networks and separated return paths (black terminals) within the speaker itself also reduce inter-modulation distortions between the high and low frequency drivers. Usually, momentary bursts of current drawn by powerful bass transients can, for example, 'modulate' the signal of more delicate, higher frequency sounds. Bi-wiring can offset this to a degree, but bi-amping takes the separation a stage further and is typically more effective.

There is even a suggestion that distortions occurring through magnetic interactions within the speaker cable itself are reduced, so bi-amping may, in theory, also reduce a system's sensitivity to your choice of wiring. More usefully, perhaps, is the ability to 'tweak' performance by using *different* types of cable for the bass and treble arms of the system. So, there are certainly benefits to apportioning the two 'halves' of a loud-speaker to two separate amplifiers, though you certainly cannot combine two dissimilar amps and expect good results.

Ideally, bi-amping should involve a preamp and two separate, but identical, stereo power amps, one driving the bass, the other the treble. Our integrated plus power amp combination is a modification of this theme and while it represents a neat upgrade path, mismatches in the performance and 'sound' of the two amps are far more likely to occur.

Indeed, of the four bi-amp combinations in our survey, only the Arcam A85/P85 duo was satisfactorily 'matched' in my view. Others, like the Marantz PM-17mkII and SM-17 offer the same gain (+40dB) and even the same maximum power output (95W per channel) but differ in other areas of performance. The graph highlights one crucial difference: how distortion in a bi-amped PM-17/SM-17 combination is far lower via the integrated (black trace) under dynamic conditions than the power amp (red trace). As a result, the two halves of this pair may, indeed, sound different.



Generally speaking, more power equals more distortion, but there are ways to lessen the effect.

## HINTS AND TIPS FOR BI-AMPING

- You cannot easily match one brand of integrated amp with an alternative power amp, unless both offer the same gain (or amplification factor). Stick to single-brand solutions and ensure the manufacturer has configured its products for bi-amp operation.
- If the integrated amplifier has a tone bypass facility, then be sure to use it. Even when set to the default position, bass and treble tone circuits can still exert some modification of the amp's response, shifting it away from the notionally 'flat' response of the matching power amp.
- If the manufacturer specifies a slightly lower output impedance for either the integrated or power amp, then this might be the better choice for driving the bass arm of the speaker.
- Similarly, you might choose a heavier gauge, low-inductance figure-of-eight (or dumbbell style) cable for the bass with a thinner, solid-core derivative for the treble.



**“OF THE FOUR BI-AMP COMBINATIONS IN OUR SURVEY, ONLY THE ARCAM A85/P85 DUO WAS SATISFACTORILY ‘MATCHED’ IN MY VIEW.”**



# DESIGNER SPEAKERS

FOR HI-FI FANS WITH EYES AS WELL AS EARS, DAVID VIVIAN SORTS THE LOOKERS FROM THE PLAYERS.

**S**tyle has suddenly got a delicious hold on hi-fi. Plain Jane has been shown the red card and an inspired sense of anything goes (so long as it goes with the post-makeover decor) is infusing the design departments of manufacturers which were previously more committed to churning out rows of uniform boxes than Bryant & May.

Speakers spring to mind as perhaps the most fertile growth area. Of the ten pairs we've assembled for this catwalk tear-up, only one conforms to the conventional rectilinear floor-stander format. But we'll forgive it that because it's made almost entirely out of glass!

That's the other thing. MDF and veneer, the de facto building materials of the hi-fi loudspeaker, aren't much use if you want to make a transducer that looks like a prize water melon to suspend from the ceiling. We've got one of those, too. And a silver partner just for the hell of it. Eat your heart out IKEA.

And the best bit is that none of these stylish shenanigans are necessarily a bad thing from a sound quality standpoint. Soft shapes tend to inhibit the propagation of internal standing waves – which is helpful. Modern plastics, composites and aggregates can bring superior damping properties to the party as well. So if you think sexy styling is necessarily achieved at the expense of sonic excellence, stick around; there are a few surprises in store.

Understandably, the group splits into myriad sub-categories. The baby standmount/bookshelf contingent comprises models from Opera, Blueroom (with sub) and Sony. Elac's strikingly space-age CL330 Jet ups the standmount ante and price – £2,500 but it comes with its own exquisite dedicated stand. And then there's U-Vola's melon-apeing pod that hangs from the ceiling on steel wire. Floorstanders are represented by T+A, Dali, Waterfall and Sequence (though you also hang this on the wall) and rounding things off is a full 5.1 system from Jamo.

## ON TEST

Blueroom Minipod and Bass Station	£768.00
Dali Piano Noble	£1,059.00
Elac CL 330 Jet	£2,499.00
Jamo A410PDD	£650.00
Opera SP-1	£525.00
Sequence 400	£300.00
Sony SS-LA500ED	£320.00
Syn Factory U-Vola	£1,482.76
T+A Talis TLS3	£1,799.00
Waterfall Victoria	£1,547.00

## EQUIPMENT USED

AVI Reference S2000MC CD player  
 AVI S2000MP preamplifier  
 AVI S2000MM monoblock power amplifiers  
 Townshend Audio Isolda Cryogenic interconnects  
 Townshend Audio Isolda Cryogenic speaker cables  
 Slate Audio speaker stands

## MUSIC USED

Robbie Williams - *Swing When You're Winning*  
 Larry Carlton - *Deep Into It*  
 Joni Mitchell - *Both Sides Now*  
 Tony Bennet - *Playing With My Friends*  
 Anastacia - *Freak Of Nature*  
 Martin Taylor - *Nitelife*  
 Jools Holland - *Small World Big Band*

## Dali Piano Noble

SOUND ★★★★★ | VALUE ★★★★★ | £1,059.00 (subwoofer £625.00)

CONTACT 0045 96 72 11 55 www.dali.dk GUARANTEE 5 years

Cold to the touch and, as the name suggests, shaped rather like grand pianos, Dali's elegant columns use anodised extruded aluminium enclosures and are manufactured in mirror pairs which means you can have the curved side facing inwards or outwards. I chose outwards.

Dali claims the distinctive curvature makes each enclosure immensely rigid and that the heavy, inert layer bonded to the inside suppresses resonance. The baffles are made from MDF though, and support three drive units: a one-inch soft dome tweeter and two five-inch mid-bass drivers. The treated paper cones used in the bigger drivers are said to combine low mass and high rigidity.

Each enclosure is front-ported behind fixed grilles, and with the cable terminal hidden away under the plinth, the appearance is exceptionally clean and sleek, though the plinth's footprint is rather small.

### SOUND QUALITY

Dali's claim that you don't have to sit bang in the middle to get a natural tonal balance is realised in

practice; you quickly forget about the speakers when the music starts, and that's always a good sign.

It's hard to single out facets of the Dali's sound. The balance is relaxed, musical and unobtrusive but far from uninformative. Bass addicts will have to look elsewhere for visceral thrills (or add the matching Forte subwoofer which successfully adds both slam and extension) but the long, tall Dalis are smooth and tuneful at low frequencies and subtle resolvers of detail through the mid and treble. They go loud without strain and always stay impressively in control.

Best of all, their delivery sounds natural and unforced. Not the most dynamic in this test, maybe, but probably the easiest to listen to.

### CONCLUSION

Ostensibly designed to fulfil a role as part of Dali's Piano home cinema system, the Nobles do just fine as stereo speakers. They look striking and tasteful but aren't 'in your face'. Much the same can be said of their sound.



## Blueroom Minipod and Bass Station

SOUND ★★★★★ | VALUE ★★★★★ | £299.00, £469.00

CONTACT 01273 571748 www.minipod.com GUARANTEE 1 year

Blueroom is as culpable as any manufacturer for starting this whole style revolution thing and the increasingly ubiquitous Minipod – star of stage, screen and television product placement – are still to be outdone for cuteness.

Weirdness? U-Vola's melon-on-a-rope wins hands down.

Assemble enough of these three-legged babies with Blueroom's giant bongo-shaped Bass Station (which stands on four larger legs) and you can go the whole 5.1 yards, but we've plumped for the 2.1 solution.

As we know from experience, it's amazing how much bass can be coaxed from the rotund abdominal region of the dinky ABS plastic enclosures with their single Kevlar mid-bass driver, but the substantially built 250mm woofer and 70 watt amp of the Bass Station adds enough heft, extension and volume to make them a far more serious proposition than their comic appearance might suggest.

### SOUND QUALITY

Given a little care with placement, cables, sub-tuning and so on, the bass-augmented Minipods are capable of stunning results. It isn't that the Minipods are fussy (if you can't find a parking spot for the tripod undercarriage, Blueroom's optional wall brackets should do the trick), it's just that placed on decent stands, and with the sub pulled well away from the wall, the system can conjure up a richly textured and detailed soundscape of scalp-tingling realism and almost holographic depth.

Don't underestimate the Bass Station's part in this either. It doesn't just add solidity and impetus to the sound but opens up the Minipod's already exquisite midrange still further. That said, voices can sometimes sound a little thin and the sub isn't exactly the last word in speed and slam. But, truth is, this system sings a whole lot better than the Tellytubbies.

### CONCLUSION

If the look you're after is cool, sophisticated and discreet, blobs of plastic with big yellow faces and enormous belly buttons just aren't going to cut it. Whether you get the joke or not, though, it's hard not to fall for the sound's openness, expression and detail. Strongly recommended.





## Elac CL 330 Jet

SOUND ★★★★★ | VALUE ★★★★★

£2,499.00 (inc stands) CONTACT 01494 551551

www.elac.com GUARANTEE 10 years

If Smirnoff made ten pin bowling ball cases, my guess is they'd look a lot like the CL330 Jet, Elac's extraordinary aluminium alloy take on Teutonic audio cool. You won't find a more potent-looking speaker in this group; nor one with such flawlessly formed details. The size and precision machining of the spikes on the top plate of the equally stunning dedicated stands are a good example. The rear one has a big locking nut which allows you to minutely adjust the ribbon tweeter's angle of attack.

Attack seems an appropriate word in this context; the CL330 looks like weapons-grade hi-fi. The sheer depth (360mm) of the inverted keyhole alloy enclosure is something of a shocker, but then so is the appearance of the small (115mm) but curiously smooth and shiny mid-bass driver. But Elac has maximised internal volume so that the long throw aluminium driver can deliver some serious action downstairs.

### SOUND QUALITY

In a nutshell, the Elacs sound almost uncannily precise and clear with a bass performance that isn't at all 'obvious' but phenomenally well-controlled and hard-hitting. Bass guitar sounds astonishing on these speakers, not just the transient definition but the weight and note shaping too.

Treble is a bit special, too – extended and smooth and capable of resolving rich tonal colours and harmonics. Some might say the sound is never less

than squeaky clean but it's also remarkably explicit and open, especially through the midrange, though some might prefer a slightly warmer tonal balance. Stereo perspectives are beautifully handled; not too crunched up or spaced out.

The Elacs are faithful to the tempo of music and exhibit terrific drive and impetus – they definitely thrive on power. Whack up the volume and there's kick and slam aplenty. And boy can they boogie.



### CONCLUSION

The Elacs are expensive but, as with the movie *Titanic*, you can see (and hear) where the money's been spent. The almost frightening functionality of the design is matched by an equally explicit and dynamic sound. People who like their hi-fi warm and cuddly might do well to look elsewhere. We were rather blown away. Recommended.

## Jamo A410PDD

SOUND ★★★★★ | VALUE ★★★★★ | £650.00

CONTACT 01788 556777 www.jamospeakers.com GUARANTEE 7 years (sats), 2 years (sub)

In any other line-up, Jamo's new A4 Home Theater system would come over all cutting edge and avant-garde. Here it merely looks a bit racy. But it shouldn't be marked down for that. The majority of surround packages are seldom less than intrusive, some are downright ugly, and the A410PDD is neither of those.

The idea is that the 50 watt subwoofer is as much of a design statement as the centre speaker and satellites – no need to hide it behind the sofa, you can actually hang it on the wall. The diminutive sealed, almost wafer-slim, two-way satellites can be wall-mounted or attached to their own dinky plastic stands. Each packs a 95mm mid-bass driver and 25mm soft dome tweeter.

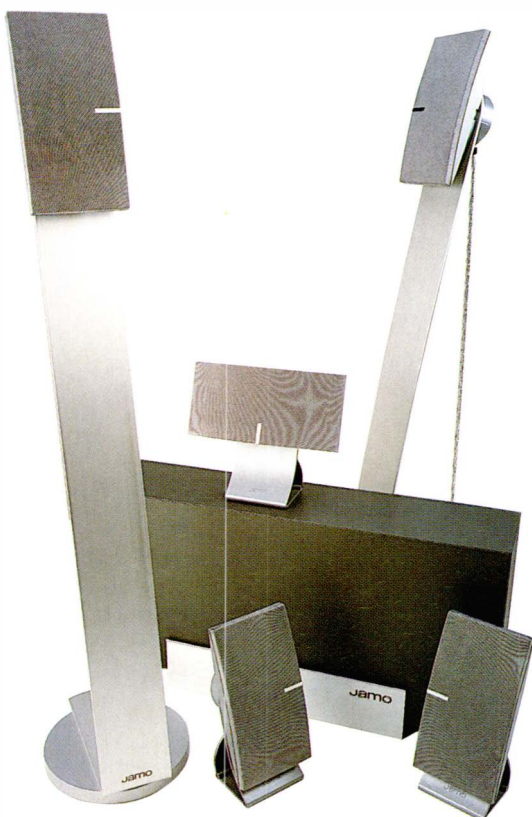
### SOUND QUALITY

Even with just a couple of satellites and the sub, the Jamo can project a surprisingly deep sound stage and image convincingly, filling out the sonic picture in a

believable way. Instruments and performers have presence and always manage to play together. It isn't quite so good at conveying fine detail however. It can pull emotion from a simply sung song but has a tendency to homogenise when things get busier, which detracts a little from ideal naturalness and harmonic interest. As a music speaker system, it makes everything sound just a bit too safe and samey. With a suitable blockbuster in the DVD player and the system firing on all speakers though, it punches well above its weight. The sub won't loosen mortar but it comes in low and hard when required.

### CONCLUSION

Not likely to change the course of interior design, the Jamo is nevertheless a very clean-edged and space-efficient solution for anyone who wants to move into decent 5.1 channel sound and still have change left over for a bunch of DVDs.



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\*Subject to status. Written details on request

## Opera SP1

**SOUND** ★★★★★ | **VALUE** ★★★★★

£525.00 CONTACT 01753 652669

www.ukd.co.uk **GUARANTEE** 2 years

The little Opera scrapes into this group by the skin of its teeth. It looks almost normal – just another classy standmounter in a nicely veneered box. There wouldn't be anything wrong with that, of course, but the Opera is cuter than it first seems. Not only does the enclosure have a beautifully curved back to give those standing waves the heave-ho, it's also built from solid hardwood rather than MDF. Opera says this makes it more rigid and less resonant.

And they were likely to be strengths anyway given the SP1's tiny stature – just 28.5cm tall. The 110mm polypropylene midbass driver is similarly bijou so, despite the best efforts of the front-firing reflex port, dub bass probably isn't on the agenda. The soft dome tweeter looks almost as big sitting in the veneered baffle. Attractive, though.

### SOUND QUALITY

Concerns over bass are well founded. Not only won't the Operas rattle the floorboards, they'd have trouble detaching the petals from a dying daffodil. Still, these speakers aren't about quantity but quality and at this they do a remarkably fine job.

That bass might not have much extension or thump but it is alluringly fast, taut and tuneful – you soon begin to appreciate its intelligibility. Even better is the wide open clarity and resolution of the

midrange and treble which brings benefits to all kinds of music but is especially seductive with female vocals which are handled with tremendous finesse and refinement. Their ability to time is just as impressive; they'll start and stop on the proverbial dime. The SP1s may not produce the weightiest sound around but they are particularly deft at communicating the musical message.

### CONCLUSION

The little Operas make a strong case for serious hi-fi with a twist – that sexily curved back, the gorgeous woodwork – being the right answer to the committed lifestyle's prayers. Certainly, if sound quality is high on the agenda, they recommend themselves.

## Sequence 400

**SOUND** ★★★★★ | **VALUE** ★★★★★ | £300.00

CONTACT 01367 253 295 www.sequence-design.co.uk **GUARANTEE** 3 years

Plymouth-based Sequence has been making its versatile and reasonably-priced panel-style speakers for a number of years now. The largest model in the range, the 400, dates back to the mid 1990s and hasn't changed substantially in that time.

Part of the appeal is that it looks much more expensive than it is – like a modest American panel electrostatic with a five-figure price tag. Actually it's just a tall, thin reflex box (side ported) with two, admittedly svelte, conventional dynamic drivers.

On the wall, the 400s become the speaker equivalents of a plasma TV – big but unobtrusive. Alternatively, the supplied spiked plinths can be attached in minutes, allowing the 400s to be used like regular floorstanders, though placement close to rear walls (but not corners) is recommended.

### SOUND QUALITY

On the whole, the 400s have a confident, lucid sound that's easy to listen to for long stretches. Most of the music survives. But there are two provisos. One, the bass is pretty weak – not just in terms of

output (they need all the wall proximity reinforcement they can get) but speed, articulation and tunefulness as well. The upshot is that everything in the basement sounds a bit bland – not necessarily in an unpleasant way, it's just that this is probably the last speaker you'd buy if you wanted to hear what it is that makes jazz bassist Marcus Miller so good.

And two, the 400s don't play very loud. Push them too hard and the distortion is only too obvious. Even at normal listening levels, dynamics are a little flat. If you can live with their limitations, the 400s are enjoyable enough, but most of the speakers in this group sound better.

### CONCLUSION

This is a lot of good-looking speaker for the money, both physically and in terms of perceived value. Its wall-mounting potential is a major plus, too. Perhaps that's the problem; the sound doesn't really live up to the look. As a flexible design solution it's a good buy, but the so-so sound quality precludes recommendation.





## T+A Talis TLS3

**SOUND** ★★★★★ | **VALUE** ★★★★★ | **£1,799.99 (£3,149.99 chrome)**

**CONTACT** 020 8863 9117 [www.taelektroakustik.de](http://www.taelektroakustik.de) **GUARANTEE** 2 years

The outrageous full-on chrome finish of these desperately elegant, almost shoulder-height columns from Germany's T+A loses some of its sheen when you realise that it adds £1,350 to the price of the standard speaker (silver or black). Better value, perhaps, is the special order paint service: any colour you like for an additional £700. Maybe just silver, then.

It isn't as if the biggest models in the Talis range aren't eye-catching enough anyway with their full length metal grilles, bowed extruded aluminium enclosures and huge, square metal plinths. Statement lifestylers and then some. There's plenty happening on the inside, too. Driver complement comprises an impressive four aluminium-coned midbass drivers and a very efficient ring radiator tweeter with an extended frequency all the way up to 50kHz – a supertweeter in other words.

### SOUND QUALITY

These speakers floored me. Perhaps it was because I was expecting the worst (tinselly 'German' sound and all) but ended up witnessing the best

performance of the group. The way the T+As appear to combine the openness, resolution, speed and transparency of an electrostatic panel with the weight, extension and fluency of a top-class box borders on the magical.

Their sound is lushly detailed and insightful yet effortlessly musical. They're strong at the frequency extremes (especially treble) and beautifully voiced in the middle. They image in 3D, they're fast and they rock. They go loud effortlessly yet stay smooth and refined yet deeply dynamic. More than any other speaker, they created the almost tangible presence of real musicians in the room. Genuine cake and eat it stuff.

### CONCLUSION

Quite why T+A hasn't gained a reputation as a premier league speaker manufacturer is something of a mystery if the Talis is anything to go by. Not only does it look a million bucks, it makes music with the relaxed assurance of a champ. Slightly too pricey for a Best Buy tag, they're enthusiastically recommended nonetheless.

## Sony SS-LA500ED

**SOUND** ★★★★★ | **VALUE** ★★★★★ | **£320.00**

**CONTACT** 08705 111999 [www.sony.co.uk](http://www.sony.co.uk) **GUARANTEE** 3 years

Sony can usually be relied on to come up with the goods when a slice of affordable design funk is required and the uncatchily-named SS-LA500EDs certainly hit the spot on both counts.

Available in a fetching variety of hues, the tiny light alloy reflex enclosures (basically ovoids with boat-shaped backs and provocatively protruding baffles) look vaguely like something the automotive design house of Pininfarina might do, an impression heightened by the classy car gloss paintwork. Business is handled by a 120mm plastic-coned mid-bass driver and a mesh cap-protected metal dome tweeter.

### SOUND QUALITY

These are lively, open and very informative little speakers but somewhat bass-light. The overall effect makes music with a significant bass content, rock for instance, sound less luxurious than it should.

At the same time, the treble can occasionally be a touch shrill. Cymbal work, for instance, sounds busy and detailed but lacks a natural smoothness and

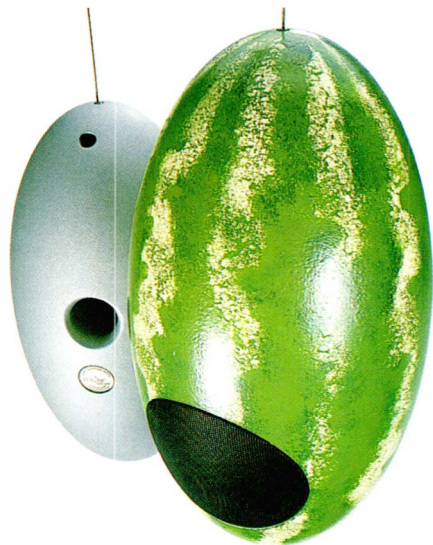
sheen. That said, the Sonys are more than capable of generating a cohesive and believable sound for their size that doesn't want for ambient detail or atmosphere. Moreover, they seem to handle all styles of music with equal assurance, though very bright recordings can excite a slight sting in the treble.

A revealing little speaker, not too coloured or musically manipulative and easy to listen to. Pretty good for such a compact eye-catcher.

### CONCLUSION

Further proof, if any were needed, that Sony is no laggard when it comes to making speakers and that good looks and a decent sound are far from mutually exclusive. With a little more bass and a slightly less excitable treble, they'd be up there with the best. As it is, they don't quite do enough to warrant recommendation.





