NEW GOLD DREAM
We test the Marantz SA-12S1
SACD player/DVD-video

plus
- Mission m52 speakers
- Hegel H2/P2 pre & power amps
- Linn Adiktt cartridge
- Sony MDS-JE480 MiniDisc recorder
- NAD C320BEE integrated amp
- Mordaunt-Short 912 speakers
- Musical Fidelity A308 integrated amplifier
- Malaysia 2002 A/V show report

COMPETITION
We've five pairs of Quad 11L loudspeakers to give away in our superb competition

- Computer Audio World
- CDs & PCs - Part 1 of our CD copycoding feature
- Aopen's audiophile AX4B-533 Tube Motherboard

+ 100s of classified ads full of secondhand bargains!!!
“Sets a new standard at the price”
- Hi-Fi World (August 2002)

“The scale and authority of their performance is breathtaking”
- What Hi-Fi? (August 2002)
Sitting down for a quick tinkle of the ivories before dinner recently (even with me at the keys it beats Eastenders) it occurred to me that our piano has had its day, a fact confirmed by the last tuner who tried to knock the knocked heap into some kind of music making device, as opposed to an accident in a removals van. Not possible, unfortunately: we have to accept that it's destined for the nearest public bar in town, due to too many years in front of a piping hot radiator. This means we have to look for another, which raised a bit of a problem because I didn't know where to start. I knew we ideally wanted something decent, upright and German (the Chancellor, perhaps!) and expected anything in this category would be well out of our humble price range and we'd have to set our sights much lower. The equivalent of auditioning an AudioNote Ongaku and ending up with a budget solid-state model.

However, after making a few tentative and basic enquiries I was pleasantly surprised, not to say shocked, to find out that a pukka refurbished Blüthner upright (one of the 'big four' German piano manufacturers) would cost roughly the same as a decent, not too expensive, off-the-shelf high-end amp. To many, the price of a new piano is with me. Those that get rather blasé about it all, forgetting that to many this is a seriously important