## Syn Factory U-VOLA

**SOUND** ★★★★★ | **VALUE** ★★★★★ | 2,400Euros (c £1,480.00)

**CONTACT** 0039 0432 972362 [www.synfactory.com](http://www.synfactory.com)

If your yearning for bizarre design embraces the Minipods with open arms, you'll love the hanging melons of U-Vola. Some people say suspending your speakers from the ceiling on a single wire is the best possible way to support them. And that an ellipsoid is the ideal shape, especially when it's made from a high-density, low-resonance material such as Korodur conglomerate (mineral aggregates, basalt, quartz and a special bonding agent).

Well here it is, a fusion of science and Italian style from the lightly stubbled Alessandro Copetti. Back on planet Earth (another of the optional finishes, incidentally) the rest of the technology is straightforward: 100mm woofer, 26mm tweeter, eight ohm load, claimed 60-20,000Hz frequency response.

### SOUND QUALITY

I wasn't willing to explore the integrity of my ceiling by hanging 8kg weights on it so I rigged up some floor stands. Unfortunately, this rather misses the

point of the design, but needs must.

What I heard was good enough to make me wonder if I should dig out the drill. The sound projects well into the room, effectively making the enclosures disappear. Voices are natural and uncoloured, music is coherent and well-timed. Bass is surprisingly muscular, too. That said, there's a dullness and lack of vitality to the presentation that simply fails to hold, much less grab, the attention. For all their freedom from boxy artefacts, the U-Volas never quite came to life.

### CONCLUSION

I'm unwilling to write off the U-Volas without first hearing them in their optimum environment, hanging provocatively from the ceiling on 200cm of steel wire. The floorbound stands could have erased some vital magic. They're worth checking out for sure, especially if you're attracted to the concept.

## Waterfall Victoria

**SOUND** ★★★★★ | **VALUE** ★★★★★ | £1,547.00

**CONTACT** 07966 466 732 [www.waterfallaudio.com](http://www.waterfallaudio.com) **GUARANTEE** 1 year

What's inside Waterfall's Victoria speaker? Not a lot. Three drive units, wires routed as neatly as the strings of a guitar and 25 litres of air. Just as well. Anything messier wouldn't look right. When your loudspeaker is made of glass, there's not much left to the imagination.

Glass? A design gimmick, surely. Well, yes, and a brilliant one. It goes with absolutely anything, including the great outdoors if you place it near a full-length window. But there's at least one other good reason for using it, according to Waterfall's research. The high density of glass helps eliminate unwanted vibrations. True enough, rap the cabinet with your knuckles – it sounds unexpectedly dead.

Even so, the structure is still essentially undamped so each drive unit – a titanium dome tweeter and two 150mm mid-bass units with treated paper cones – have their own acoustic damping tubes enclosing the chassis, while

crossover components are housed in the plinth.

### SOUND QUALITY

Glassy? Thankfully not. Transparent? Pleasingly so. In fact, high frequencies are probably the Waterfall's forte – smooth, clean and with fine inner detail. Midrange presentation is very crisp, lively and articulate, too. These speakers may be hard to see, but they make you sit up and take notice.

Bass is warm and weighty, capable of driving the music along with some authority. Rhythmically lucid and surefooted, you never feel the Waterfall is smearing the beat. It keys in to up-tempo material enthusiastically. But while the bass is solid and well-shaped, it goes soft on the very deepest notes and sounds mildly detached from and at odds with the explicit, hard-hitting midrange. Imaging is a little squashed in breadth, too. Nevertheless, the Waterfall design is seldom less than musical and involving. It



doesn't sound quite 'correct' but it is enjoyable.

### CONCLUSION

This beautifully made and highly original take on what is essentially a conventional floorstanding design scores heavily on two counts. One, its extraordinary appearance actually absorbs the feel of its surroundings. And two, it makes music in a confident and involving way. It bags a tag.



fig.1. AV receiver that sounds great in Dolby Digital.



"A strong budget contender for forward thinking music fans" **Hi-Fi Choice September 2001**

"Great stereo performance; commendably solid build" **What Hi-fi? Sound and Vision September 2001**

"At this price point, nothing sounds better than NAD" **Essential Home Cinema October 2001**

fig.2. AV receiver that sounds great in stereo.



"A strong budget contender for forward thinking music fans" **Hi-Fi Choice September 2001**

"Great stereo performance; commendably solid build" **What Hi-fi? Sound and Vision September 2001**

"At this price point, nothing sounds better than NAD" **Essential Home Cinema October 2001**

#### Sounds obvious, doesn't it?

Unfortunately, AV products have always been a trade-off, usually sacrificing musical finesse in favour of brute strength and making too many compromises for them to ever find a place in an audiophile system. Now, NAD brings its wealth of experience in producing award-winning, no-nonsense stereo products to the world of home cinema, and the same principles of simplicity and value that make our amplifiers and CD players world-beaters, are now producing truly earth shattering AV receivers, DVD players and multi-channel amplifiers.

Contact us for your nearest NAD Home Cinema dealer, and figure it out for yourself.

# CONCLUSIONS

DAVID VIVIAN CUTS THROUGH THE SURFACE SHEEN.

**T**his has been a fascinating, even tantalising glimpse into the future of hi-fi speakers. The good news is that high style and high fidelity are not mutually exclusive, though sound-per-pound value isn't an obvious by-product of the fusion.

The bad news was that while it was easy enough to award a wad of well-deserved Recommended swing tags, there wasn't one speaker that combined performance and value in a sufficiently high-octane blend to bag a Best Buy. If you want maximum sonic satisfaction for the minimum

outlay, boring old wooden boxes still have the edge. But that may change with time.

The star of the test was T+A's gorgeous (if undeniably flash) Talis column with its metal grille and chromium finish so shiny you could shave in it. Fortunately the sound was just the opposite – large scale, organic and wonderfully easy-breathing. A joy to live with on all fronts.

After these, all the standmounters – even the astonishingly clean and dynamic

Elacs – sounded a little smaller than life. My favourite from this group was the Minipod which imaged well and sounded very natural and unfatiguing. The more conservative-looking Operas were tops for midrange detail and insight though they could probably do with a subwoofer too.

But the glass Waterfall Victorias perhaps sum up the spirit of this test best of all. See-through enclosure, transparent sound. Very cool.

**“THE GOOD NEWS IS THAT HIGH STYLE AND HIGH FIDELITY ARE NOT MUTUALLY EXCLUSIVE.”**

## DESIGNER SPEAKERS AT A GLANCE

					
<b>MAKE MODEL</b>	<b>BLUEROOM</b> MINIPOD AND BASS STATION	<b>DALI</b> PIANO AGILE	<b>ELAC</b> CL 330 JET	<b>JAMO</b> A410PDD	<b>OPERA</b> SP-1
<b>PRICE</b>	£299.00, £469.00	£1,059.00	£2,499.00	£650.00	£525.00
<b>SOUND VALUE</b>	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆
<b>CONCLUSIONS</b>	Whether you get the joke or not, it's hard not to fall for the Minipod's openness, expression and detail.	Look striking and tasteful but aren't 'in your face'. Much the same can be said of the Dalis' sound.	The almost frightening functionality of the design is matched by an equally explicit and dynamic sound.	Clean-edged and space-efficient solution for anyone who wants to move into decent 5.1 channel sound.	A strong case for serious hi-fi with a twist – that sexily curved back, the gorgeous woodwork...
<b>GUARANTEE</b>	1 YEAR	5 YEARS	10 YEARS	7 YEARS (SATS), 2 YEARS (SUB)	2 YEARS
					
<b>MAKE MODEL</b>	<b>SEQUENCE</b> 400	<b>SONY</b> SS-LA500ED	<b>SYN FACTORY</b> U-VOLA	<b>T+A</b> TALIS TLS3	<b>WATERFALL</b> VICTORIA
<b>PRICE</b>	£300.00	£320.00	2,400EUROS (c £1,480.00)	£1,799.00 (€3,149 CHROME)	£1,547.00
<b>SOUND VALUE</b>	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆	★★★★☆ ★★★★☆
<b>CONCLUSIONS</b>	The sound doesn't really live up to the look. As a flexible design solution it's a good buy, though.	With a little more bass and a slightly less excitable treble, they'd be up there with the best.	Needs to be hung for full effect. Worth checking out if you're attracted to melons.	Looks a million bucks, makes music with the relaxed assurance of a champ. Best in test.	Glass enclosure melts into its surroundings. Makes music in a confident and involving way.
<b>GUARANTEE</b>	3 YEARS	3 YEARS		2 YEARS	1 YEAR





# SUBWOOFERS

IF YOU WANT SERIOUS BASS FROM YOUR SURROUND OR STEREO SPEAKER SYSTEM YOU'LL NEED A SUBWOOFER. THE BOOMBASTIC DAVID BERRIMAN CHECKS OUT SIX OF THE BEST.

**N**ot everyone has room for large loudspeakers, especially with the advent of home cinema and the need for five boxes instead of two. Whether music lovers like it or not, many systems are bought for dual music/home cinema use.

So, with one eye on the CD shelves and the other on the DVD pile, we've chosen six active subwoofers covering a wide range of sizes and prices, with a view to finding out how well they fare at both jobs. The criteria for evaluation included bass definition and tunefulness, in addition to bass reach, so it's fair to say that the bias was towards music, but with an eye/ear on home cinema.

Size is important – with subs at least. There's no getting away from the basic law of physics which balances bass depth against sensitivity – and hence maximum sound levels and power handling. It's possible to minimise box size, but at the expense of either bass reach or maximum output. Small size is of course domestically desirable and so there is always a balancing act to be done by the designer. The end result simply has to be judged on its merits. Generally, a good big 'un will beat a good little 'un, but there are always exceptions to the rule.

All the subs in this group are active. In other words they each have their own built-in amplifier which accepts the low-level line (or phono) output of a stereo preamp, or the mono output of a home cinema receiver or processor. This is amplified internally with at least 100 watts to power a woofer drive unit having sufficient cone area and robustness to shift plenty of air and produce wafts of bass. The woofer may be in a sealed box (which can give better transient performance) or one with reflex port tuning, which can give deeper bass and/or lower distortion or increased sensitivity (depending on the design aims).

Subs normally have variable low-pass filtering, to remove high frequencies from the woofer and to help blend its sound seamlessly with the main speakers in the system. They also tend to feature a phase reversal switch – or even better, a variable phase shift control – to allow closer fine tuning for each situation, particularly where the subwoofer is not close to the main speakers and also to compensate for the low frequency phase shift of different main speakers. Many subs also have high-level inputs, which accept speaker level signals, for use with amplifiers which have no low-level outputs, or for those who prefer this method of connection.

## ON TEST

Acoustic Energy Aesprit	£650.00
Castle Classic 8	£800.00
M&K MX700	£1,595.00
Monitor Audio's ASW100	£350.00
REL Storm	£900.00
Ruark	£2,000.00

## EQUIPMENT USED

Bryston BP5 preamp,  
Bryston 3BNRB power amp  
Sony DVP-S5360 DVD player  
Musical Fidelity X-24  
DAC for stereo  
Arcam AVR 100 receiver  
for home cinema  
Ruark Prologue One and DBS5  
compact loudspeakers

## MUSIC USED

**CD:** Kraftwerk - *The Mix*  
John McLaughlin, Paco de Lucia and  
Al Di Meola - *A Night In San  
Francisco*  
**DVD:** Eurythmics - *Peace Tour*  
*Gladiator OST* (battle scenes)



## ACOUSTIC ENERGY AESPRIT 308

**“THIS SMALLISH SUB PUT IN A STERLING PERFORMANCE, WITH EXCELLENT DEFINITION.”**

**SOUND** ★★★★★ **VALUE** ★★★★★ **£649.95** **CONTACT** 01285 654432 [www.acoustic-energy.co.uk](http://www.acoustic-energy.co.uk) **G'TEE** 3 years

**T**his medium-sized sub is well presented in a real-wood, ash veneered, 15mm braced MDF cabinet with 30mm front baffle, featuring, uniquely in this group, an infra-red remote control for adjusting volume level and crossover frequency. Not only is this a very handy feature, but if the remote should by chance slip under the settee cushion the rotary knobs (which turn under control of the remote handset) are accessible on the front of the cabinet just beneath the grille: all of which makes adjusting the settings an absolute doddle.

Inputs are provided for both line and speaker level signals and there's a loop back output to your power amp (in case your preamp has no separate pre-out sockets), which is another really useful feature. There's also a first-order (6dB/octave filtered) speaker level output for connecting the main stereo pair in a hi-fi system. There is no mention of any additional internal stereo amplifier, so this presumably comprises a series capacitor per channel, between the speaker input and output sockets. This should be okay for small sealed systems, but may not work so well for reflex speakers, due to their relatively peaky impedance curve, (which will add bumps to the crossover roll-off curve). Auto signal sensing, which turns the amplifier on and off in response to the presence of input signal, and phase reversal switches (not continuously variable) are also included. The woofer is a 220mm pulp cone unit with an unusually large forward roll surround and cast chassis, loaded by a downward firing port, flared at both ends to reduce air turbulence. The internal amplifier is rated at 200 watts RMS into eight ohms.

### SOUND QUALITY

I had no great expectations of this unit, as it is not as large or heavy as the Ruark or REL units, nor as expensive. Indeed, racking up at £650 it comes somewhere in the middle to lower end of the group's price range. However, just to remind me that it's never a good idea to pre-judge anything, I found that this smallish sub put in a sterling performance, with excellent definition and sufficient weight to make a genuine contribution to movies and music replay alike. The Aesprit 308 was one of the fastest, cleanest and most rhythmic in this test, lacking the presence of the Ruark, or the weight and depth of the REL, but it was not that far away from either at a mere fraction of the price. Not only was bass fairly deep, the overall sound from the system was fleet, clean, open and uncluttered, enabling a good dynamic overall sound to emerge, without the bass cluttering the mid and treble. *When Tomorrow Comes* from the Eurythmics DVD was punchy and dynamic with much of the live nature of the event conveyed with immediacy and excitement. Likewise, with the *Gladiator* battle scenes, the Aesprit 308 provided a good foundation to the sound stage, with convincing depth and clarity matched or beaten only by the Ruark, REL or M&K. Indeed, the 'speed' of delivery, lack of clutter and tunefulness had me convinced that the AE was a sealed box design, until I peaked underneath and was reminded that, yes, this really was a reflex.

So the end result is a very satisfactory result from the Aesprit 308 for both music and movies. Fine sound and value in a well-built, well-finished product at an affordable price. What more could you ask for?

A super sub with its own remote control.





## CASTLE CLASSIC 8

**SOUND** ★★☆☆ **VALUE** ★★☆☆ **£799.00** **CONTACT** [www.castle.uk.com](http://www.castle.uk.com) 01756 795333 **G'TEE** 5 years

Castle is renowned for its cabinet quality and the Classic 8 is no exception, with a solid and rigid 25mm MDF box finished in a particularly attractive grainy oak veneer. The casing is finished off with rounded edges and is very heavy for its size. It is a very nicely built unit, utilising a 300mm cone woofer unit with a cast chassis. This is quite large in diameter for this size of cabinet (37 litres) and is made for Castle by professional audio specialists ATC. Bass loading is in sealed box configuration. The internal amplifier, designed by ATC, is rated at 200 watts. According to Castle, this subwoofer was designed for clean bass reproduction down to 20Hz, though as with all the other speakers in this test, no precise decibel specification was given.

There are no high-level (speaker) inputs, but RCA sockets are provided for both left and right stereo inputs. Controls are provided on the rear panel for level, low-pass filter frequency (variable between 40-200Hz) and phase (variable continuously between 0-180 degrees), allowing greater positioning flexibility. No auto signal sensing for power on/off is provided for home cinema use. For LFE (Low Frequency Effects) use, Castle recommends turning the cut-off filter to its maximum 200Hz setting.

An annoying feature of the level control was its operating direction. It is labelled 'attenuation', so attenuation increases in the clockwise rotation. This, of course means that volume level drops as the control is turned in the normal 'up' direction.

Needless to say, it was difficult to avoid turning the level down instead of up when trying to increase bass level: a small point perhaps but all the same, a vexing idiosyncrasy. A little more gain would have been ideal, as the control was almost but not quite at maximum with the Bryston preamp. On the other hand, the Castle gets high marks for an informative and useful four page A2 manual with plenty of advice on connecting and positioning for optimum performance.

### SOUND QUALITY

Bass with the Classic 8 was quite deep and warm. With the Kraftwerk tracks the low end was deep and fruity, lacking a touch of crispness and definition. Not an intrusive or boomy sound, smooth and clean, but just lacking the ultimate speed of the Acoustic Energy, Ruark or M&K subs. The variations in pitch and timbre in Kraftwerk's *We Are The Robots* were a little obscured. Home cinema followed the same pattern. With the *Gladiator* battle scenes for instance, the pounding hooves did not have quite the last degree of presence or weight. *When Tomorrow Comes* didn't quite have the same big stadium sound, dynamics or clarity as the Ruark or REL models. In truth, the bass was a bit lumpy and slow which was a trifle disappointing given the fine pedigree of the ingredients. The Classic 8 avoids boom for a deep and well-mannered sound presentation, but it didn't quite match the less expensive Asprit sub for clarity, impact and definition.

**"THE BASS WAS A BIT LUMPY AND SLOW WHICH WAS A TRIFLE DISAPPOINTING GIVEN THE FINE PEDIGREE OF THE INGREDIENTS."**

Castle's Classic 8 is one heavy bass box.





## M&K MX700

**SOUND** ★★☆☆☆ **VALUE** ★★☆☆☆ **£1,595.00** **CONTACT** [www.mksound.com](http://www.mksound.com) 020 8603 0480 **G'TEE** 5 years

**“BLACK PAINT FINISH AND PRESSED STEEL WOOFERS MAY BE OKAY AT HALF THE PRICE, BUT AT £1,600?”**

Light on features but offering good bass for its size.



**H**ailing from the USA, Miller and Kreisel has gained quite a reputation for its active speaker systems. The MX700 features a 200 watt amplifier and, along with the Monitor Audio sub, is one of the smallest in the group, though not the lightest (it's noticeably heavier than the ASW100). The MX700 is unique in this test in having two pressed-steel chassis magnetically shielded, vented 210mm woofers. One is mounted conventionally inside the enclosure and the other has its dual-magnet chassis protruding into an open-sided cavity opening to the lower rear. This push-pull arrangement is intended to cancel non-linear distortion from the drivers. As with the REL, the finish of the solid cabinet is unprepossessing black paint.

Controls are provided on the rear panel for volume level and frequency, variable between 50Hz and 125Hz and with a bypass switch for use with LFE outputs of home cinema amplifiers. Phase is not continuously variable, but reversible via a toggle switch. Stereo left and right phono inputs are provided (just one should be used for LFE mono). There are no dedicated high-level (speaker) inputs and there is no auto signal sensing for switching the electronics off in the absence of signal – a handy feature for home cinema use.

For its price, the M&K seems a bit light on features – it would have been nice to see at least variable phase and high-level inputs. Black paint finish and pressed steel woofers may be

okay at half the price, but at £1,600? Funny how American products seem to end up that bit pricier on this side of the pond. On the other hand, it does have a very comprehensive manual with good advice on connecting and positioning the M&K range of subs.

### SOUND QUALITY

The MX700 provided powerful bass, clean, well-controlled and surprisingly deep considering the small cabinet size. For instance, playing Kraftwerk's *We Are The Robots* and *Trans-Europe Express* bass reproduction was clean and articulate and picked out deep synth tunes. It didn't quite have the depth of the Ruark or REL, however. *When Tomorrow Comes* revealed very good definition, reproducing the sound of the venue convincingly and proved the MX700 to be one of the best in the group in this area. Even so, it wasn't so very far away from the AE Aesprit 308 at half the price, which might even have had marginally better dynamics. The battle scenes in *Gladiator* were well reproduced with plenty of definition and clarity and indeed, the MX700 seemed slightly more at home with home cinema due to its clean, controlled delivery, whereas for music a little more sense of scale, depth and warmth would have been welcome. But overall it's a very fine-sounding and compact woofer, certainly high in this group for performance, albeit at rather a high price for its size and features.

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<b>HITACHI.C32WF523N</b>	32" Pure flat Widescreen	£999.99	£699.00	£300.99	30.10%
<b>PAN.TX36PF10</b>	36" Pure Flat Wide Screen, 100HZ, No Cabinet	£2,499.99	£1,299.00	£1,200.99	48.04%
<b>PANASONIC.DVD-L50EB</b>	Portable DVD, 5" LCD Screen	£899.99	£399.00	£500.99	55.67%
<b>PANASONIC.DVD-LV70EB</b>	Portable DVD, 7" LCD Screen	£999.99	£649.00	£350.99	35.10%
<b>PANASONIC.TX-28PK10</b>	28" Pure Flat Wide Screen, 100HZ	£1,119.99	£529.00	£590.99	52.77%
<b>PHIL.VR768</b>	Nicam Video Recorder - No Remote Control	£499.99	£59.00	£440.99	88.20%
<b>PHILIPS.DVD-955</b>	DVD Player, Dual Laser, AC3 Decoder	£399.99	£129.00	£270.99	67.75%
<b>PIONEER.DV-340.SILVER</b>	DVD Player, Twin Laser, CDR/RW Playback	£199.99	£99.00	£100.99	50.50%
<b>PIONEER.DV-343.BLACK</b>	DVD Player, Twin Laser, CDR/RW Playback	£199.99	£99.00	£100.99	50.50%
<b>PIONEER.DV-545.SILVER</b>	DVD Player, Twin Laser, CDR/RW Playback	£319.99	£199.00	£120.99	37.81%
<b>PIONEER.DV-737.GOLD</b>	DVD Player, P.Scan, Component Video Out	£699.99	£349.00	£350.99	50.14%
<b>PIONEER.VSA-E07.GOLD</b>	THX Ultra Amplifier, AC3/DTS	£1,299.99	£399.00	£900.99	69.31%
<b>PIONEER.VSX-859RDS.BLA</b>	THX Receiver, AC3				
	DTS-ES, 5X100w, 7.1 Channel in/out	£649.99	£349.00	£300.99	46.31%
<b>PIONEER.VSX-859RDS.GOLD</b>	THX Receiver, AC3/DTS-ES				
	5X100w, 7.1 Channel in/out	£649.99	£349.00	£300.99	46.31%
<b>PIONEER.VSX-909RDS.BLA</b>	THX Ultra Receiver, AC3/DTS-ES				
	5x110W, 7.1 Ch in/out	£999.99	£399.00	£600.99	60.10%
<b>SONY.DAV-S500</b>	DVD AV System, 5x Sat Spkars & Sub	£599.99	£499.00	£100.99	16.83%
<b>SONY.DVP-NS400D.BLACK</b>	DVD Player, AC3 Decoder	£249.99	£225.00	£24.99	10.00%
<b>SONY.KV-28DS20</b>	28" Pure Flat Widescreen, Digital Tuner				
	Dolby Prologic, No Cabinet	£1,199.99	£499.00	£700.99	58.42%
<b>SONY.KV-28DS65</b>	28" Pure Flat Widescreen, Digital Tuner				
	100HZ, Dolby Prologic, No Cabinet	£1,499.99	£749.00	£750.99	50.07%
<b>SONY.KV-28FQ75</b>	28" Pure Flat Widescreen, 100HZ, No Cabinet	£1,399.99	£899.00	£500.99	35.79%
<b>SONY.KV-28FX20</b>	28" Pure Flat Wide Screen, No Cabinet	£799.99	£449.00	£350.99	43.87%
<b>SONY.KV-36FS70</b>	36" Pure Flat Wide Screen, 100HZ	£2,400.00	£1,599.00	£801.00	33.38%
<b>SONY.SLV-SF990.SILVER</b>	Nicam VCR	£399.99	£149.00	£250.99	62.75%
<b>SONY.VPL-VW10HT</b>	LCD Front Projector, 1000 Ansi Lumens				
	1366x768 Pixels	£6,499.99	£3,499.00	£3,000.99	46.17%
<b>TECHNICS.SA-DX930</b>	AC3/DTS Receiver, 5x100w	£299.99	£149.00	£150.99	50.33%
<b>TOSHIBA.32WD98B</b>	32" Widescreen, super flat, 100hz,				
	AC3, No Cabinet	£1,399.99	£699.00	£700.99	50.07%
<b>TOSHIBA.32ZD08G</b>	32" Pure flat Widescreen, 100HZ, AC3	£1,549.99	£799.00	£750.99	48.45%
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<b>SOUND</b> ★★☆☆☆	<b>VALUE</b> ★★★★★	<b>£299.95</b>	<b>CONTACT</b> 01268 740 580	www.monitoraudio.com	<b>G'TEE</b> 1 year
--------------------	--------------------	----------------	------------------------------	----------------------	---------------------

**M**onitor Audio's compact ASW 100 houses a decent 120 watt MOSFET amplifier and ten inch woofer, which is pretty impressive for under £300 even before you've listened to it. Left and right inputs are provided at both low level (RCA phonos) and high level, for loudspeaker level signals. There's also a set of high-level outputs, presumably the high level inputs filtered by a capacitor, which should be okay for small sealed box loudspeakers, rolling them off below around 100Hz or so and improving power handling. The exact frequency and slope of roll will however depend on the speaker's impedance curve. The sub features a 250mm paper-coned woofer with a pressed-steel chassis powered by a 120 watt amplifier and loaded by two long port tubes flared at both ends to reduce turbulence. Sound output is claimed to extend to 27Hz, without specifying dB levels (whether this is -3 or -6dB below average).

It was particularly nice to see a continuously variable phase control on such an inexpensive product, which should help with fine-tuning the bass for optimum blending with the main speakers. Bass level is continuously variable, as is the low-pass filter cut-off, which has a good range, between 40Hz to 180Hz and sharp cut-off (fourth order 24dB/octave Linkwitz-Riley shape). One feature not found on the others in this group is an Audio/Video switch, which provides boost at 30Hz for extra weight with home movies. Purists may wince, but this is better than compromising music performance for the sake of impressing on movies. It's a useful thing to have but its position

on the back panel means it's not that easy to reach for changing over. There's no auto signal sensing power switching, but it would be churlish to complain at this price.

Oh, and finally, it comes complete with an informative and helpful 18-page booklet covering Monitor Audio's three subwoofers. Standard finishes are black oak and cherry vinyl.

### SOUND QUALITY

When the Monitor Audio ASW100 was first fired up, we had no price and did not realise how much less expensive it is compared to the others. Comments such as 'not bad for such a small speaker' and 'bass quite deep, but not so clear as the Ruark or M&K must therefore be taken in context. The Kraftwerk tracks sounded slightly lumpy and lacking in ultimate pitch definition, *When Tomorrow Comes* was slightly woolly at low frequencies and not particularly dynamic, and even the words 'drones slightly' were written down. But when the price was revealed, a different light was shed on the results. Looking back over the notes, it was clearly unfair to compare this little speaker to models at three to five times the price and in this context the ASW 100 looks like a little bargain. Where else can you get a real 120 watt subwoofer with good sound quality (and it is good) at this price? Sure, the *Gladiator* battle scenes don't quite have the same impact definition and bass reach as the front runners in this group, nor is the bass as deep and tuneful. But would you expect it to be? In essence they don't do a bad job at all and it is small too.

A little bargain, in every sense.





## REL STORM III

**SOUND** ★★★★★ **VALUE** ★★★★★ **£900.00** **CONTACT** 01656 768777 [www.rel.net](http://www.rel.net) **G'TEE** 3 years

It's probably true to say that REL single-handedly rehabilitated subwoofers in the UK, making them acceptable for music once more even before the current trend for home cinema took off. This REL is a large heavy sub, with a black painted 40-litre cabinet made from 30mm MDF – which explains why it is so very heavy. The internal MOSFET amplifier is rated at 150 watts and powers a 250mm long-throw woofer with heavy-duty cast chassis manufactured by British specialist Volt. The Storm is one of the most comprehensive in terms of inputs and controls within the group. It does not have continuously variable phase or auto signal sensing power switching, but it does have separate level controls for the high-level and low-level inputs. This means you can connect both of them simultaneously and adjust each for optimum performance with music and home cinema. It's a neat solution to the conundrum of how to use a sub for music and movies. You may wonder at the wisdom of using speaker-level inputs when line level signals may be available, but REL believes it to be superior because it matches the bass sound character of the sub to the main amplifier. Provided the main amplifier is of good quality, this should be fine.

We listened in stereo this way, partly because the left and right inputs have different sensitivities – to use them you must insert a 12dB attenuator (available from REL) into the more sensitive socket. REL does not explain this in the 17-page manual (which is otherwise excellent and possibly the best of this group). The claimed frequency range (no dB figures) for the Storm III is 18Hz-120 Hz. The input filtering is configured via two rotary switches. REL calls it the ABC system, which provides steps of about a semitone, between 22Hz and 99Hz.

The 22Hz setting may seem low, but some larger main speakers need a very low crossover frequency to avoid heavy bass when used with a subwoofer. Many subs simply can't cross over low enough to do these justice. Considering its bulk size and quality, the Storm III's price looks very reasonable.

### SOUND QUALITY

Bass delivery with *We Are The Robots* was deep and throbbing, fruity and full, certainly very good and with plenty of depth and weight and tuneful enough to follow the constantly shifting deep synth notes on this track. *Autobahn* was also deep and powerful, adding much weight to the sound of the vehicle accelerating away, not to mention the music. Here the comparisons tended to be against the more expensive Ruark subwoofer. The REL was slightly richer and fruitier, which gave it just the edge on weight and warmth, though not quite boasting the Ruark's ultimate resolution. The REL also gave really clean and quiet midrange, which helped generate an overall sense of naturalness and dynamics (as did the Ruark). *When Tomorrow Comes* displayed excellent integration with the smaller main speakers – the stadium sound was perfectly clear and the bass meaty and tuneful. The Storm III really enhanced the overall sound quality and realism on this track. The horses in the *Gladiator* charge scene sounded suitably deep and powerful, adding a fine sense of weight and scale to the soundstage, though just losing out to the much more expensive CL300 for ultimate definition and crispness.

There is much to like about the REL Storm III. REL deserves its position as premier sub manufacturer – that is all it does after all. At £900 the Storm III has got to be on anyone's short list.

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## RUARK CL300

**“ALTHOUGH I HAVE HEARD DEEPER BASS IT'S RARELY BEEN AS NATURAL AS THIS – A TRUE HIGH-END SUBWOOFER.”**

**SOUND** ★★★★★ **VALUE** ★★★★★ **£2,000.00** **CONTACT** 01702 601410 [www.ruark.net](http://www.ruark.net) **GUARANTEE** 2 years

**R**uark's CL 300 is an Isobarik system, and contains two extra-long-throw 300mm woofers, one with its own separate sealed box within the main enclosure and the other in an outer chamber. Only the outer woofer is visible and so the sub looks to all intents and purposes like a conventional sealed-box loudspeaker from the outside. However, the two units operate in tandem, one behind the other, to enlarge the effective size of the enclosure at the expense of reduced electrical impedance as 'seen' by the internal amplifier. This poses no problem electronically, as the MOSFET circuit is specifically designed to deliver the required 300 Watts of power.

The result should be greater bass extension but with the transient crispness and slow low-frequency roll-off and phase shift of a sealed box. Inputs are comprehensive, with high-level speaker and low-level phono sockets, both with their own separate level controls – just like the REL. The frequency range of the low pass filter is 30Hz to 120Hz, and there is also a continuous phase control, both of which should allow blending – even with floorstanders – in a variety of locations. It also has the benefit of auto-sensing which switches the unit off when there is no signal and it all fits into a 25mm MDF cabinet which is beautifully veneered in real cherry. The unit's crowning glory is the smoked glass top covering an LED display which indicates the crossover frequency and the auto-sensed 'off' state. The display greatly eases many of the traditional setting up difficulties, while the glass top looks oh so smart with the crisp-edged wood cabinet raised on its grey feet and support

cones. To say this is the best looker of the group is no exaggeration. It's drop dead gorgeous!

### SOUND QUALITY

The Ruark may be the largest in the group but it was also clearly the best for music. The Isobarik dual-woofer enclosure seems to work, providing a tuneful delivery with plenty of definition and sufficient bass reach to satisfy with home cinema and provide added depth and foundation to music. The deep monotonic throbbing bass line in Kraftwerk's *Trans-Europe Express* was very well reproduced and characterful, whereas *We Are The Robots* was more fluid than with the others in the group, the CL300 reproducing deep synth tunes which were obscured by some of the other subwoofers. The whole sound on this track was darker and more sinister, as if capturing the silence between the sounds, clarifying the vocals and adding a new dimension to this cold and clinical work. A fine example of how a good sub doesn't only affect the bass notes.

It was hard to isolate what made the Eurythmics *When Tomorrow Comes* so good. The CL300 simply captured the atmosphere better – in addition to seeming more controlled and real. Likewise, the bone-crunching sounds of the *Gladiator* battle scenes were realistic without shaking the house, offering convincingly thundering hooves. Some home cinema listeners, used to thunderous resonant bass may be slightly disappointed at the lack of furniture rattling from the Ruark but although I have heard deeper bass it's rarely been as natural as this – a true high-end subwoofer.

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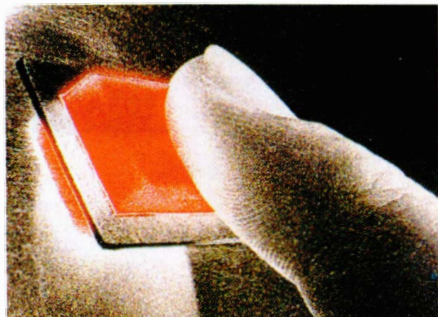


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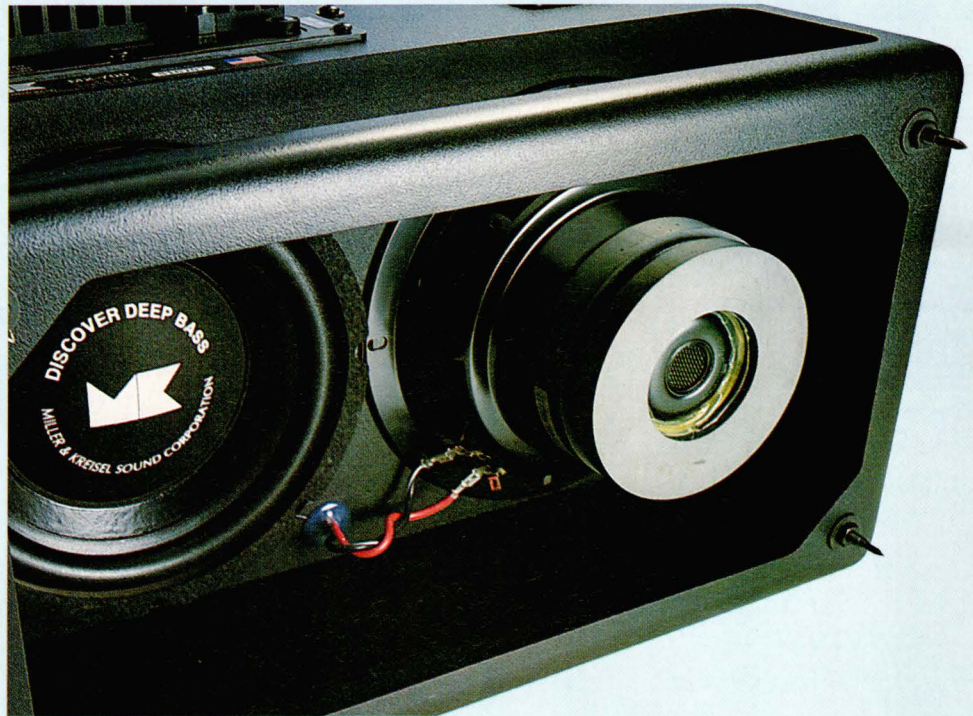
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# CONCLUSIONS

DAVID BERRIMAN DIVES DEEP.

**I**t was quite clear from early on during the tests that the Ruark CL300 was something special, both in its modern appearance and poised, detailed and unfussed sound – one of those products that brings a smile to the face. But not everyone can accommodate or afford this kind of quality. Looking across the results from the other contenders, it was also clear that the REL Storm III also fared very well. At under half the price, it shared many of the Ruark's qualities: slightly diluted, not quite so detailed, with a richer and marginally deeper bass. So for those after a richer deeper sound and on a keener budget, the REL would be a fine choice, though it can hardly be described as compact. Of the remaining four, the M&K MX700 was undoubtedly good as well as small – which will suit those for whom space is at a premium. However, it's expensive next to the REL Storm or Acoustic Energy Aesprit, based on performance and the overall package.

Of the others, the best performer is undoubtedly the Aesprit. At £650 it is a little less expensive than the REL Storm III, but is more compact and offers a performance not so very far removed (slightly more dynamic and detailed but without the REL's power or bass reach). Indeed, I'd say the Acoustic Energy produced a more believable sound than the M&K for under half the price and has that lovely remote! Its dynamic and controlled sound is tuneful with music



and powerful with movies. Splitting the Castle and Monitor Audio may seem unfair, as one costs £300 and the other £800. Unfortunately for the Castle, though an adequate performer, it sits just under the REL in price and above the Acoustic Energy and is difficult to recommend at this price point. The

ingredients are there but it just misses the mark. Finally, the Monitor Audio which, almost by default, deserves high points for its value-for-money price of £300 and compact size even though it doesn't match up to any of the others in performance – a decent entry-level contender nonetheless.

**"THE ACOUSTIC ENERGY PRODUCED A MORE BELIEVABLE SOUND THAN THE M&K FOR UNDER HALF THE PRICE."**

## SUBWOOFERS AT A GLANCE



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PRICE	£649.95	£799.00	£1,595.00	£299.95	£900.00 (BLACK)	£2,000.00
SOUND VALUE	★★★★★	★★★★	★★★★	★★★★	★★★★★	★★★★★
CONCLUSIONS	Tuneful and dynamic sound with music or movies, handy remote.	Adequate performance, misses the mark at the price.	Fine dynamic sound with music or movies but expensive and short on features.	Overshadowed unfairly in this group but good for the price and compact too.	Excellent: powerful, detailed and deep, comprehensive facilities.	Controlled, detailed and dynamic, a musical delight – good with movies too.
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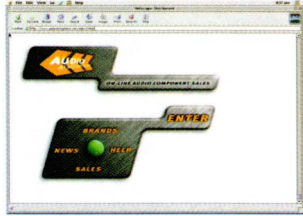
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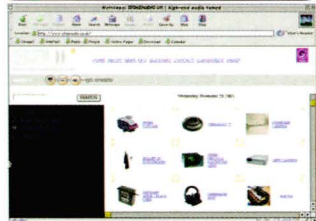
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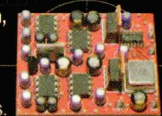
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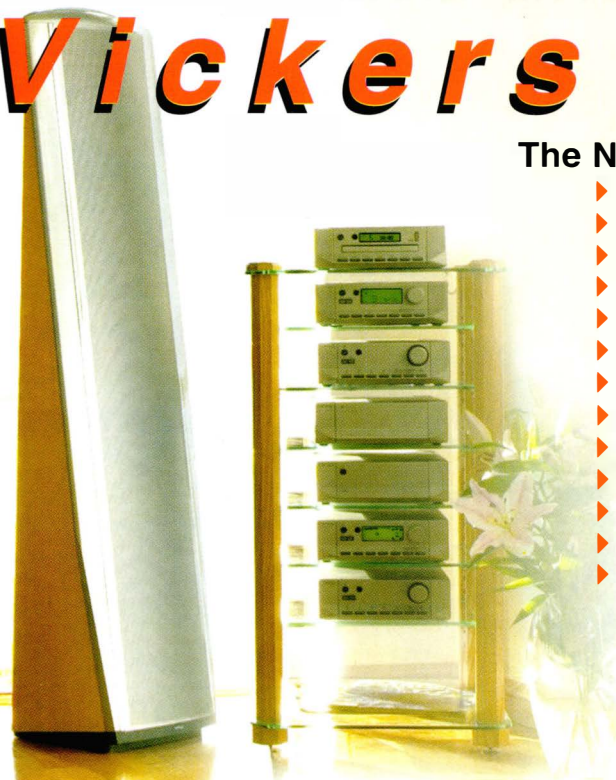
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**AUDIOLAB 8000T** superb analogue tuner £300. Rotel RCD-965BX Best Buy CD player £125. AR sat/sub system, compact metal sats with neat black sub £90. Call 01273 478172.

**NAIM NAP500 POWER AMP,** £7,895 ono (new £10,250), 14 months old. NAIM NAC52 preamp, £2,700 ono (new £3,635), 18 months old. Both mint and boxed. Townshend turntable support £125 (new £235). Call 0771 922 1262 (day), 0118 946 1421 (eve) (Reading).

**MUSICAL FIDELITY CDT 'FROG'** CD player. Twin valve analogue/digital sound, styled on A1 amplifier. Excellent condition, boxed, £225. Call 01206 768592 (Colchester).

**B&W DM12 SPEAKERS,** excellent condition and sound. Wood veneer cases with wooden stands, £105 ono. Call 01923 823393 (London), email phillipsl@talk21.com.

**DENON DL-304 MC** cartridge, max 30hrs use, mint, £200. Audio Note IQ III MM cartridge, mint, max 70hrs, £200.

Both superb sounding for price.

Upgrade forces sale, can demo. Call 020 8287 1089, 07956 881260 (mob).

**THOMSON LYRA** MP3 player, mint boxed £75 ono. Roksan Xerxes turntable stand 12inch high, three leg, dedicated frame £35. Call 01273 478 172.

**ARCAM A85 AMPLIFIER,** £550. Under six months old, highly reviewed, mint condition, boxed. Call 01323 486216 (Sussex).

**TDL RTL3 TRANSMISSION LINE,** floorstanding speakers, £100 ono. Excellent condition. Call 02392 780485 (Posrsmouth).

**ATACAMA 12" SPEAKER STANDS,** with Soundbytes filler, £40. Target speaker stands, 17" sand-filled, £25.

Excellent condition. All 02392 780485 (Posrsmouth).

**FARADAY SIREN LOUDSPEAKERS.** Low density concrete cabinets, fantastic sound, reluctant sale. See faradaysound website for specifications, £295. Call 01603 766668 (Norwich).

**NAIM NAIT 3,** £350, mint, 30hrs use, boxed. Sugden CD21, £550, 8 months old, boxed. Call 01482 508389.

**AUDIO SYNTHESIS SILVERBLUE SQ** interconnect 1/2m x2, £75 each (£145), 0.75m £90 (£175). All three, £200. Call Terry 020 8482 0363 (Enfield).

**TANNOY 609II SPEAKERS** Choice Best Buy standmounts with coaxial drive units and hexagonal cabinets, bargain £125. Call 01273 478172.

## BUYING TIPS

Buying second-hand 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 breakbwn than amplifiers, and amps should be more reliable than CD players. But any abused component could be trouble-some – have a proper dem, and judge the seller as well as the goods!

# THE DIRECTORY

THE *HI-FI CHOICE* DIRECTORY ROUNDS UP OVER 1,000 PRODUCTS REVIEWED IN PAST ISSUES. HERE YOU'LL FIND OUR OPINIONS ON THE BEST HI-FI COMPONENTS, ALONG WITH GUIDANCE ON HOW TO ASSEMBLE THEM INTO FIRST-CLASS HI-FI SYSTEMS.

## THE ART OF SYSTEM BUILDING

HOW DO YOU GO ABOUT BRINGING TOGETHER AN IMPRESSIVE HI-FI SYSTEM? IT GOES A LITTLE LIKE THIS...

**W**hen it comes to putting together a great separates system, identifying decent individual components is fundamental, but it isn't the whole story. There is the business of system synergy to consider, which put simply means how well your components

gel as a whole. The degree to which this can affect the end result tends to increase with price, thus budget components are relatively immune (a competitively priced Best Buy disc player, amp and loudspeaker pairing of almost any hue will combine to make a good system). When considering a purchase it's always good practice to listen to alternatives. It's the only way you can learn what different components sound like and find out which ones appeal to you.

So once you have shortlisted some components, the next step is to track down a knowledgeable dealer to take you through the options available. As well as getting the basic hardware right there is the question of which cables to use; should you stick with what comes in the box or pay extra for interconnects and speakers leads? We firmly believe that cables make a worthwhile difference, but if you are sceptical, any dealer should be able to demonstrate this for you.

And don't skimp on supports. The temptation is to use any old shelf or sideboard for system and speakers, but it's worth the outlay for speaker stands and proper system support.

## MAKING CONNECTIONS

WIRING UP A SYSTEM IS REALLY QUITE STRAIGHT-FORWARD IF YOU FOLLOW A FEW BASIC GUIDELINES.

■ When bi-wiring (see glossary) with speaker cable you will sometimes need to connect two plugs to one socket on the amp. If the amp has a binding post connection you can usually put one plug through the hole that goes across the post and one in the end. If this is not possible you may need to use spade connectors or have both pairs of cables soldered into single plugs at the amp end.

■ If a cable has an indication of directionality, ie if there are arrows on the casing, use these with regard to the way the signal travels. If there are no arrows you can try it both ways and see if you hear a difference or just route the signal in the direction of the writing on the cable jacket.

■ In multichannel AV systems you may have the option of routing video signals via the amp, or bypassing it. The former option gives easiest functionality if you use several sources, but by bypassing you are removing a switch and connection which should improve quality.

■ Try to avoid laying mains cables across or beside signal cables as the field they produce can have a negative effect.

■ Try to keep all cable runs as short as possible (unless you use Naim, in which case refer to manufacturer's recommendations).

## AWARD TAGS

Whenever *HFC* reviews a group of like components we have the opportunity to give the best products a Best Buy or Recommended award. Best Buys are considered to offer an excellent standard of performance at an attractive price. Recommended products are first-class components losing out to Best Buy status only because of a higher price or less competitive overall sound quality.

A third award, the Editor's Choice, is reserved for those products reviewed solo, such as you see in the First Impressions or High Performance sections. An EC is awarded where the Editor is convinced that a product offers exceptional quality for the price.



# GLOSSARY

**5.1-CHANNEL AUDIO:** Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer.

**BALANCE:** Most loudspeakers have a characteristic frequency balance resulting from emphasising 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 amp and each driver.

**CD-R:** Recordable CD that cannot be erased, though discs that have not been completely filled can have tracks added until the disc is finalised.

**CD-RW:** Re-writable or re-recordable CD, incompatible with older CD players.

**CLASS A:** Operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to give lower distortion.

**CLASS AB:** Most practical amps operate in Class A for the first fraction of a watt and Class B thereafter.

**CLIPPING:** An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever-increasing power levels. Distortion increases dramatically at this point.

**CLOCK:** Any electronic oscillator that is used to generate a timing reference signal.

**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.

**DAC OR DIGITAL-TO-ANALOGUE CONVERTER:** The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform.

**DOLBY DIGITAL DD (AC3):** A compressed (10:1) digital audio format that typically contains five or more entirely discrete channels, eg 7.1 EX where discrete side channels are used.

**DOLBY PRO-LOGIC, DPL:** Forerunner to DD that 'steers' information to the front L/R, centre and mono surround channels via an analogue matrix.

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

**DSP OR DIGITAL SIGNAL PROCESSOR:** Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

**DTS OR DIGITAL THEATRE SOUND:** Competitor to Dolby Digital with a reduced 4:1 compression ratio that, ostensibly, promises higher quality.

**DVD-A:** High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range, discs are compatible with standard DVD players.

**ELECTRICAL DIGITAL:** Any digital connection that uses an electrical cable rather than optical. Includes the balanced ('AES/EBU') interface.

**FILTERS:** Filters are intrinsic to digital audio, both analogue and digital. These are often very sophisticated in design, and in total they probably have rather more to do with the 'personality' of CD player sound than most other factors.

**FINALISE (CD-R):** The process of copying the Table of Contents from its temporary area on CD-R and CD-RW to

the final position where it will be recognised by ordinary CD players.

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

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

**JITTER:** An insidious distortion specific to digital audio caused by the clock, used to regulate the conversion of data into analogue audio, being imprecise.

**LINE LEVEL:** Practically every modern source component (except phono cartridges) gives an output in the region of 1-2V, referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are designed for this input level and thus interchangeable.

**LOSSLESS COMPRESSION:** A method of reducing the number of data bits (density) without corrupting the original description of the musical signal.

**LOSSY COMPRESSION:** Reduction in data density by recourse to a psycho-acoustical model that predicts what is, and what is not, 'audible' within a sequence of music.

**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 3kHz.

**NETWORK:** see Crossover.

**OUTPUT IMPEDANCE:** A measure of resistance to alternating current, a source with low output impedance (say, below 100 ohms or so) helps ensure compatibility with most amplifiers, even when using long or unusual interconnect cables. A high impedance, especially in conjunction with an amplifier with a low input impedance (some are as low as eight kOhms, although the standard is 47 kOhms) can result in audible treble losses.

**PLL OR PHASE-LOCKED LOOP:** A technique by which a clock of defined characteristics is used to generate a new clock at a different frequency from the original, helping to stabilise the signal.

**PRESENCE:** Critical section of the audio band at the point where midrange and treble meet.

**QUANTISATION NOISE:** A form of distortion or noise resulting from errors in the description of the musical signal by the digital code.

**SACD:** High-resolution music-only format developed by Sony/Philips – offers 100kHz bandwidth without digital filtering and its associated ills.

**SAMPLE RATE:** The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

**SENSITIVITY:** The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/W).

**THX:** Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra is more stringent than THX Select.

**TOSLINK:** The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

**TRANSISTOR/MOSFET:** the two main types of power semiconductor used in solid state amplifier output stages.

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

**TWEETER:** Treble driver.

**TWO/THREE-WAY:** Loudspeaker crossovers split the signal into two or three frequency bands, a 2-way speaker can have more than two drive units.

**WATTS (PER CHANNEL):** the watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output.

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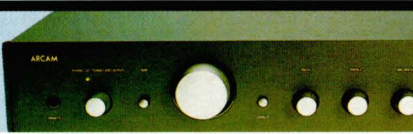


TBA integrate 1,750 Caravan system matching is essential, but this is definitely one of the good guys

## STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS

STATUS	PRODUCT	£	COMMENTS	5	4	3	2	1	50	187		
	Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent						●	●	50	187
	Alchemist Kraken APD7A/8A II	1,098	Unusual looks and unusual sound too, rather rough and lacking detail								55	187
R	Arcam Alpha 9C/10P	1,000	Well specified and flexible preamp with sound only just lacking in greatness						●	●	100	187
BB	Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction								60	165
EC	ATC CA2	750	Stripped down version of ATC's range topper delivers considerable transparency and bandwidth, excellent value						●		221	221
	Audio Note M Zero/P Zero	998	Neat shoe box-size components. Able to impart music with real life and soul when partnered with P Zero power amps								8	191
R	AudioNote M2Phono/P2SE	3,198	Wonderfully natural and inviting sound with great warmth and drama, but limited loudness capability						●		18	216
EC	Audio Research LS25 NT100	12,199	This is not so much a fine value amp, as a fine amplifier, full stop (LS25 MkII/VT100 MkII)						●		100	216
EC	AVI S2000M	2,348	This preamp/monoblock pairing does most things very well and images better than most							●	150	221
EC	Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot								8.5	186
	Bow Technologies Warlock/Walrus	6,490	Heavyweight dual mono pairing with superb build and rich, refined sound							●	150	216
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application							●	120	212
	Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency								5	196
	Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear								410	202
BB	Creek P43R/A52SE	949	Excellent sound, remote control operation and upgrade options from fine value preamp.							●	100	187
BB	Creek P43R/A43	1,050	Great value and a podium performance earning a best buy							●	140	212
	Crimson 620C	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised								50	181
R	Crimson CS610/CS630	1,250	Good, clear sound, including a decent phono stage, but flexibility is limited. Slimline monoblocks with grunt and finesse						●	●	100	187
BB	Croft Vitali/Series 5C	2,000	Oddball retro style and ergonomics, but truly magical voice coherence and projection, great transparency						●		30	216
	Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft								50	183

# AMPLIFIERS



## SPECIFICATIONS

### STEREO AMPLIFIERS – INTEGRATED

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Affordable Valve Co. EL34	650	A real bargain on the face of it, but the sound is oh so soft, warm and old-valve. Too much of a good thing	4					40	202
	Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●		●	●	45	196
	Arcam Alpha 8R	350	Workmanlike amplifier is well thought through, but is now beginning to show its age.	5	●		●	●	50	208
	Arcam Diva A65	380	Easy on the ear remote control amp, but not especially powerful.	5			●	●	40	217
BB	Arcam Diva A75	450	Quick, lively and well presented amplifier, but lacks evenness and authority	5	●		●	●	50	224
BB	Arcam Diva A85	750	Much enhanced design topology give a more hard hitting, engaging sound than previous Arcams	7			●	●	85	214
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	181
BB	Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7			●	●	100	201
EC	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
BB	Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	●	●			40	175
	Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	●	●			40	181
R	AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5			●		100	175
	Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5			●	●	60	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	196
R	Canary Audio CA-608	1,495	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4					24	202
	Chord CPM 3300	5,495	Very powerful yet compact amp with rather complex ergonomics and transparent sound. Oh, and a lovely blue glow	5			●		220	214
R	Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	●		●		60	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	181
	Symbol CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6					40	178
R	Creek 4330	279	Diminutive but classy amp will drive anything, and can be specified in various configurations	4	●				40	192
	Creek 4330SE	499	Somewhat perplexing, though always interesting, miniature audiophile amplifier, needs careful system matching	5			●		50	208
	Creek 5350SE	799	Smooth, open and articulate sound and quality build, but bass is a tad heavy handed	6			●	●	85	214
R	Cyrus 5	500	A enjoyable amp that is assured and unflappable, although detail is unremarkable	7			●	●	45	205
R	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6			●	●	60	196
BB	Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high fidelity operation	5					30	208
	Denon PMA-355UK	230	Detailed, but rather inexpressive sound which doesn't quite live up to the claims.	5	●		●	●	50	217
R	Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●	●	●	70	181
R	Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch above its weight, but check it will complement your system	5					60	175
	Exposure 2010	599	Neatly turned out amplifier, with mainstream appeal but bland with it	6			●		50	214
	Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6			●		75	201
	Ezo Aria HE	449	Quick, detailed but aggressive and sometimes coarse sounding amp. Beautifully turned out, though	5				●	40	208
	Graaf Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6					25	202
	Hofli Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	●				65	181
	Marantz MA6000	1,000	Plenty of detail, but not much on bass and treble, and a bit of a soft sound overall	5	●		●	●	70	186

## THE DIRECTORY STEREO AMPLIFIERS / PHONO STAGES / MULTICHANNEL AMPLIFIERS

### STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	TAG McLaren PA20R/125M	1,500	Sound but limited thrill power	6			●	●	145	184
	Talk Hurricane 2L/Tornado 2	1,249	Design of integrity which gets to the heart, if not the soul, of the music	6					65	165
	Technics SU-C3000	2,997	Price includes SE-A3000. Supremely clean and even sounding combo, though it could be more musically involving	5	●					188
	Technics SU-C1010	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	●		●			200
	Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1					100	187
	Thule Spirit PR150B/PA150B	1,600	The limitations in the sonic performance mean that the competition has more to offer	6					150	212
	Unison Research S8	2,950	Outrageous Italian styling and an equally melodramatic sound, with splendid voice projection and tension	5			VOL		24	216

### PHONO STAGES

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Clearaudio Symphono	740	Slightly inconsistent balance mars the performance of this lively performer				●			201
R	Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character				●			189
	Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough		●					189
	Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality							189
R	Electrocompaniet ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise		●	●				189
BB	Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage		●					189
	NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too		●					189
R	Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist		●	●				201
R	Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer		●					201
R	Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price		●					201
R	QED Discaver DS-1	35	It's cheap, it's cheerful, it's OK – perfectly adequate for use with a phono-less integrated, though not very refined		●					189
	Roksan Artaxerxes X/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components		●	●				189
R	Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP				●			201

# AMPLIFIERS



## SPECIFICATIONS

### MULTICHANNEL AMPLIFIERS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
R	Arcam AVR100	800	A solid sounding and well-engineered AV amp with an affordable price tag. Good with music and well suited to smaller rooms	6			●	●	70	215
R	Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5			●	●	110	198
BB	Arcam FMJ A22 DAVE/P25	2,850	Powerful, authoritative, great stereo, excellent home cinema - what more can you want?	7			●	●	100	210
EC	Bryston SP1/9B THX	7,100	Stripped back 5.1 channel processor/amp combo reaches genuine audiophile heights. Currently lacks 5.1 input for DVD-A/SACD	6			●		120	219
	Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4			●		N/A	201
	Cyrus AV5/SmartPower	2,650	Refined, detailed and attractive, but ultimately lacking in balls.	3			●		60	210
	Denon AVR-1602	350	Low-cost home cinema amplifiers don't usually set out to excite, and this one is no exception. Listenable, but dull	6			●	●	80	223
R	Denon AVR-3300	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			●	●	75	198
BB	Denon AVC-A1SE	2,500	A powerful, articulate 7.1-channel integrated amp, loaded with features and equally at home with music and film soundtracks	12	●		●	●	170	215
BB	Harman/Kardon AVR5000	600	Complex and capable home cinema receiver features automatic setup, HDCD and excellent interconnection possibilities	8			●	●	70	223
	JVC-RX-8012R	400	Undistinguished home cinema receiver with USB in, and modestly satisfying sound at lowish power levels	9	●		●	●	100	223

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**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 amp and each driver.

**CD-R:** Recordable CD that cannot be erased, though discs that have not been completely filled can have tracks added until the disc is finalised.

**CD-RW:** Re-writable or re-recordable CD, incompatible with older CD players.

**CLASS A:** Operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to give lower distortion.

**CLASS AB:** Most practical amps operate in Class A for the first fraction of a watt and Class B thereafter.

**CLIPPING:** An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever-increasing power levels. Distortion increases dramatically at this point.

**CLOCK:** Any electronic oscillator that is used to generate a timing reference signal.

**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.

**DAC OR DIGITAL-TO-ANALOGUE CONVERTER:** The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform.

**DOLBY DIGITAL DD (AC3):** A compressed (10:1) digital audio format that typically contains five or more entirely discrete channels, eg 7.1 EX where discrete side channels are used.

**DOLBY PRO-LOGIC, DPL:** Forerunner to DD that 'steers' information to the front L/R, centre and mono surround channels via an analogue matrix.

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

**DSP OR DIGITAL SIGNAL PROCESSOR:** Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

**DTS OR DIGITAL THEATRE SOUND:** Competitor to Dolby Digital with a reduced 4:1 compression ratio that, ostensibly, promises higher quality.

**DVD-A:** High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range, discs are compatible with standard DVD players.

**ELECTRICAL DIGITAL:** Any digital connection that uses an electrical cable rather than optical. Includes the balanced (AES/EBU) interface.

**FILTERS:** Filters are intrinsic to digital audio, both analogue and digital. These are often very sophisticated in design, and in total they probably have rather more to do with the 'personality' of CD player sound than most other factors.

**FINALISE (CD-R):** The process of copying the Table of Contents from its temporary area on CD-R and CD-RW to the final position where it will be recognised by ordinary CD players.

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

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

**JITTER:** An insidious distortion specific to digital audio caused by the clock, used to regulate the conversion of data into analogue audio, being imprecise.

**LINE LEVEL:** Practically every modern source component (except phono cartridges) gives an output in the region of 1-2V, referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are designed for this input level and thus interchangeable.

**LOSSLESS COMPRESSION:** A method of reducing the number of data bits (density) without corrupting the original description of the musical signal.

**LOSSY COMPRESSION:** Reduction in data density by recourse to a psycho-acoustical model that predicts what is, and what is not, 'audible' within a sequence of music.

**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 3kHz.

**NETWORK:** see Crossover.

**OUTPUT IMPEDANCE:** A measure of resistance to alternating current, a source with low output impedance (say, below 100 ohms or so) helps ensure compatibility with most amplifiers, even when using long or unusual interconnect cables. A high impedance, especially in conjunction with an amplifier with a low input impedance (some are as low as eight kOhms, although the standard is 47 kOhms) can result in audible treble losses.

**PLL OR PHASE-LOCKED LOOP:** A technique by which a clock of defined characteristics is used to generate a new clock at a different frequency from the original, helping to stabilise the signal.

**PRESENCE:** Critical section of the audio band at the point where midrange and treble meet.

**QUANTISATION NOISE:** A form of distortion or noise resulting from errors in the description of the musical signal by the digital code.

**SACD:** High-resolution music-only format developed by Sony/Philips – offers 100kHz bandwidth without digital filtering and its associated ills.

**SAMPLE RATE:** The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

**SENSITIVITY:** The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/W).

**THX:** Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra is more stringent than THX Select.

**TOSLINK:** The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

**TRANSISTOR/MOSFET:** the two main types of power semiconductor used in solid state amplifier output stages.

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

**TWEETER:** Treble driver.

**TWO/THREE-WAY:** Loudspeaker crossovers split the signal into two or three frequency bands, a 2-way speaker can have more than two drive units.

**WATTS (PER CHANNEL):** the watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output.

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# AMPLIFIERS



## SPECIFICATIONS

### STEREO AMPLIFIERS – INTEGRATED

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Affordable Valve Co. EL34	650	A real bargain on the face of it, but the sound is oh so soft, warm and old-valve. Too much of a good thing	4					40	202
	Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●		●	●	45	196
	Arcam Alpha 8R	350	Workmanlike amplifier is well thought through, but is now beginning to show its age.	5	●		●	●	50	208
	Arcam Diva A65	380	Easy on the ear remote control amp, but not especially powerful.	5			●	●	40	217
BB	Arcam Diva A75	450	Quick, lively and well presented amplifier, but lacks evenness and authority	5	●		●	●	50	224
BB	Arcam Diva A85	750	Much enhanced design topology give a more hard hitting, engaging sound than previous Arcams	7			●	●	85	214
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	181
BB	Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7			●	●	100	201
EC	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
BB	Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	●	●			40	175
	Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	●	●			40	181
R	AVI S200MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5			●		100	175
	Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5			●	●	60	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	196
R	Canary Audio CA-608	1,495	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4			●		24	202
	Chord CPM 3300	5,495	Very powerful yet compact amp with rather complex ergonomics and transparent sound. Oh, and a lovely blue glow	5			●		220	214
R	Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	●		●	●	60	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	181
	Cymbal CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6					40	178
R	Creek 4330	279	Diminutive but classy amp will drive anything, and can be specified in various configurations	4	●				40	192
	Creek 4330SE	499	Somewhat perplexing, though always interesting, miniature audiophile amplifier, needs careful system matching	5			●		50	208
	Creek 5350SE	799	Smooth, open and articulate sound and quality build, but bass is a tad heavy handed	6			●	●	85	214
R	Cyrus 5	500	A enjoyable amp that is assured and unflappable, although detail is unremarkable	7			●	●	45	205
R	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6			●	●	60	196
BB	Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high fidelity operation	5				●	30	208
	Denon PMA-355UK	230	Detailed, but rather inexpressive sound which doesn't quite live up to the claims.	5			●	●	50	217
R	Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●	●	●	70	181
R	Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch above its weight, but check it will complement your system	5					60	175
	Exposure 2010	599	Neatly turned out amplifier, with mainstream appeal but bland with it	6			●		50	214
	Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6			●		75	201
	Ezo Aria HE	449	Quick, detailed but aggressive and sometimes coarse sounding amp. Beautifully turned out, though	5				●	40	208
	Graaf Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6					25	202
	Hofii Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	●				65	181
	Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	●		●	●	70	186
R	Kenwood KAF-3030R	250	Kenwood's best amplifier for some years has a lean bass but excellent mid and treble.	5	●		●	●	50	217
	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
	Linn Majik	845	Slightly rough and ready power amp modules, but capable preamp that can be expanded into a multiroom system	5	●		●	●	33	214
	Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5					23	196
	Marantz PM-6010 OSE	229	Good starter amplifier, with characteristic smooth, low key delivery	5	●		●	●	50	196
	Marantz PM7000	300	Lots of power for the price, but detail and subtlety seem to have been sacrificed	6	●		●	●	115	205
	Marantz PM6010 OSE KI Sig	400	Well-made, but somewhat ill-balanced amplifier that doesn't slot into most systems comfortably	6	●		●	●	50	208
R	Marantz PM8200	599	Warm, solid and likeable sound, with the occasional flash of steel when under pressure	5	●		●	●	60	224
	Marantz PM-17 Mk II	999	Big, bold, but over-fruity balance – the 'fat uncontroller' as one put it	6	●	●	●	●	60	214
	Marantz PM-17 KI-Signature	1,300	Full feature audiophile amp where the end results don't quite justify the fantastic ingredients	6	●	●	●	●	60	189
	Mark Levinson No383	5,500	Extremely versatile design that thinks and acts like a serious pre/power. Sounds superb	5			●		100	212
	Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility	5					55	178
R	Musical Fidelity X-A2	500	A chip off the old block; sounds very similar to the X-A1 and XA-100R	6					75	208
	Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some	5	●	●	●		85	196
	MVLA A2	970	Curiously designed, and curious sounding amplifier with Sound Sentinel circuits to address perceived weaknesses	9				●	100	201
	Myryad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse	6	●		●	●	50	192
R	Myryad MI120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle	6			●	●	60	175
	Myryad MI 240	1,500	Big and powerful integrated amp sounds clean and neutral if a bit short on musical tautness and dynamic tension	8	OPT	OPT	●	●	120	216
BB	NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build	6			●	●	40	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	192
BB	NAD C350	300	A typical NAD: refined, warm tonality, adequate detail, and a strong power yield	7			●	●	60	208
BB	NAD C370	450	Flexible, ultra-high power integrated amplifier delivers a real punch, but is not without finesse.	6	●		●	●	120	217
	NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong	5			●		100	189
R	Naim Nait 5	800	As always with the Nait, less is more, and the Nait 5's 30 watts seem to go a lot further with some sources	5			●		30	214
	Opera Aida	795	Low power (in practice) minimalist integrated amp, but the mahogany wings don't help it to fly	5	●	●			60	201
	Pathos Classic One	995	Unusual looks and even more unusual electronic design, but compromised musical potential	5			●		55	202
R	Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build	5	●		●	●	45	186
R	Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	●		●	●	60	192
	Plinius B100	1,450	Slightly rough and ready, but plenty of balls from this stripped down antipodean.	6			●		100	214
R	Præcisa Acustica Sonoro	1,800	It is not often that transistor amplifiers are made to sound so palpably valve-like	5			●		100	189
R	Primare A10	500	Beautifully made, smooth and easy sounding, and though not overtly detailed or dynamic, is well organised musically	6			●	●	50	208
R	Primare A20 MkII	799	Everything except packaging has changed in Mk II version: but balsier model has lost none of its refinement	5			●		70	181
BB	Primare A30.1	1,500	Smooth, detailed singing quality, elegant appearance, and healthy power yield	6			●		100	214
	Red Rose Music M5	8,000	Sophisticated integrated valve amp with powerful, refined sound and beautiful build	4			●		45	219
	Restek Fantasy II	1,499	Muscular, but ultimately rather strident amplifier which needs careful system matching	6			●		100	189
R	Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness	6	●		●	●	120	205
R	Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6			●		70	201
BB	Rotel RA-931 MkII	189	Simple, non-remote amp majors on clarity and transparency, without sounding over-analytical	4	●		●	●	35	208
BB	Rotel RA-971 MkII	275	Improved RA971 is a chip off the old block: bags of power, but with added precision and clarity	6			●	●	60	196
	Rotel RA-972	400	Better in the treble than the bass, which is a little too rounded and woolly	6			●	●	90	205
	Rotel RA-1070	1,000	Well equipped powerhouse has features designed to support multiroom operation, but sonically it lacks subtlety	7	●		●	●	100	224



## STEREO AMPLIFIERS – INTEGRATED (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Sharp SM-SX1	3,300	Jewel like 1-bit digital amplifier with limited power reserves but offering glimpses of sonic magic	n/a					50	211
	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	5					110	200
R	Sony TA-FB740R	200	Very open and clear sound, comfortable with a wide range of musical styles	5	●		●	●	60	205
	Sony TA-FB940R	300	Technically innovative amplifier fails to cut the mustard with complex material	5	●	●	●	●	70	208
BB	Sugden A21a	899	This single-ended, Class A transistor amp has exquisite resolving ability and presence – an authentic classic	5	●	●			25	224
	T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality	7			●	●	100	189
	Tact Millennium MkII	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	500	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement	6				●	60	189
	TAG McLaren 60iRv	1,000	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive	6			●	●	60	184
	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	175
	Talk Electronics Cyclone 2.1	850	Not as clear or as lively as some, but essentially musical, and upgradeable for multichannel audio purposes	6			●	●	100	224
	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
	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-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat	6	●		●	●	55	196
	Thule iA60B	700	Dry, edgy and glassy sounding amplifier, though the balanced input may appeal to some.	6			●		60	214
R	Tube Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic	5					50	186
	Tube Technology Unisis Sig	2,400	A very attractive product which combines many classic valve attributes to good effect	5	●				30	202
	Unison Research Aria SR1	1,250	Drop dead gorgeous looks from this valve/MOS hybrid, but sonically it is lumpy and awkward, with poor definition, albeit with good image scale	5			●		80	224
	Yamaha AX-496	240	Lacklustre, if well equipped and powerful, amplifier shows some improvements over previous amps, but not enough	6			●	●	85	208
	Yamaha AX-596	300	Clean, agile and lean this amplifier isn't. Bold and powerful, however, it certainly is.	5	●		●	●	100	217
R	YBA Intégré	1,550	Careful system matching is essential, but this is definitely one of the good guys	6			●		50	214

## STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	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/8A II	1,098	Unusual looks and unusual sound too, rather rough and lacking detail	6					55	187
R	Arcam Alpha 9C/10P	1,000	Well specified and flexible preamp with sound only just lacking in greatness	6			●	●	100	187
BB	Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1					60	165
EC	ATC CA2	750	Stripped down version of ATC's range topper delivers considerable transparency and bandwidth, excellent value	5			●		221	
	Audio Note M Zero/P Zero	998	Neat shoe box-size components. Able to impart music with real life and soul when partnered with P Zero power amps	5					8	191
R	AudioNote M2Phono/P2SE	3,198	Wonderfully natural and inviting sound with great warmth and drama, but limited loudness capability	4	●				18	216
EC	Audio Research LS25/VT100	12,199	This is not so much a fine value amp, as a fine amplifier, full stop (LS25 MkII/VT100 MkII)	6	●	●			100	216
EC	AVI S2000M	2,348	This preamp/monoblock pairing does most things very well and images better than most	5			●		150	221
EC	Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1					8.5	186
	Bow Technologies Warlock/Walrus	6,490	Heavyweight dual mono pairing with superb build and rich, refined sound	5			●		150	216
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application	8			●	●	120	212
	Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1					5	196
	Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear	1					410	202
BB	Creek P43R/A52SE	949	Excellent sound, remote control operation and upgrade options from fine value preamp.	6			●	●	100	187
BB	Creek P43R A43	1,050	Great value and a podium performance earning a best buy	6			●		140	212
	Crimson 620C	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1					50	181
R	Crimson CS610/CS630	1,250	Good, clear sound, including a decent phono stage, but flexibility is limited. Slimline monoblocks with grunt and finesse	3	●	●			100	187
BB	Croft Vitali/Series 5C	2,000	Oddball retro style and ergonomics, but truly magical voice coherence and projection, great transparency	3	●				30	216
	Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1					50	183
R	Cyrus aCA7.5/Smart Power	1,250	Great for classical, jazz, and existing Cyrus owners, recommended	7				●	60	212
	Cyrus aCA7/aPA7	2,694	Low feedback power amp design that's a positive departure from the transistor norm, preamp is functional but not as impressive	5			●	●	150	190
	Cyrus aCA7.5/PSX-R/aPA7	2950	Very stylish 4-box modular system, slight forwardness delivers oodles of clarity and detail	7			●	●	150	216
	Densen Beat B-200	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	●	●				191
R	Densen B-300	800	Expensive but highly musical. Colourful and warm sound with strong timing and listener involvement	1					100	183
R	Densen Beat 200/300	1,985	Classy jet black cast boxes pack plenty of punch with good total musical coherence (remote L300 extra)	6	OPT		OPT		100	216
BB	Electrocompaniet EC4.7/120DMB	3,448	Bulky Norwegian combo has wonderful broad-band transparency, wide dynamic range and fine musical tension	6			●		120	216
EC	Gamut D200	2,995	Single MOSFET pair per side gives tremendous resolution and dynamics (balanced inputs). Formerly Sirius	1					200	183
EC	Levinson No380/No334	9,490	Preamp combines precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	6			●		125	195
	LFD Mistral Linestage/Power	898	Strong ergonomics, generally decent sound, but a little lacking in detail	6					60	165
	Linn Kolektor/LK85	990	Beautifully tuned out machine, yet slightly bland, aimed at an all Linn system	9	●	●			62	212
	Michell Orca/Alecto mono	3,600	Line-level design with a gorgeous remote and focused, spacious sound	6			●		100	187
R	Moth 30 Series Monoblocks	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1					100	155
	Moth 30 Active LS/60 Stereo	948	Excellent-sounding ultra-simple miniature power, power amp lacks finesse and control, however	4					60	165
	Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5			●			166
R	Musical Fidelity X-P100	800	Good long-term listening prospects, detailed and a little fruitiness (tested with X-A200 power amp)	6	●		●			200
	Musical Fidelity NuVista 300	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfill the demands of the most dynamic material	1					350	199
	Mryad MA120	450	Based on MI120 integrated – see latter for comments, but sounds significantly better when bi-amped with MI120	1					60	165
R	Mryad MP100/MA240	1,600	Smart finish and impeccable manners, smooth, clean performance	6			●	●	120	212
R	NAD 114	270	Beer-budget preamp which sounds focused, detailed and consistent	6	●	●		●		165
R	NAD Silverline S100/S200	2,000	Beautifully built kit that sounds as good as it looks with heaps of power	7			●		200	200
EC	Naim NAC112/NAP150	1,375	Clean, clever simplicity, plus a very well balanced sound that's much sweeter than earlier Naims	6			●		50	213
	Naim NAC112/NAP150/FLATCAP 2	1,850	Adding a FLATCAP 2 brings a very worthwhile sonic upgrade to the basic NAC112/NAP150 combo	6			●		50	213
	Naim NAC102/NAP180	2,122	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety	6			●		60	200
EC	Naim NAP500	10,000	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading edge definition	1					140	208
	Quad QC-twenty four/II-forty	4,000	A classic valve amplifier in circuitry and sound, but with modern ingredients and gorgeous retro styling	7					40	213
R	Rega Hal/Exon	2,194	Passive line stage dedicated to Exon monoblock power amps, bold outgoing, in-command sound	6	●	●	●		125	165
BB	Roksan Caspian Power	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1					70	183
	Rotel RC-971	150	Low price is offset by rather coarse sound quality with certain types of music. (Tested with RB-971 power amp)	5				●		178
BB	Rothwell Indus/Rubicon	1,488	Quirky valve combo with passive pre-amp has a lovely neutrality and consistency across a wide dynamic range	6					10	216
	Samuel Johnson pca100	1,800	Stylish wood and metal fascia - precise, clean sound with an emphasis on leading edges	6			●	●		201

STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	TAG McLaren PA20R/125M	1,500	Clear, neutral sound but limited thrill power	6			●	●	145	184
	Talk Hurricane 2L/Tornado 2	1,249	Design of integrity which gets to the heart, if not the soul, of the music	6					65	165
	Technics SU-C3000	2,997	Price includes SE-A3000. Supremely clean and even sounding combo, though it could be more musically involving	5	●					188
	Technics SU-C1010	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	●		●			200
	Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1					100	187
	Thule Spirit PR150B/PA150B	1,600	The limitations in the sonic performance mean that the competition has more to offer	6					150	212
	Unison Research S8	2,950	Outrageous Italian styling and an equally melodramatic sound, with splendid voice projection and tension	5			VOL		24	216

PHONO STAGES

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Clearaudio Symphono	740	Slightly inconsistent balance mars the performance of this lively performer				●			201
	Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character				●			189
	Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough		●		●			189
	Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality				●			189
	Electrocompanion ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise		●					189
	Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage		●					189
	NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too		●					189
	Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist		●		●			201
	Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer		●		●			201
	Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price		●		●			201
	QED Discsaver DS-1	35	It's cheap, it's cheerful, it's OK – perfectly adequate for use with a phono-less integrated, though not very refined		●					189
	Roksan Artaxerxes XD/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components		●		●			189
	Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP				●			201

AMPLIFIERS



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Arcam AVR100	800	A solid sounding and well-engineered AV amp with an affordable price tag. Good with music and well suited to smaller rooms	6			●	●	70	215
	Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5			●	●	110	198
	Arcam FMJ A22 DAVE/P25	2,850	Powerful, authoritative, great stereo, excellent home cinema - what more can you want?	7			●	●	100	210
	Bryston SP1/9B THX	7,100	Stripped back 5.1 channel processor/amp combo reaches genuine audiophile heights. Currently lacks 5.1 input for DVD-A/SACD	6			●		120	219
	Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4			●		N/A	201
	Cyrus AV5/SmartPower	2,650	Refined, detailed and attractive, but ultimately lacking in balls.	3			●		60	210
	Denon AVR-1602	350	Low-cost home cinema amplifiers don't usually set out to excite, and this one is no exception. Listenable, but dull	6			●	●	80	223
	Denon AVR-3300	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			●	●	75	198
	Denon AVC-A15E	2,500	A powerful, articulate 7.1-channel integrated amp, loaded with features and equally and home with music and film soundtracks	12	●		●	●	170	215
	Harman/Kardon AVR5000	600	Complex and capable home cinema receiver features automatic setup, HDCD and excellent interconnection possibilities	8			●	●	70	223
	JVC-RX-8012R	400	Undistinguished home cinema receiver with USB in, and modestly satisfying sound at lowish power levels	9			●	●	100	223
	Kenwood KRF-X9050D	399	There are some benefits from THX Select processing in home cinema mode, but musically this is a rather mechanical, unengaging performer	7	●		●	●	100	223
	Kenwood KRF-V7773D	800	Bold, detailed presentation, but there are some technical limitations and a slightly mannered quality, especially with music.	10	●		●	●	120	210
	Kenwood KRF-V9993D	1,300	Complex amp that rocks with home cinema but loses out with music	7	●		●	●	110	215
	Marantz SR5200	400	Marantz provides undemanding but broadly satisfying listening from a well engineered, near budget home cinema receiver	8			●	●	90	223
	Marantz SR-5000	500	Something of a rough diamond, but a powerful and entertaining package	5			●	●	105	198
	Marantz SR-7000	700	Excellent at the price, and almost equally effective with 2-channel music and multichannel AV.	9			●	●	100	210
	Marantz SR-14EX Mk2	3,250	A weighty beast, with 7.1 processing but only five channels of amplification as standard. Highly capable with both music and movies, but rather costly all-in-all	8			●	●	140	215
	Myriad MDP500/MA240/MA360	3,799	Superb three-box, five-channel A/V amplifier. Great with movies and beats most multichannel amps hands down with music	9			●	●	120	215
	NAD T761	650	First rate home cinema amplifier that sounds more powerful than its specifications imply, and competes with specialist stereo amplifiers	9			●	●	80	223
	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
	Onkyo TX-D5595	450	Unexciting but generally competent home cinema amplifier has some strong ergonomic features	7	●		●	●	70	223
	Onkyo TX-D5787	900	Obstructive ergonomics and messy sound undermine basically well-equipped receiver.	7			●	●	100	217
	Onkyo TX-D5989	2,500	Authority personified, excellent AV signal processing, but sound quality a tad unsubtle.	9	●		●	●	160	210
	Pioneer VSA-D810S	450	Thin, raw sounding AV receiver fails to stir the right nerve endings, but is materially fair value	7			●	●	100	223
	Pioneer VSA-E08	1,300	THX circuitry gives home cinema material a boost, but this is not an obvious first choice for music.	10	●		●	●	100	210
	Primare P30/A30.5	3,700	No 5.1 channel input for DVD-A/SACD but capable of almost uncomfortable realism with real solidity and drive	8			●	●	120	210
	Roksan DSP/5 ch amp/VSU	2,440	Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels.	4			●	●	80	210
	Rotel RSX-972	1,000	Not the brightest tool in the Rotel toolbox, and pricing is surely rather optimistic too.	8			●	●	75	217
	Rotel RSP-976/RMB-1075	1,700	A potent and enjoyable two-box beast that gets to the heart of both music and movie sound	8			●	●	120	215
	Rotel RSP-985/RPB-985 MkII	2,400	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3			●	●	130	198
	Sony STR-B1070	600	Technical intriguing AV receiver which succeeds in extracting detail and space from recordings that sounded coarse and unexpansive elsewhere	10	●		●	●	100	223
	Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5			●	●	110	198
	Sony VA777ES	1,500	Smart circuitry gives this model unusual precision and transparency, and it is a fine all rounder 9	9			●	●	100	210
	TAG McLaren AV32R EX	2,749	A flexible AV processor, unusually good with music. Would form the heart of a top-class multichannel system in standard or 7-channel 'EX' form	6			●	●		215
	Technics DX-950	279	Ultra-low cost home cinema receiver is impressively equipped for the price, but musically it lacks grace and air	5	●		●	●	100	223
	Technics SA-DA10	500	Lower mid-market AV amp has all the right ingredients, but fails to stir the soul	5	●		●	●	80	210
	Technics SE-A1010/SU-C1010 x3	1,350	A preamp plus three stereo amps provide a six-channel AV solution without complex processing. Visually stunning but low on grunt and detail	6			●	●	70	215
	Yamaha RX-V1000RDS	800	Solid mainstream performer is more convincing as home cinema amplifier than for multichannel music.	8	●		●	●	100	217
	Yamaha DSP-AX1	2,000	An anorak's delight, and one of the most flexible and effective soundfield creators ever conceived	11	●		●	●	110	210

# CABLES

## SPECIFICATIONS

### ANALOGUE INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG. CABLE TYPE	ISSUE NUMBER
	Acoustic Precision Eikos	89	Not entirely neutral: probably best suited to upbeat music. Very stiff construction		•	•	•	•	•		188
R	Acoustic Research Master Series	70	Decent performance all round and good interference rejection	•		•	•	•			224
	Audioquest Sidewinder	40	Suppresses the sound. At this price it's a disappointment	•	•		•	•			211
R	Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail			•	•	•			200
R	Cable Talk Advanced 3	35	Good sound and great detail, but a slight brashness in the treble	•		•	•	•			211
	Cable Talk Professional 3	75	Plenty of bass, but suffers rather from congestion	•		•	•	•			224
	Cambridge Pacific	30	Lacks subtlety and bass impact but is otherwise quite serviceable for the price		•	•	•	•			176
	Cambridge Silver Spirit 60	100	Good bass but a lack of detail and differentiation of instruments	•		•	•	•			188
R	Chord Calypso	30	Informative, clear sound at a decent price	•		•	•	•			211
	Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces	•		•	•	•			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
	Chord Silver Siren	75	Dry and undynamic, though tonal balance is good	•		•	•	•			224
R	DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried	•			•	•			200
BB	Ecosse The Composer	51	A high degree of realism and delicacy, and a fantastic price		•	•	•	•			211
R	Ecosse Reference Diva	100	Very good performance in all areas, with particularly fine, tuneful, bass			•	•	•			224
	Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)	•			•	•			176
	Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness	•		•	•	•			176
R	Insert Audio Image 5.1	85	Very good detail and imaging: perhaps a touch bass-light		•	•	•	•			200
BB	Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness	•		•	•	•			211
	Ixos Gamma 1001	70	Nice and dynamic, and bass is good, but treble disappoints and it can become rough	•		•	•	•			224
	Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though	•		•	•	•			176
	Ixos 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price	•		•	•	•			200
	Kimber Crystal-Cu	5	Disappointing beside other Kimber products: great bass, but suffers from dryness	•		•	•	•			224
BB	Kimber PBJ	68	Assured sound, solid and natural bass and clear treble — excellent performance all round	•		•	•	•			188
R	Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	•		•	•	•			176
BB	Monster Interlink 400 Mk2	70	Really lively and enjoyable sound	•		•	•	•			224
	Neotech NA11085	100	Balance is OK, but detail could and should be better		•	•	•	•			224
R	Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music	•			•	•			188
R	Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	•			•	•			176
	Precious Metals 5S35	50	Extended bass, but dry character suits electronic music better than acoustic		•	•	•	•			188
	Profigold PGA301 MkII	40	Mellow and well rounded, but can seem a little heavy	•		•	•	•			211
R	Profigold PGA4201	5	No pretensions, but sound is perfectly listenable with fair detail and extension		•	•	•	•			211
R	Prowire VHQ	10	This crisp cable lacks a little refinement, but it's great for the price		•	•	•	•			211
R	Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness			•	•	•	•		176
R	QED Qunex 1	20	Well balanced, and easily rivals more expensive cables	•	•	•	•	•			211
BB	QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value	•		•	•	•			176
R	QED Qnect 4S	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid	•		•	•	•			188
R	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
R	SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	•		•	•	•			176
R	SonicLink Message (Lilac)	60	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	•		•	•	•			188
	Sonic Link SG Voices	95	Bass reach is splendid, though there's some coloration: scores highly for emotional impact	•		•	•	•			224
	SonicLink Violet	95	Better bass than treble — a little dry in the upper octaves	•		•	•	•			200
R	Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss		•	•	•	•			176
R	Straight Wire Sonata	80	Topal balance favours lower frequencies but despite this it's a very listenable cable		•	•	•	•			188
	Straight Wire Encore II	100	Slightly variable bass performance is a weakness in this otherwise capable cable		•	•	•	•			200
BB	Supra EFF-ISL	80	Excellent sound in all areas — nothing to criticise	•		•	•	•			188
R	Tara Labs Prism 22	64	Mild tendency to plummy offsets some hardness in complex music with mixed results	•	•	•	•	•			188
	Tara Labs Prism 55-i	195	Good with laid-back music, but seems lazy with more exciting material		•	•	•	•			200
BB	TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	•		•	•	•			200
BB	van den Hul The Bay C5	39	Terrific detail, nice balance - a great cable		•	•	•	•			224
BB	van den Hul PB5	50	A highly neutral cable with fine dynamic and rhythmic performance too — excellent		•	•	•	•			188
R	van den Hul D102 MkIII HB	80	A fine cable, but the competition has crept up and it no longer leads the pack	•		•	•	•			200
R	Vivanco Prowire SHQ	30	Good performance all round with just a hint of bass congestion - very good value		•	•	•	•			224



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**DIGITAL INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)**

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
R	Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound		●		●	●		E	207
	Chord Optilink	40	Beautifully made, but performance is practically indistinguishable from other, cheaper, Toslink leads							O	207
	Ixos 1051-100	39.95	Plenty of bass, and detail seems good, but there's a loss of involvement		●		●	●		E	207
BB	QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced		●		●	●		E	207
R	Ross OP004	19.99	Sounds much like most other Toslink leads: slightly lacking detail, but good value							O	207
	SonicLink Digital Optical	30	Possibly slightly more detailed than other opticals, but still no match for a decent electrical digital link							O	207
	Straight Wire Info-Link	300	A good cable, but bass seems a little light and detail suffers a little at climaxes		●		●		●	E	207
R	van den Hul Optocoupler	49.95	Noticeably has the edge over other optical leads, but still second best to electrical types							O	207

**LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)**

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
	ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative	●		●			●		183
R	Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical			●		●			133
R	Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel, which was happy to accept its foibles	●			●		●		133
R	Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable	●			●	●			203
R	Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings			●		●			157
R	Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●		●		●			168
	Cable Talk Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained			●		●			157
	Cable Talk Flat 2	5	Rather unexciting sound, with variable bass and dry voices	●		●		●			203
	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
R	Chord Company Odyssey	17	Relatively vice-free cable with good detail throughout the range and generally neutral bass	●		●		●			192
	Chord Company Rumour 2	10	Performance is listenable enough but fails to excel in any area	●		●		●			203
BB	DNM LSC8500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire				●	●			133
	Ecocse Reference CS-2.15	12	Stereo and rhythm are good, but persistent dryness detracts significantly	●			●	●			215
R	Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere - one of the best cables available all round	●			●	●			203
	Gale XL189	1	Slightly bright and not too subtle, but a perfectly acceptable cable for any starter system	●		●		●			168
BB	Gale XL315	2	A little lacking in detail but plenty of life and excellent value			●		●			157
	Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative			●		●			157
R	Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●			●	●			168
BB	Ixos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price, strong and consistent			●		●			203
R	Ixos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant - though only slightly	●		●		●			192
BB	Kimber 4PR	4.90	Considering the price, this cable's very slight dryness is forgivable when everything else is so right		●		●				192
R	Kimber 4VS	8.50	A good mix of virtues including particularly fine bass	●		●		●			183
R	Kimber 4TC	18.80	A well-balanced cable with good performance in all areas	●		●		●			168
BB	Kimber 8TC	348	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	●		●		●			203
	Linn K20	4	Seems to work best with lively, unobtrusive music - can be dry and edgy	●		●		●			183
	Monster Cable Z1	12.50	Slightly bass-rich balance, and could do with a bit more detail	●		●		●			215
	Nordost Flatline Gold II	9.50	Exciting sound but a bit too 'in-yr-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
R	Ortofon SPK200	4.99	Good strong bass and fair detail, only slightly marred by a little dryness	●		●		●			183
R	Ortofon SPK300	8	Tremendously open and atmospheric, with robust, full-blooded bass - if slightly bright at times	●			●	●			133
	Precious Metals 5L102	10	Unusual construction gives rather strained sound, only really cheering up with simple musical textures	●			●	●			183
	Profigold Silverflex LC8258	4	A pretty-looking cable that does little to offend but is let down by some congestion	●		●		●			203
	Prowire Out of Sight	1.99	Special-purpose cable for laying under carpets etc. Fair sound across the board	●			●	●			203
	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	●		●		●			157



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## LOUDSPEAKER CABLES (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	CABLE TYPE							ISSUE NUMBER
				SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG	
	QED Qudos	2.25	Despite high-tech design and excellent Air-Loc plugs, its music-making failed to gel			●					157
BB	QED Qudos Silver	5	A few minor flaws but overall performance is very assured for this price	●		●		●			192
	QED Profile 4x4	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding								168
R	QED Profile Silver 12	15	Very slightly laid-back, but good tone and detail - wears its achievements lightly	●		●		●			215
	QED Genesis Silver Spiral	30	Commendable bass, with a little dryness and mildly compromised imaging: good, but not the best at its price	●		●		●			203
	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								157
R	SonicLink AST75	2.95	Unusual materials and rather unusual performance too, strong on excitement and with plenty of bass	●		●		●			203
R	SonicLink AST150	3.95	Slightly plummy bass and a useful way of holding musical strands together								157
	SonicLink AST200x2	5.95	At its best with exciting music, this cable seems shy of subtler details								192
BB	SonicLink Rebel	7.50	Plenty of bass, but without sacrificing upper frequency clarity or dynamics	●		●		●			215
	Straight Wire Duo	3	Not so subtle and lacking some detail, but sound is consistent with level and musical style	●		●		●			203
	Straight Wire Rhythm	6	Its major flaw seems to be woolly and indistinct bass, which pervades most types of music	●		●		●			192
BB	Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience	●		●		●			183
	Supra Classic 6.0	4.95	It's all there, but a persistent lack of detail seriously mars the view								215
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	Supra Ply 3.4/5	7.95	Good in all areas with rich bass and just a touch of treble roughness	●		●		●			203
R	Tara Labs Klara	2.95	A good budget cable with an even spread of virtues - and very minor vices - across the board	●		●		●			183
R	Tara Labs Prism Nexa	9.95	Slight tonal softness affects both bass and treble, but the overall sound is very listenable	●		●		●			215
	Tara Labs RSC Prime 500	36	More suited to melodious music than anything with bite and drive, with only moderate detail	●			●				203
	TCI Python	7.99	No single major sin, but detail is not outstanding and rhythm isn't always completely solid	●		●		●			203
R	Townshend Isolda	50	Superb sound all round, and amplifier compatibility enhanced by included stabilising inductor	●			●				203
R	van den Hul The Snowline	5.49	A hint of high-end civilisation with a few rough edges and a slightly warm balance	●		●		●			215
	van den Hul Royal Jade	10.99	Lots of technology, but sound suffers from dryness and woolly bass	●		●		●			203
	XLO Pro 600	16.50	Decent bass and good treble, but sounds confused with densely-scored music	●		●		●			215

## MAINS CABLES AND CONDITIONERS

STATUS	PRODUCT	£	COMMENTS	CONDITIONER							ISSUE NUMBER
				PLT	PLT	PLT	PLT	PLT	PLT	PLT	
R	Audiolinx Blue Max	100	Expensive, but good value considering the improvement offered					●	●	PLT	218
	Audio Note AN-MP	99	A noticeable improvement on standard mains cable, but not as great as others					●	●		218
	Audiosource bbc	48	Very good value, extremely sharp detailing - maybe too sharp					●	●	PLT	218
BB	Audusa Eupen CSA	48	Reasonable cost, outstanding performance and a strong recommendation					●		●	218
	Clearaudio Accurate Power Gen	1,090	Compact and beautifully finished unit that offers positive sonic benefits that justify the price								206
	GTA PHY-HP board	299	Oozing style and quality, the board generates an extremely natural and truthful sound								206
R	LAT AC-2	99	Excellent clarity, music sounds clean and easy to follow - enthusiastic recommendation			●					218
R	Lynwood Electronics Mega Power	295	Reasonable price model that improves focus while producing a sweet, tight and clean bass								206
	Maplin Bowthorpe ASC 431	50	Excellent mains purifying abilities - including other equipment used elsewhere in the house (Maplin code BJ84F)					●	●		218
	Olson Sound Fantastic	80	Reasonable price, superior build quality - all in all, a bit of a bargain					●	●		218
R	PS Audio Power Plant	1,200	Power Plant improves the cleanliness and separation of individual voices and instruments, giving an impressive 3-D quality								206
R	Russ Andrews Kimber Power Kord	50	Impressively detailed and crisp, choice of connectors can make even more difference						●	●	218
BB	Russ Andrews Kimber/Power Block	350	Improved version that elevates music to a cleaner and more three-dimensional experience with greater stereo imagery								206
	Russ Andrews The Purifier	250	More ambitious version of the Silencer that gives a cleaner, quieter background, allowing more low level detail								206
BB	Russ Andrews Silencer	40	A cost effect solution to noise-free mains supply that reduces 'hash' without losing brilliance and immediacy								206
	SonicLink SG Power	80	Bright, open and detailed with sweet and natural treble frequencies			●			●	PLT	218
	SonicLink S-Gold mains	225	Delivers a clean incisive sound with excellent detail, clarity and with no increase in noise								206
R	Synergistic Res. Master Coupler	238	Absolutely outstanding performance, but extremely expensive					●	●		218
R	Trichord Research Powerblock500	300	Isolation transformer that bolsters clarity, openness and gives an increased refinement making for a purer and natural sound								206

# CASSETTE DECKS

## CASSETTE DECKS

### SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS							ISSUE NUMBER
				DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN DECK	AUTO REVERSE	AUTO CALIBRATION	
BB	JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●		●			●	●	158
R	Kenwood KX-W6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass	●					●	●	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	●					●	●	171
	Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD	●			●			●	195
R	Onkyo K-611	460	Cute drawer-loading mini-size component with 3 heads and dual capstan transport	●			●			●	146
R	Pioneer CT-5550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●	●	●	●			●	164
	Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended	●					●	●	171
	Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound	●		●	●			●	184
BB	Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head	●		●	●			●	164
BB	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
R	Yamaha KX-580SE	250	Subtle, engaging and transparent deck, with a lightweight tonality, but stability and strong detail	●	●	●				●	171

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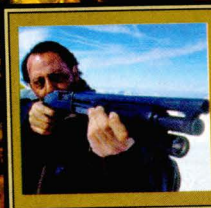
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# CD PLAYERS



## SPECIFICATIONS

### ONE-BOX CD PLAYERS

STATUS	PRODUCT	£	COMMENTS	ASACD COMPATIBILITY	MULTI-DISC	VARIABLE OUTPUT	HEADPHONE SOCKET	BAL. ANALOGUE OUT	ST OPT DIG OUT	OPT DIG OUT	ELEC DIG OUT	ISSUE NUMBER
	<b>Advantage CD15</b>	3,995	A CD player of some stature – what it lacks in dynamics it makes up for in subtlety and flow									193
	<b>Alchemist Kraken</b>	1,249	Distinctive looking player likely to suit an Alchemist system, but will result in variable results elsewhere									190
R	<b>Alchemist Nexus APD32A</b>	597	Refined treble, constrained yet capable bass and attractive all-round presentation									169
	<b>Anthem CD1</b>	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy									178
BB	<b>Arcam Alpha 7SE</b>	300	Sharper, clearer Alpha 7 SE, and more affordable than before									207
	<b>Arcam CD72</b>	400	Easy going, slightly soft-centred reworking of Alpha 7 in new, svelte DIVA clothing									212
R	<b>Arcam Alpha MCD</b>	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer									178
BB	<b>Arcam Alpha 8SE</b>	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder									176
R	<b>Arcam Alpha 9</b>	800	Refined, articulate player which employs new DAC technology to great effect									188
R	<b>Arcam CD92</b>	850	High resolution player needs a touch of spit and polish to be completely convincing									212
R	<b>Arcam FMJ CD23</b>	1,100	World class presentation allied with innovative technology to deliver an engaging standard of music making									206
	<b>Audio Analogue Paganini</b>	750	Basically good, but sometimes heavy-handed player									191
	<b>Audio Note AN-CD1</b>	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured									188
	<b>Audio Note AN-CD2</b>	999	High output impedance makes performance unduly system fussy									195
	<b>AVI S2000MC2</b>	899	A chip off the old block. This model's in-ner-face balance obstructs an otherwise finely detailed sound									176
R	<b>AVI S2000MC Reference</b>	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system									169
	<b>Balanced Audio Tech VK-D5</b>	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety									194
	<b>Cambridge Audio D100</b>	120	Hard, clanky and coloured sounding, and with suspect control logic									200
BB	<b>Cambridge Audio D500</b>	200	Clean and highly articulate player wears well in extended use									202
R	<b>Cambridge Audio D500 SE</b>	200	A really lively sounding player with good detail but just a hint of dryness									217
R	<b>Copland CDA 266</b>	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution									176
	<b>Copland CDA 289</b>	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000									194
R	<b>Cymbal CDP12</b>	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings									176
R	<b>Cyrus dAD1.5</b>	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality									191
R	<b>Cyrus CD7</b>	800	New Cyrus player has strong all-round attributes to match its good looks									212
R	<b>Cyrus dAD3 Q24</b>	900	Bold, lean and lively player demands sympathetic system matching									200
R	<b>Denon DCD-435</b>	130	Good low cost player, and a step up from the DCD-425, its predecessor									191
R	<b>Denon DCD-655</b>	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems									200
R	<b>Denon DCD-835</b>	230	Refined sound with terrific bass extension. Some slight coloration									217
	<b>Denon DCD-1550AR</b>	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player									179
	<b>Densen B-400</b>	1,280	Bold, purposeful sound, but lacks subtlety, and has some ergonomic flaws									212
	<b>EZO Fog Stage 3</b>	1,170	Curious player is difficult to drive, and has sound quality that both enchants and sometimes confounds									212
R	<b>Kenwood DVF-3030</b>	180	Solid CD player with straightforward features									207
BB	<b>Kenwood DP-4090</b>	250	Focuses a clear, wide aperture lens on the music — and has CD Text too									172
	<b>Kenwood DVF-R9030</b>	800	Kenwood's first DVD-A player suffers from a mild compression of dynamics resulting in a polite yet matter of fact sound									206
R	<b>Linn Genki</b>	995	Explicit, rather bright sounding player with strong multi-room appeal									212
	<b>Marantz CD5000</b>	150	Well equipped budget player sounds thin and rough at times									202
	<b>Marantz CC3000</b>	150	Ragged sounding multidisc player, but it is cheap and well equipped									204
BB	<b>Marantz CD6000</b>	250	Great package with all mod cons, and eminently listenable too									207
BB	<b>Marantz CD6000 OSE LE</b>	300	Detailed, well rounded, at home in any musical context — a real bargain									217
BB	<b>Marantz CD6000 KI Signature</b>	500	Excellent all rounder, a well appointed good value package									212
R	<b>Marantz CD-17 MkII</b>	800	Sophisticated player with a short but attractive feature set, and a new found bounce in its step									206
R	<b>Marantz CD-17KI Sig</b>	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland									176
R	<b>Marantz CD-7</b>	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure									194
	<b>Marantz SA1251</b>	3,500	Highly refined and beautifully built multichannel SA & DVD-V player that doesn't quite match Sony's best									223
EC	<b>Marantz SA-1</b>	5,000	The brand's first SACD player is a stunning machine that's equally as strong with conventional CD									208
R	<b>Mercurius Tanto</b>	1,395	Believable tonal colours and textures, refinement takes preference over dynamics — but it's not cheap									169
BB	<b>Meridian 506</b>	1,100	Revised 506 includes MSR remote and a new DIA chip, which makes it livelier and more detailed									176
	<b>Monrio Asty</b>	695	Well built player has solid, propulsive sound quality that deteriorates towards HF									200
	<b>Musical Fidelity X-RAY</b>	799	Brilliantly packaged and clean but slightly antiseptic sounding player									184
BB	<b>Musical Fidelity A3 CD</b>	800	Excellent player has few faults apart from a slight loss of EHF detail									200
	<b>Myryad T-10</b>	400	Rather ordinary player fails to shine with good music recordings									184
	<b>Myryad T-20</b>	600	Matter of fact styling and sound quality, a tad bright for some systems									195
	<b>Myryad MCD 600</b>	1,299	Abundance of detail and resolution from this 'Super DAC' CD p'ayer									220
R	<b>NAD C520</b>	170	Significantly improved entry level NAD is smooth and dynamic, if slightly dull									207
	<b>NAD C521</b>	200	Good timing and excitement, but not good at holding the listener's attention									212
	<b>NAD 523</b>	250	Lacklustre musical presentation was disappointing on test; so was the absence of a digital output									204
	<b>NAD C540</b>	330	Not cheap, and disc handling is pedestrian at best, but the C540 is smooth & elegant with just a hint of aggression									200
R	<b>NAD Silverline S500</b>	1,100	It sounds as good as it looks, which is notably refined and easy on the ear									195
R	<b>Naim Audio CDS</b>	1,125	Recommended subject to audition, a dynamic machine, yet some physical minuses									212
EC	<b>Naim NACDSII/XPS</b>	5,625	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results									188
R	<b>Nakamichi MB-10</b>	400	Jewel of a multi-disc player, with crisp sound and superb fuss-free compact packaging									204
R	<b>Onkyo DX-7222</b>	150	Competitive following recent price cut, and on the whole a strong performer musically									200
	<b>Onkyo DX-7511</b>	300	Earthbound mid-price CD player fails to excite									207
	<b>Parasound C/DP-1000</b>	499	Comes on like a high end player, but ultimately sounds a bit weak and soft-centred									184
	<b>Philips CD751</b>	150	Inconsistent and occasionally opaque and scrawny sounding cheapie									172
BB	<b>Philips SACD-1000</b>	1,300	Not quite a universal disc player, but it does SACD multi-channel, DVD-Video and CD to a universally high standard									220
	<b>Pioneer PD-5507</b>	200	Low cost Legato Link implementation sounds gentle but slightly muddled									191
	<b>Primare D20</b>	799	Well presented player doesn't quite cut the mustard, though it performs promisingly									188
	<b>Revox Exception E426</b>	2,250	Very stylish with a light, agile sound that extends superbly and has fine timing									182
	<b>Roksan Kandy</b>	475	Slightly old-fashioned sound quality player available in various colour schemes									200
	<b>Roksan Caspian</b>	895	Improved Caspian (retested for 2001) is still bold, dynamic player, but rather more subtle and expressive									212
	<b>Rotel RCD-951</b>	300	Disappointing chopped-down RCD-971 — buy the original									191

## ONE-BOX CD PLAYERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	ASX/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
BB	<b>Rotel RCD-971</b>	450	Odd disc handling logic, but bold, detailed and refined sound make this a must	●									184
R	<b>Rotel RCD-991</b>	825	Strong midrange player with switchable dither levels to provide some system tweaking ability	●	●								212
	<b>Sherwood CD1</b>	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	●			●						163
	<b>Sharp DX-SX1</b>	2,700	Stylish player with a slightly forward but extremely nimble sound. Connects to matching digital amp via dedicated umbilical	●			●			●	●		211
R	<b>Sony CDP-XE330</b>	100	Unrefined, but lively, detailed and highly affordable				●						202
	<b>Sony CDP-XE530</b>	140	Well equipped, but raw, scrappy sounding player lacks depth and weight				●			●	●		200
BB	<b>Sony CDP-XB930E</b>	300	Yet another first rate UK optimised player with all the bells and whistles	●			●						195
R	<b>Sony DVP-NS700V</b>	400	Outrageously good value for money DVD-V/SA player, though SACD replay quality trails the audio only Sony SCD-XB770ES	●			●					●	220
BB	<b>Sony SCD-XB770UK</b>	400	Expressive and expansive player in the best SACD tradition, but CD replay is disappointingly lacklustre	●			●						220
EC	<b>Sony SCD-333ES</b>	1,200	Entry level high end multichannel SA player is excellent with both CD and the new format, but particularly impressive in surround	●			●					●	224
BB	<b>Sony SCD-555ES</b>	1,200	Fabulously built with superb sound using both CD and Super Audio software, you'll be hard pressed to find a better CD player at the price	●			●					●	213
EC	<b>Sony SCD-XA777ES</b>	2,300	Superb multichannel player that set the benchmark for the format at its launch	●			●					●	223
EC	<b>Sony SCD-1</b>	3,500	The first SACD player sounds fabulous but its a slow operator and doesn't support multichannel	●			●		●			●	194
	<b>T+A CD1210R</b>	1,185	Intriguing player with rather pushy basic sound, but has switchable digital filters	●			●						188
	<b>Talk Electronics Thunder 1</b>	550	Entry level upgradeable Talk Electronics player sounds slightly muted				●						200
	<b>Talk Electronics Thunder 2</b>	699	Fine player, slightly lacking in dynamics, but readily, if expensively upgradable in various ways				●						191
R	<b>Talk Electronics Thunder 3</b>	1,000	Clean, fast, and availability of a complete upgrade path make this a good long term proposition				●						195
R	<b>TAG Md.aren CD20R</b>	1,249	Dry and unatmospheric, but plenty of presence – recommended with caution	●			●						188
	<b>Teac VRDS-9</b>	700	Well-presented. This Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	●			●						176
	<b>Teac VRDS-25x</b>	1,000	Excellent, individualistic player with bold, colourful sound, but test sample had iffy CD-R compatibility	●			●		●				195
	<b>Technics SL-PG390</b>	90	It's very cheap. Very, very cheap				●						202
	<b>Technics SL-PS7</b>	200	Strong, but ultimately rather opaque and hard-sounding, high tech CD player			●				●			207
R	<b>Technics SL-MC7</b>	300	Maximum storage capacity for a minimum price, and presentable sound too (multidisc)			●					●	●	204
	<b>Thule Spirit CD100</b>	600	Definitely a try before you buy machine, but the bass and mid are excellent	●			●						188
	<b>Trichord Genesis</b>	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority	●			●			●	●		169
	<b>Trichord Revelation</b>	799	Well-ordered and clean sound that may be a little too refined for some, images well	●			●			●			166
	<b>Tube Technology Fusion MkII</b>	1,350	Improvements over the original model but still remains too inconsistent for its own good				●	●	●				206
	<b>Tube Technology Fulcrum</b>	2,800	An imaginative two-box player with a smooth sound that lacks some lustre	●	●		●						194
	<b>Yamaha CDX-596</b>	230	Well-priced and attractive-sounding, this player can read CD-RW	●			●			●	●		207
	<b>Yamaha CDX-496</b>	180	A rather splashy and approximate sound, further hampered by mechanical noise	●			●			●	●		217
	<b>Yamaha CD-X993</b>	400	A bit of a lush, though the sound is singularly free of grain, and equipment levels are strong	●			●			●	●		184
	<b>YBA Spécial</b>	695	There is nothing here to justify the pricing or the high-end parentage. Avoid				●						195

## CD TRANSPORTS

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	ASX/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
R	<b>Audio Note CDT Zero</b>	550	Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with DAC1)	●	●								212
	<b>Linn Karik</b>	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing				●						144
	<b>Roksan Attessa ATT-DP3</b>	1,295	Not the most detailed or refined but capable of sounding exciting with the right material				●						162
	<b>Theta Carmen</b>	3,299	A well equipped and extremely upgradable CD/DVD transport. Right now, the finest of its type				●						203
	<b>Theta Data Basic II</b>	2,397	Uses a Philips CDM9 Pro mechanism and works a treat with more lively DACs				●						130
	<b>Thorens TCD2000</b>	999	Lively presentation not helped by rather loose bass and splashy treble. (Tested with TDA 2000 DAC)				●						162
R	<b>Trichord Digital Turntable</b>	699	Very detailed, precise, controlled yet involving; a first-rank performer	●			●						162

## DACS

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	ASX/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
	<b>Alchemist TS-D-1</b>	300	24/96-equipped DAC sounds tidy but a little shut-in with both 16-bit CDs and 24-bit/96kHz DVDs										187
	<b>Audio Note DAC Zero</b>	369	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)										191
R	<b>Audio Note DAC Zero 1x</b>	750	Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with CDT Zero)										212
	<b>Audio Note DAC 5</b>	18,500	Astonishingly natural and realistic in the right system, the only problem being the extravagant price										203
EC	<b>dCS Delius</b>	5,000	State-of-the-art resolution with considerably greater flexibility than anything else, hard to beat	●	●			●	●			●	207
	<b>dCS Purcell</b>	3,500	The first upsampler on the market adds significant depth and increased bass resolve with a suitable DAC	●	●			●	●			●	207

# DVD PLAYERS



STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	ASX/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
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R	<b>Arcam DIVA DV88</b>	1,000	A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player	●			●						213
	<b>Arcam FMJ DV27</b>	1,600	Spirited CD performance and a great DVD-V upgrade path				●						219
BB	<b>Denon DVD-1000</b>	300	Fine, stripped down player concentrates on the essentials, and scores a direct hit.	●			●						216
R	<b>Denon DVD-1500</b>	400	Colourful and engaging (if lightweight) sound, with excellent picture quality	●			●			●			207
BB	<b>Denon DVD-2800</b>	750	First-rate all-rounder, this is a gimmick-free design that is well built and offers good CD and DVD sound quality and finely resolved pictures	●			●						221
R	<b>Denon DVD-3300</b>	1,000	Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too.	●			●			●		●	213
R	<b>Encore DV-450</b>	200	Superb value for money, though mainly of interest to the videophile on a shoestring	●			●			●			207
	<b>Harman/Kardon DVD10</b>	299	Bulky DVD-Video player with unexciting picture quality, and promising but ultimately unexceptional CD replay performance	●			●						221
	<b>Hitachi DVP-705</b>	380	Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing.	●	●		●						216
	<b>Integra research RD-V1</b>	2,700	Refined in use and on audition, but a lack of resolving power and an unbalanced feature set militate against this model	●			●					●	220





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STEREO SPEAKERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W/m)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	Neat Neat Petite III	845	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,30,5,20		86	5	30		●	211
R	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
	NHT Super Zero	200	If tiny size is top priority, the Super Zero is worth considering. It looks nice and sounds articulate, but it definitely needs a subwoofer	14,23,14		84	8	100		●	215
BB	NHT Super One	250	A fine compromise between size and performance, sensitivity and hence loudness capability is modest	18,5,29,5,23		85	8	30	●		170
BB	NHT 1.5	400	his compact standmount sounds much bigger than it has any right to. Good timing and communication skills	18,42,26		85	6	40	●		177
R	NHT Super Two	550	Black and shiny compact three-way floorstander has marvellously even balance and good coherence	18,5,100,26	●	87	8.5	25		●	199
	Oheocha D2-Is0-5	2,500	Radical aluminium pawn shaped cabinets combine with multiple drivers make a subtle and refined sound	37,94,37	●	89	8	30	●		217
	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	●		167
R	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
BB	PMC TB2	700	A worthy and prettier successor to the TB1, which sets a high standard in its size/type class for neutrality and transparency	20,40,5,31		88	8	30	●		211
R	PMC LB1	999	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic	17,5,53,26		87	6.5	40	●		199
BB	PMC FB1	1,275	Handsome floorstander has the lively coherence of a simple two-way alongside impressive bass weight and extension	20,105,31	●	88	6	20	●		204
R	PMC AML1	3,700	Sparkling active Pro monitor with serious attitude: 'in yer face' balance, with great dynamics	20,40,32		A	A	25	●		214
	ProAc Tablette 2000 Sig.	899	Beautifully veneered compact stand-mount is classically balanced, if a little on the bright side of neutral	19,36,26		87	6	30	●		204
	ProAc Studi0 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
	ProAc Reponse 1.5	1,790	Gorgeous but pricey floorstander has lovely midband voicing but limited bandwidth resolution	19,98,25	●	86	7	35	●		219
	QLN Signature	1,000	Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	27,37,36	●	83	4	25	●		167
	Quad ESL-989	4,600	A very 'different' speaker experience, with magnificent midband transparency and imaging, but limited loudness capability	67,134,32	●	83	3	38	●		213
	Red Rose Music R3	3,500	Compact two-way with lovely veneer and ribbon tweeter: probably the most sophisticated small speaker out there	20,40,5,26		87	4	46	●		219
R	Rega Jura	450	Beefy sounding, chunky floorstander sounds very 'direct coupled' to the music, if a touch 'boom'n'tizz'	22,5,92,5,26	●	90	5	25	●		193
R	Rega ELA Mk II	498	Pretty smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	●	87	8	40	●		139
	RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand - clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●		167
EC	Royd Revelation RR2	1,199	Pretty little floorstander delivers genuinely deep bass without 'thump'; lovely clean, open midband too	19,89,18	●	85	4	20	●		221
R	Roksan Ojan 3X	995	Innovative low-line, two-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	●	84	8	20	●		167
R	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	●		174
	Ruark Prologue One R	949	Strikingly contemporary compact floorstander is well voiced but a little lean in overall balance	17,5,93,28	●	88	5	25	●		204
R	Ruark CL20	1,650	This punchy rock'n'roller has plenty of drive and enthusiasm, but can sound aggressive	23,93,34	●	90	5	38	●		219
R	Ruark Excalibur	7,000	A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom	30,125,53	●	90	4	30	●		186
	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
BB	Snell E.5 Mk2	1,520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30	●	89	4	20	●		211
	Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration	28,117,50	●	91	6	25	●		194
	Solilo uy 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
	Sonus Faber Grand Piano Home	1,589	Classy walnut'n'leather floorstander with fine engineering and lovely midband voicing	23,5,29,108	●	90	3	25	●		214
	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
R	Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●		160
	Spendor S3	600	Beautifully voiced and unboxy sub-miniature lacks some dynamic and loudness capabilities. Best suited to small rooms	16,5,30,5,21	●	82	6	30	●	●	224
R	Spendor SP2/3e	1,295	Large stand-mount is polite to a fault, but has beautiful 'hear-through' transparency - a genuine classic	28,55,33		88	8	50	●		219
EC	Spendor S9	2,500	Meaty three way with superb bass and explicit mid - one for detail fans	24,99,8,38	●	90	8	37	●		223
EC	TAG McLaren F1	15,000	Oddball aesthetics with accurate, unflappable, controlled and consistent sonic neutrality	40,127,48	●	87	8	25	●		202
BB	Tannoy mX2	150	Surprisingly refined considering its very modest price: very communicative with outstanding midband delicacy	18,5,33,25	●	89	4	45	●		207
	Tannoy Revolution 1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22		86	4	30	●		187
BB	Tannoy mX3	300	A great all-round compromise at a very modest price, combining good looks with fine midband voicing	18,5,87,26	●	90	5	40	●		201
	Tannoy mX4	350	Pretty 2.5-way has a clean and unboxy sound with respectable transparency, but lacks the dynamic grip and drive to make music really involving	18,5,96,26	●	89	3	20	●	●	215
BB	Tannoy Revolution R2	350	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24	●	90	4	20	●		193
	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
R	Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	24,85,23	●	87	6	26	●		167
	Tannoy ST-100	1,200	This supertweeter adds a subtle and delicate effect while also broadening the soundstage at a price	10,15,5,6	●	95	8	N/A	●		206
EC	Tannoy TD10	5,000	Extremely competent and rhythmic speaker, a futureproof supertweeter and detail to die for	35,101,37	●	91	6	38	●		215
	Tannoy Kingdom 12	6,000	Something of a throwback, but great fun, with fine dynamics and authority, but a tricky amp load	54,106,46	●	92	3	28	●		213
	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
BB	Triangle Zephyr II	599	Loads of fun. Dramatic dynamics and righteous timing will give any hi-fi system a wake-up call	22,94,29	●	91	4	25	●		190
BB	Triangle Antal XS	875	Ugly duckling has a rather tasty sound, with plenty of vigour and excitement	22,108,30	●	92	3	40	●		219
EC	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
R	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
EC	Wilson benesch Discovery	5,500	Innovative three way with built-in stand, combines great subtlety with weight and headroom	23,47,38	●		6	45	●		212
EC	Wilson benesch Bishop	20,000	Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too	23,161,561	●	89	4	S20	●		189
	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
	Wdale 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 Pacific Pi-20	350	Good material value and a decent fun factor, though a somewhat wayward balance compromises neutrality	22,95,28	●	87	4	25	●		224
	Wharfedale Pacific Pi40	500	A lot of speaker for the money, but bass is unruly, even in a large-sized room. he smaller Pi30 might give a better bottom-end balance	22,113,36	●	89	3	25	●		215
R	Zingali Overture 25	1,975	Gorgeous, pricey, imposing standmount has a horn tweeter of great delicacy. Impressively weighty	30,57,38		90	8	25	●		195

SUBWOOFERS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W/m)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	B&W ASW1000	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
	Jamo D8SUB	950	Pretty but pricey, the D8SUB packs plenty of punch (for movie fans), but doesn't delve deep enough for music replay	45,5,41,45,5		A		30	●		210
	M&K MX70	795	Cutely compact and entertaining too, but lacks the ultimate extension to justify its high price	37,32,30	●	A		25	●		210
	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
R	Paradigm PDR-10	150	Not much grip, drive or authority, but it doesn't get in the way and it is very cheap	34,5,36,42	●	A		25	●		210
	Polk PSW430	400	A lot of subwoofer for your money, but lacks deep grunt and is more movie than music oriented	38,5,45,46	●	A		25	●		210
	REL Q400E	1,000	A class system, and good for movies, but has a tendency to thicken textures and add a bit too much 'thump' to music	39,42,43	●	A		16	●		217
EC	REL Stadium III	1,500	It's a bulky piece of furniture but offers superior filtering as well as an ability to delve deep into the bass nether regions	59,56,39		A		16	●		217

# PERSONAL / INTERNET

## PERSONAL STEREO

### SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	STORAGE FORMAT	RECORDING	IN-LINE REMOTE	CODEC	PC CONNECTION	STANDARD CAPACITY	ISSUE NUMBER
	Aiwa HS-PX307	30	So-so sound but an impressive features roster. Decent value overall	Cassette		●				204
R	Aiwa AM-HX50	180	Neat play-back only personal with an impressively full-bodied sound, though short on detail	MiniDisc		●				204
	JVC XL-PG31	60	"Challenging" looks and frankly unpleasant sound add up to a player that's best avoided.	CD						216
	JVC XM-R700SL	250	The most expensive player here, but its in-ey-face sound and slab-like, heavy design make its value questionable	MiniDisc	●	●				216
R	Kenwood DPC-X517	100	Clean, funky bass makes for an exciting sound; an attractive proposition, if you can stomach the looks	CD						216
R	Panasonic RQ-SX71	70	A sleek aluminium body, decent sound and superb features	Cassette		●				204
	Panasonic RQ-SX91	80	A super-slick personal for well-heeled cassette users. Sound is rather bright	Cassette		●				204
R	Panasonic SJ-MR220	180	The smallest MD recorder in the world, at the time of writing. Lacks some oomph but fully featured and good value	MiniDisc	●	●				223
	Panasonic SJ-MR100	250	Well built and nicely appointed, though performance is unremarkable at the price	MiniDisc	●	●				204
R	Philips ACT75B2	115	A splash-proof body and an entertaining sound – the perfect CD personal for holiday japes	CD						204
R	Sharp MD-MT877H	230	Pleasantly up-front sounding player in a sexy little package, well worth your attention if you like that kind of thing	MiniDisc	●	●				216
R	Sharp MD-MT888H	230	An MD personal that's packed with features and delivers a powerful, involving sound	MiniDisc	●	●				223
	Sony WM-EX404	35	Super-stylish but sonically flawed, with particularly uncomfortable earphones	Cassette						204
BB	Sony D-EJ925	150	Beautiful design matched with a beguiling sound – a clear Best Buy	CD		●				216
BB	Sony MZ-G750	200	Light, simple to use, and with a relaxed and enjoyable sound, and with a tuner too!	MiniDisc	●	●				216
BB	Sony MZ-R91	250	A petite and sexy beast with good sound and excellent facilities	MiniDisc	●	●				204
R	Sony MZ-R900	250	Gorgeous little MD personal with a well-balanced sound. Makes great recordings but lacks a little punch	MiniDisc	●	●				223

## INTERNET AUDIO

STATUS	PRODUCT	£	COMMENTS	STORAGE FORMAT	RECORDING	IN-LINE REMOTE	CODEC	PC CONNECTION	STANDARD CAPACITY	ISSUE NUMBER
	Aiwa MM-VX100	130	Aiwa's expertise in the personal stereo field is visible, but performance is only average	Solid State	●	●	MP3	PRL	32MB	204
BB	Creative Labs Digital Jukebox	349	Smartly designed high-capacity portable with storage for over 1,000 tracks	Hard Drive	●		Agnostic	USB	5.7GB	208
R	DigMedia Music Store	350	Innovative CD/hard drive combo with optional solid state portable. MP3 with or without a computer	CD/H/D	●		MP3	USB	5.4GB	208
R	Intel Pocket Concert	171	Big, substantial sound and large 128Mb built-in memory, but no expansion slots	Solid State	●		MP3/WMA	USB	128MB	223
	JazPiper MV32P	125	First wave player that looks good but sounds bright. Includes voice recording and phone book features	Solid State	●		MP3	PRL	32MB	195
	LG MF-PD360	130	Good looking and temptingly affordable, but features and performance are nothing special	Solid State	●		MP3	USB	32MB	208
	LG AHA-FD770	200	Cassette and solid state personal in one – novel idea, poor execution	SS/Cass	●	●	MP3	PRL	32MB	204
	Logix Evzone	219	Novell MP3 player that uses Iomega Click! discs for storage. Chunky but quite effective, and discs are much cheaper than memory cards	Click! Discs	●		MP3/WMA	USB	40MB	213
R	Neo-25	420	Sparsely equipped but efficient hard drive portable with an exceptionally high potential capacity. Average in the sound department	Hard Drive	●		MP3	USB	10GB	213
	Philips eXpanium EXP401	150	Neat little personal that plays 8cm CD-R discs, two-thirds the size of regular CDs. Use your computer's CD writer to burn on MP3s...	Mini-CD		●	MP3/AAC	USB		223
R	Philips eXpanium EXP103	190	The best MP3-CD personal, at least at the time of writing... An effective solution for MP3 on the move	CD			MP3			213
	Philips Rush SA126	250	Sound is a little thin and wishy-washy, and the fiddly controls and lack of remote make it difficult to use	Solid State	●		MP3	USB/PRL	64MB	216
R	Pine D'Music	120	Good build, solid sound and a voice recording mode make this a good first-time buy	Solid State	●		MP3	PRL	32MB	195
	Pontis SP504	158	Not the best aesthetically, but exceptionally good MP3 sound	Solid State	●		MP3	USB	32MB	204
R	Rio 500	190	Well featured and a strong performer, though new generation Rios have now arrived	Solid State	●		MP3	USB	64MB	195
R	Rio 600	169	Neat design, strong future-proofing, good features and sound. Only its memory lets it down	Solid State	●		Agnostic	USB	32MB	208
R	Rio 800	300	If you're interested in solid state, this player's great sound and ease of use make it worth a look	Solid State	●	●	Agnostic	USB	64MB	216
R	Samsung Yepp YP-30S	200	Tiny MP3 player with a solid, punchy sound. Some limitations but a cool design	Solid State	●		MP3	USB	64MB	223
	Sony SSP-PD7	250	Cute but pricey with limited supplied memory, but sound is good and it's one of the first to employ AAC coding	Solid State	●		MP3/AAC	USB	32MB	213
	Schneider MPMan F20	99	The world's first MP3 personal. Basic but still good value	Solid State	●		MP3	PRL	32MB	195
	Smart Portable MP3 Disc Player	119	CD personal that also plays MP3 tracks burnt onto CD-R discs	CD			MP3			208
	Sony NW-M57	249	A gorgeous little personal using Sony's Memory Stick storage. Good but pricey	Solid State	●		MP3/ATRAC-3	USB	64MB	208
	Sony NW-M59	300	It's got size and simplicity on its side, but it's up-front, boomy sound is significantly below par	Solid State	●		MP3/ATRAC-3	USB	64MB	216
R	Sony MDC-PC3	350	A MiniDisc deck which hooks to a PC. Introduces cheap and flexible MD media to the world of MP3	MiniDisc	●		MP3/ATRAC	USB		213
R	Thomson Lyra Personal Jukebox	300	Neat portable with a big 10Gb capacity – enough for 1000s of MP3 tracks. Some control foibles but sounds good	Hard Disc	●		MP3/MP3 Pro	USB	10GB	223

# RECORD PLAYERS

## TURNTABLES

### SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP SUBCLASS	EXTERNAL PSU	SUPPLIED WITH ARM	SUPPLIED WITH CART	ISSUE NUMBER
BB	Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high end performance at an affordable price	●			33/45	●	●	●		203
EC	AvidAcutus	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					144
R	DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table	●			33/45	●		●	●	144
R	Dual CS415-2	160	No denying it's cheap and cheerful, but it does what it's paid for happily enough		●		33/45			●	●	214
	Dual CS 455.1	220	Neat record player with automatic convenience (and 78rpm), but doesn't match simpler manual rivals sonically		●		33/45/78	●	●	●	●	203
R	Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph			●	33/45	●	●	●	●	103
R	Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●			33/45	●	●	●	●	91
R	Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc. still top rank	●			33	●	●	●	●	103
R	Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●			33/45	●	●	●	●	91
	Moth Alamo	285	Basically a Rega P2 with a Perspex platter: doesn't seem to justify the price difference	●			33/45			●		214
BB	Michell Orbe SE	1,725	A Superb turntable, able to mix it with the best at virtually any price	●			33/45	●				192
BB	NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	●			33/45			●	●	203
BB	Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●			33/45			●	●	159

## SUBWOOFERS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	REL Strata III	800	A little more bottom octave might have been preferable, but in terms of agility and coherence this is a fine hi-fi subwoofer	42,52,33		A		20			210
R	REL Q50	375	This good looking if bulky sub does the business with impressive flexibility and sonic self-effacement	42,53,31		A		20			210
R	Ruark Log-Rhythm	775	Adds weight and scale with commendable discretion, making a positive contribution to the whole musical exposition	43,43,43	●	A		<20			210
	Soliloquy S10	1,050	(Ac ivo) Pretty subwoofer, cosmetically matching SM 2A3 speakers, pricey and mid-bass a bit strong	51,30,5,46	●	A		25	●		196

## SATELLITE & SUBWOOFER SYSTEMS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	AE Aego2	300	Not quite a serious hi-fi speaker system, but a seriously fun type product for all that (19x35x27cm sub)	7,10,9		A	n/a	45	●		218
R	Bandor Trident II	776	Loudness is limited, but overall sound is impressively homogeneous and coherent. (31x46x31cm sub)	12,13,10-12		83	6	25	●		218
R	Boston Micro 90	650	Lacks warmth but the midband is smooth and impressively evenhanded (37x36x39cm sub)	10,17,14		88	4	28	●		218
R	Cabasse Jupiter/lo	1,230	A sub/sat combo that really competes with proper stereo speakers. Striking styling and stereo imaging (40x43x41cm sub)	15 diam		94	2	30	●		218
	KEF KMS2002	499	Looks the business, but lacks deep bass and the presence/treble is also too restrained (32x36x32cm sub)	13,23,14		85	3	45	●		218
	Mission FS2	450	Intriguing NXT speaker technology has minimal visual impact, but lacks dynamic precision (32x47x25cm sub)	13,5,28,4,5		86	6	40	●		218
	NHT Super Zero/Sub One	1,000	Decent enough, but not the prettiest nor the best value around for music replay - one for movie fans (40x41x42cm sub)	14,23,14		84	8	30	●		218
R	Ruark Vita 100	900	Not the cheapest sub/sat, but certainly one of the most accomplished, sonically and visually (30x42x30cm sub)	11,20,17		86	6	40	●		218

# LOUDSPEAKERS

## MULTICHANNEL SPEAKERS & PACKAGES

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
BB	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 Aesprit pkg	1,230	Could sound more exciting, but imaging, solidity and neutrality all impressive. Poor centre magnetic shielding	var var	var	90	5	23	var	var	224
R	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
BB	B&W 600 S3 package	900	Unquestionably delivers the sonic goods. Decent size, high quality drivers in stand-mount enclosures still make sense, whatever the prevailing fashion	var	N	89	3	22	●		224
	B&W Nautilus package	6,500	This classy, laid-back package is arguably too good for current programming. Very bulky centre speaker	var var	var	n/a	3	20		●	210
R	Castle package	1,199	Lovely real wood veneers. Sound has fine dynamic drive and expression, but can sound a little hard	var var	var	85-90	6	28		●	224
	Dali Blue system	1,007	Incorporates some interesting ideas, and decent value for money too, but a rather movie-oriented package	var var	var	88-93	4	22	var	var	224
	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 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
	Infinity Alpha package	833	Distinctive high tech styling, fine build and advanced drivers. Sounds thoroughly competent, but didn't excel	var var	var	84-89	4	20		●	224
	Jamo E8 package	775	A tad bright for some tastes, and without quite the grip and drive to make the most of multichannel material	var var	var	86	5	30	●		224
	Jamo Concert package	2,500	Lovely main speakers sonically overshadow the centre, while surrounds are a bit obvious too	var var	var	n/a	5	30		●	210
BB	JBL Xti-series package	1,190	Hexagonal boxes all round, this package has decent authority and all round tension	var var	var	n/a	5	40		●	210
R	JMLab Cobalt package	1,707	A little lean and bright, but with righteous dynamic expression and lively communication skills	var var	var	88-90	3	22	●		224
	KEF Q-series package	880	Cleverly designed, vinyl-finished UniQ package packs a goody thump but centre and surrounds stand out	var var	var	n/a	3	25		●	210
	Mirage OM-series package	2,000	Big black and bouncy package with omni fronts has plenty of vigour but some coloration var	var var	var	n/a	4	20		●	210
R	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
	Mission M package	480	A very inexpensive and good looking system, but the surround bits are better suited to movies than music	var var	var	88	4	25	var	var	224
	Mission Cinema 8 package	1,400	Beautifully styled and cleverly designed package, but could have more grunt and drive for the price	var var	var	n/a	4	30		●	210
	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
	Monitor Audio Silver series	1,000	Great looking conventionally styled package lacks something in dynamic drive and tension	var var	var	n/a	4	30		●	210
R	Mordaunt-Short Declaration 500	1,600	Good value vinyl THX Select package with Power Towers. Good authority but must be 5.1-connected var	var var	var	n/a	3	25		●	210
R	PMC FB1 TB2 package	2,485	Classy if bulky and pricey package has good transparency, coherence and weight	var var	var	n/a	6	20		●	210
	Rega Jura/Ara/Senta	938	Classy real wood package does a good all round job, but sounds bright and might have more surround weight	var var	var	n/a	4	25		●	210
R	Spendor package	1,630	Ultra-tines lack some dynamic and loudness capabilities, but beautiful voicing and freedom from boxiness; best suited to smaller rooms	var var	var	82-86	6	30		●	224
BB	Tannoy mXAV4 package	500	Lacks grunt, grip and authority, but smooth and refined with seamless surround coherence	var var	var	n/a	4	20		●	210
BB	Tannoy Saturn S6LCR	400	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	21,38,29		89	6	25		●	198
BB	Tannoy Saturn S6	500	Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension	21,89,29	●	91	4	20	●		198
R	Wharfedale Pacific package	700	Plenty of loudspeakers for the money. Balance is somewhat wayward but unquestionably entertaining	var var	var	87	3	25	●		224

## CENTRE CHANNEL SPEAKERS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	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
	B&W Nautilus HTM1	1,500	Very bulky for a centre speaker, though very capable too - a little less laid back than its siblings	76,37,30		89	4	30		●	210
	Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,29		88	8	45	●		198
R	Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55,5,17,5,31		90	4	40	●		198
	Jamo Concert Center	550	A decent balance match but lacks the class and grip of the Concert Bs, and is bulky and pricey too	55,22,30		87	5	100		●	210
BB	JBL Xti10C	200	An elegant, cleverly designed centre and a good match for the 40s. Better value than most too	51,19,5,27		88	5	50		●	210
	KEF Q95C	200	This artfully designed UniQ centre looks much better than most on top of the TV set	40,17,17		89	3	120		●	210
	Mirage OM-C2	600	Large but discreet omni-bi-pole matches OM-10-1 well but lacks tight focus, and seems expensive	64,18,5,31		88	4	50		●	210
R	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
	Mission 78C	350	Makes a good visual and sonic match for the 782, but quite pricey by comparison, given the ingredients	45,17,19		86	3	100		●	210
	Monitor Audio Silver Centre 10i	300	Neat and good looking partner to the Silver 5is, but a little more forward, and quite expensive too	50,17,21		87	4	100		●	210
	Mordaunt-Short MS 504	200	Smart yet discreet and a good match for the 502. Sounds clean and expressive, and is well priced	50,19,20		88	3	120		●	210
R	PMC TB2M/C	325	This bulky centre speaker is quite pricey, but it combines good transparency with some authority	40,20,31		87	6	50		●	210
	Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35		92	4	25	●		198
R	Rega Senta	185	The very compact Senta is sensibly priced, a bit bright maybe, but articulate and expressive	32,16,21		89	4	120		●	210
BB	Tannoy mXc	100	Could be more exciting, but a very impressive centre speaker at an unusually reasonable price	42,16,21		88	4	120		●	210
BB	Tannoy Saturn S6C	200	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	38,21,29		89	6	25	●		198

TURNABLES (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH ARM	SUPPLIED WITH CART	ISSUE NUMBER
BB	Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound	●			33/45			●	●	164
	Pro-ject Classic Cherry	450	A great looking turntable with a generous and dynamic sound, but lacks something in overall coherence	●			33/45			●	●	203
	Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best	●			33/45	●		●	●	192
R	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
BB	Rega P2	198	Updated Planar 2: just as much fun as ever and now even better value as the competition falls away	●			33/45			●	●	214
R	Rega P3	298	Updated Planar 3, building on the strengths of the P2 with added subtlety and detail	●			33/45			●	●	214
BB	Rega Planar 25	619	Great looking turntable has a silky smooth sound with exceptional midband coherence	●			33/45		●	●	●	203
BB	Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●			33/45		●	●	●	159
R	Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●			33/45	●	●	●	●	159
EC	SME Model 10A	3,333	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	●			33/45	●	●	●	●	195
EC	SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	●			33/45/78	●	●	●	●	186
BB	Thorens TD166 VI/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget cartridges	●			33/45	●	●	●	●	103
	Thorens TD146 VI	550	Tonearm not quite up to turntable's potential; this semi-auto is much pricier than manual TD166	●			33/45	●	●	●	●	203
	Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●			33/45	●	●	●	●	159
R	VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	●			33/45	●	●	●	●	203
R	Well Tempered Record Player	850	Intriguing and challenging. Musically not ideal, but its limpid quality and lack of artificiality set standards	●			33/45	●	●	●	●	136
EC	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in a clean reproduction	●			33/45	●	●	●	●	205

CARTRIDGES

STATUS	PRODUCT	£	COMMENTS	MM	MC	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER
EC	Allaerts MC1B	1,295	Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford		●		0.5		203
BB	Audio Technica AT110E	28	Excellent performance for the price, with little more than some mild coloration and a touch of hardness at high levels	●		●	4.5	6	214
	Audio Technica AT-OC9ML	330	A well-finished cartridge with a sound that's smoothly detailed, but also rather unexciting		●		0.4	8	192
BB	Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy			●	0.55	11.5	175
	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
BB	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 XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm		●		0.25	12	84
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	175
EC	Dynavector DRT XV-1	2,500	Capable of conjuring one of the most tactile, three dimensional sound stages on the vinyl planet. Extremely entertaining		●		0.3	13	208
	Goldring 1006	70	Disappointing sound, marred chiefly by persistent harshness which affects all but very quiet music	●		●	6.5	7	214
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 Erica 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	175
R	Grado Prestige Black	49	Capable of admirable detail and treble extension, with good bass and ambience too	●		●	4	6	214
BB	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	175
	London Decca S Gold	399	Immediate and detailed, but coloured and nonlinear, with a questionable effect on records	●			5.0	6	84
	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
EC	Lyra Helikon	1095	Highly capable and highly neutral, this is a cartridge for all seasons. Albeit fussy about vinyl quality	●			0.5	8	215
	Lyra Parnassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak	●		●	0.22	10.5	175
BB	Ortofon 510/P	38	For the price, a good blend of virtues — weight, clarity and neutrality	●		●	3.0	5	85
R	Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle — take it as it comes		●		3.3	4	103
BB	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
BB	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
BB	Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound		●		0.25	8.5	175
R	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	42	Can sound a little hard and lacking bloom, though often exciting		●		5	4	214
R	Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●		●	5.0	5	67
R	Reson Recla	250	If you're after a high quality moving magnet cartridge, they don't get much better than this	●		●	6.5	6.3	192
R	Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●		●	6.5	5	91
BB	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
R	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
R	van den Hul MC-10	750	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass		●		0.4	6	60
R	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
R	van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal		●		0.4	6	72
R	van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals. This delicate and subtle performer has great charm		●		0.65	7	175
R	van den Hul G' hopper IIIGLA	2,800	Undoubtedly one of the finest cartridges available. It has tremendous bandwidth, energy and finesse		●		0.4	6	122
R	Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive		●		0.58	6	158
R	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	175

## TONEARMS

STATUS	PRODUCT	£	COMMENTS	EFFECTIVE MASS	PARALLEL TRACKING	PIVOTED	UNI-PIVOT	EFFECTIVE LENGTH (cm)	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	Med		●		229	67
BB	Rega RB250	109	The ultimate budget arm? Refined, sweet, detailed and natural	Low		●		237	60
BB	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

# STANDS & SUPPORTS

## EQUIPMENT SUPPORTS

STATUS	PRODUCT	£	COMMENTS	HEIGHT	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
	Aavik C4	200	Attractive wood finish stand with a very large footprint but sound is a little coloured	77	47			4	MDF	206
R	Aavik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47			4	Wood	193
	Apollo Symphony	245	Simple steel and glass stand which majors in excitement factor but lacks precision	73	46.5		●	4	Glass	206
	Apollo Soprano	275	Uninspiring looks and sonic performance that can be beaten at this price	68.5	45.5			4	Glass	193
	Apollo Mezzo Soprano	340	Heavyweight contender packing a big sonic punch. Looks cool, but can contribute a bit of character	68.5	53,5,44			4	Glass	217
R	Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6			4	Wood	193
BB	Atacama Equinox	280	Stable, modular design with style. Excellent bass transients and a fresh design concept	81	50,50		●	4	Glass	217
BB	Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43			4	MDF	193
R	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
BB	Clearlight Audio RDC Aspekt	550	Stunning neutrality and detail from a well damped design. Its performance makes the price tag seem rather good value	75	53,5,45			4	MDF	217
	Custom design E'lite E4	250	Fairly laid back for a glass/steel rack. Just loses out sonically to the competition	51	62,51			4	Glass	217
R	Custom Design Aspect650	270	Smart looks and practical thanks to adjustable shelves. Sound is fair with some loss of detail	66	46		●	4	Glass	206
R	Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49		●	4	Wood	193
	Kestrel Furniture Nightingale	495	Well engineered furniture quality rack with thoughtful extras. Large with pleasing but not winning performance	91	62,5,53.5			5	Wood	217
	Mans 4-tier	500	The ultimate statement in steel and glass; adds resonance in a way you'll love or hate	87	45		●	4	Glass	206
	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
R	Quadraspire Q4	280	Simple but modestly effective and very attractive	52	49			4	MDF	206
R	Quadraspire Q4 Reference	480	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5			4	Wood	217
	Sonus System Elite	330	Rather ugly and seems to offer little over and above cheaper steel and glass stands	68	50		●	4	Glass	206
	Sound Organisation Z545	160	Budget price and great looks make this a great value stand	73	46		●	4	Glass	193
R	Sound Organisation Z560	195	Excellent value rack, 5 shelves too! Well balanced and under £200	92	50,40			5	Glass	217
	Soundstyle X5100	270	Less character than other similar stands, but sound is somewhat short on transparency	72.5	49.5		●	4	Glass	206
	Soundstyle Radius SR100	280	Stylish looks and a smooth sound	63.5	49.5		●	4	Glass	193
BB	Standesign Design 4	190	An all-in-one support at a budget price with good sonic performance	88.5	50.8		●	4	Glass	193
BB	Towshend Seismic Sink Stand	900	Serious resolution and stunning isolation from air decoupled self levelling design. If you have the cash, buy one	61	53,39.5			4	MDF	217

## SPEAKER STANDS

STATUS	PRODUCT	£	COMMENTS	HEIGHT	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
	Alphason Akros II 60D	79	Good looking, well equipped with decent ingredients. Evenhanded but lacks dynamic enthusiasm	62	16.5		●			220
	Alphason HD5	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 A4/6	82	A pretty and robust design that sonically fails to stand out from the crowd	51, 40.51	18		●			202
BB	Atacama Nexus 6	50	An excellent all round performer and a genuine hi-fi bargain	60,50	14.5, 18		●			202
R	Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15, 17		●	●		189
	Atacama R724/Atabite	250	Good basic engineering plus plenty of mass results in a fine sounding stand at its price	61	16, 21.5		●	●		220
	Cyrus CLS50 stand	200	Unusual combination of style and performance, and a definite contender in the right environment	64	17, 19					220
R	Custom Design R/S300 MkII	100	A solid stand improving on the original with better focus and detail	61, 56, 51	16.5, 18		●			202
R	Elemental Isotube SZse	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
	Gale t60	70	Neither the least expensive nor the prettiest, and the sound is undistinguished too	63	16.5		●			220
	Green Apple Diamond Bevel	225	Sounds soft, gentle and somewhat dulled at the top, but takes top honours for style	61	15					220
R	hne Cableway	399	Looks great, sounds great, so start saving! Clean, sweet and neutrality is exceptional with orchestral material	63	17, 20		●			220
R	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
BB	Kudos S50	115	Formidable bass with real authority, and a wide dynamic range across a broad bandwidth	61	15, 20		●			220
R	Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29, 32					202
	Mission Stance	100	Detailed and open but needs a firm foundation to give its best	60	19, 15		●			202
	Mission Stancette	60	Smart styling and finish combined with a very low price. Sounds OK considering	60	16.5, 22		●			220
	Mordaunt-Short Atlas	90	Shiny silver Atlas looks great, but sound doesn't transcend the very basic engineering	53	17.5		●			220
BB	Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than most of the competition	50-100	19, 22		●	●		189
R	Partington Dreadnought	100	Fully welded high class engineering gives a very clean, open sound at a sharp price	61	17, 15		●	●		220
R	Partington Dreadnought Ult.	299	Super heavyweight stand that is an open window to the speaker placed on it	63	20.5, 23.5		●			220
	Quadraspire QS speaker stand	150	Styled to match the company's equipment racks, a very decent sounding stand at a fair price	62	14					202
	Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33, 24					189
	Sonus Systems Excel	110	Strong performance when filled with sand but design flaws let it down	65, 45	20, 22.5		●			202
R	Sound Organisation Z522	95	Very hefty build for the price helps deliver a solid sound with good authority and drive	60	16		●			220
R	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
	Sound Style Select	95	OK but not as good as its cheaper brother the Z522	59	16, 17		●			202
	Target HM60	106	A solid and well-built stand laid-back to the point of coma	40-70	16.5, 19		●			202
R	Towshend Seismic Sink	499	Unique inflatable plinth that works well with decent floorstanders as well as standmounted speakers	4	38, 48					202

# TUNERS

## ANALOGUE TUNERS



### SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	WAVEBANDS	PRESETS	RDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT TUNING KNOB	ISSUE NUMBER
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	Cyrus FM7.5	400	Beautifully made and presented, with sound that's a small but worthwhile advance over budget models	FM	7			●	●	211
BB	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-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM,M	40	●			●	184
	Magnum Dynalab FT11	499	All-analogue tuner: receives weak or tightly packed stations but loses out on noise and sonic neutrality	FM	3			●	●	184
BB	Harman Kardon TU940	179	Good sound and particularly good signal recovery under tricky reception conditions	FM, M	30	●		●	●	221
	Leak Trough Line - GTA	300	A renovated classic with a style all of its own coupled with an emotive and gutsy performance	FM	0			●	●	206
	Linn Pekin	545	Smart and high-tech tuner which integrates well with Linn systems but offers less appealing performance out of that context	FM, M	80		●			211
R	Linn Kremlin	2,600	Controversially good sound at a very high price	FM, M	80		●	●		142
	Marantz ST-17	600	Great looks, but sound let down by opaqueness due to pilot-tone breakthrough	FM, M, L	60	●			●	221
BB	Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM,M	60	●				184
BB	Marantz ST6000	180	Another budget killer from Marantz, with sound well above its class and useful features	FM, M, L	90	●		●		211
R	Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29		●			193
	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
	NAD C440	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM,M	30	●				193
	Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM,M	40	●		●	●	166
	Roksan Caspian	595	Neat fascia with great ergonomics, but sound is not really any better than models at half the price	FM	50		●	●	●	184
	Sony ST-SE500	140	A lot of features for the money, but sound lacks detail and has some coloration	FM,M,L	30	●		●	●	193
	Roksan Kandy KT-1	375	Well made but sound is a bit lacklustre and lags behind some budget models	FM, M, L		●				211
	Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM,M	20					166
R	Sony ST-SE570	130	Good honest budget tuner: loads of features, just a trifle bland	FM, M, L	30	●		●	●	221
	Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM,M,L	30			●	●	157
R	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
	Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM,M	59	●	●	●	●	157

## DIGITAL TUNERS

STATUS	PRODUCT	£	COMMENTS	WAVEBANDS	PRESETS	RDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT TUNING KNOB	ISSUE NUMBER
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	Arcam DT-81	650	A very smart and polished DAB performer	DAB	16		●	●	●	221
	Arcam FMJ DT26	1,000	Metal-cased version of the Alpha 10 DAB, not so competitive now DAB prices are dropping	DAB	7		●	●	●	211
	Symbol C-DAB 1	1,000	The first 'high-end' DAB tuner, although format is the ultimate limitation. Gorgeous finish	DAB	8		●	●	●	199
	Psion Wavefinder	299	Bizarre-looking DAB tuner that requires a powerful PC to operate - great gadget, sound variable	DAB			●	●		211
	Radi DAB-606	199	Nice price, odd product. Awful to use and sounds rather gutless	DAB	30		●	●		221
	Sony ST-D777ES	550	Smart and useful with DAB and FM in one box, but neither band really shines	DAB, FM, M, L	99		●	●	●	211
R	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
BB	VideoLogic DRX-601E	300	Cheapest DAB tuner to date, and concedes little if anything to dearer models	DAB	10		●	●	●	211
	VideoLogic DRX-601ES	349	Tweaked version of 601E with modified frequency response: a matter of taste	DAB	10		●	●	●	221

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Choose a piece of vocal music that has a bright edginess to the voice. Listen to a short passage (about 5 seconds), reverse the cable under test and repeat the passage. You will hear that in one direction the sound is brighter, nastier, edgier etc., whilst the other way it is smoother, sweeter, cleaner and with better bass.

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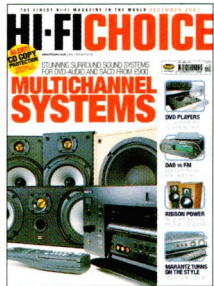
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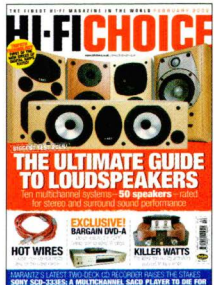
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# NEXT MONTH...

## ULTIMATE CD PLAYERS

Don't miss our unbeatable CD bench test as we blind-audition and lab-test ten of the latest high-quality CD players. We rate Arcam's new CD23T, Cyrus's new CD7Q, and the mighty Marantz CD-17 MkII Kl in one big shoot-out, guaranteed to separate the big guns from the bandits. If you're thinking of buying a CD player in 2002 this is an unmissable guide to sonic nirvana.

## BEST OF BRITISH

Need new loudspeakers for that cheeky second system? Want to knowledgeably recommend the best starter speakers to your hi-fi virgin mates? Then read our best of British loudspeakers guide where we fire up the nation's finest to guide you towards the greatest boxes in the UK. All the big boys will be there; B&W, Tannoy, Wharfedale, Mission... what a way to start a new love affair.

## BUYER'S BIBLE - AMPLIFIERS

The essential guide to buying a new two-channel amp. Our comprehensive guide takes you through the entire price range from entry-level to aspirational, and shows you around a few of our personal favourites.

## PLUS

High-end heaven – Pioneer's DVD-747A, DVD-A and SACD combined in what could prove to be the best all-rounder money can buy. Red Rose's latest £3,000 Passion integrated amp. Pink Triangle's triumphant return to form with its new £4,000 integral amplifier.

## HFC 226 ON SALE 22ND FEBRUARY



# Hot wire your hi-fi

PAUL MESSENGER CONSIDERS DIY ALTERNATIVES TO THE STEREO VS SURROUND DEBATE.

**W**hat with the rapid growth of AV/movie sound, the steady spread of music on DVD-Video programming, and the recent arrival of the new SACD and DVD-Audio formats, multi-channel – as distinct from traditional two-channel stereo – sound seems increasingly likely to become an important part of the hi-fi agenda.

Mind you, there's still room for a scepticism that was originally forged way back in the quadraphonic 1970s. Although I'll happily go along with the notions that proper multi-channel surround sound music is a desirable ideal, and that the success of the new 'high band' SACD and/or DVD-Audio formats would be very good for the specialist hi-fi cause, I'm far from convinced that the combination of the two has got what it takes to become a genuine mass-market music format – never mind the natural inheritor of the CD mantle.

My worry is that the multichannel music future will instead use sub-CD quality, data-reduced digital formats like DTS and Dolby Digital, because such discs will play on all DVD-Video players, and carry moving pictures too. A quick glance at the browser racks down your local software megastore will show just how rapidly such music on DVD-V is growing.

One possible silver lining might well be that our existing stereo formats – on CD and vinyl – will continue, and might well remain the 'best quality' option for the foreseeable future. Whether we'll continue to enjoy them in straight two-channel form, however, is perhaps a more open question, in an era where multi-channel is threatening to become the norm.

We're accustomed to thinking of stereo as an exclusively two-channel medium, but synthesising the extra surround

channels from stereo sources can offer interesting possibilities. This might lack the authenticity of a true multi-channel approach, but it can still 'open up' the soundstage and somehow 'override' or 'cancel out' the acoustics of the listening room in a very impressive way.

Speaking as a hi-fi purist, the trick is to find a way of adding extra synthesised surround channels without compromising the straight stereo system in any way. I wouldn't, for

**"I WOULDN'T EVEN CONTEMPLATE FEEDING MY PRECIOUS STEREO SIGNALS THROUGH COMPLEX SIGNAL PROCESSING CIRCUITRY."**

example, even contemplate feeding my precious stereo signals through complex signal processing circuitry.

Rather, I'd look for a way to leave the regular stereo system as untouched as possible. The ideal is to use a pair of 'pre-out' sockets on the stereo amp as the source for some sort of processor, which derives and drives just the surround channels.

## SURROUND YOURSELF

The oldest synthesised surround sound proposition, dating back to the early 1970s, is the so-called Hafler circuit (named after US hi-fi guru David Hafler). In its simplest form a couple of small loudspeakers are placed to the side and/or behind the listening seat, hooked up in series, with the negative speaker terminals connected to each other, and each positive speaker terminal connected to each positive terminal of your amplifier (the stereo difference signal).

This is hardly a 'minimal intrusion' approach, but numerous other Hafler variations are possible: if your main stereo amp has a pair of 'pre-out' sockets, feed these to a second (cheapo)

amplifier just to drive the Hafler speakers. For more on Hafler etc, check out the Elliott Sound Products website at <http://sound.westhost.com/project18.htm>.

The current Richer Sounds advertisements list a Pro-Logic AV amp for under £100, so using such a device just to derive and power two surround channels, again fed from 'pre-out' sockets, would be a very cost-effective solution.

However, the most interesting

surround device I've yet encountered is Dynavector's ADP-2 SuperStereo processor, deliberately aimed at providing audiophiles with a 'beyond stereo' experience, and which I hope I'll get a chance to review properly soon. Selling for £795, this 'black box' is consciously 'non-intrusive', accepting signal feeds at either line ('pre-out') or speaker levels, and incorporating modest amplification to power the two surround speakers.

Dynavector has spent years refining its SuperStereo processing, a relatively complex system which applies varying time delays according to spectral content. When used as directed it's extraordinarily convincing in the way it simulates a generous and spacious acoustic, without in any way interfering with the front soundstage or the musical precision. The end result simply sounds more natural and 'right' than regular two-channel stereo, especially when used with tightly focusing main speakers.

*Dynavector (SuperStereo), PO Box 3731, Poole, Dorset BH13 6YE. ☎ 01202 767873*

**Paul Messenger is Hi-Fi Choice's resident speaker guru and Consultant Editor, if it moves air he's heard it.**



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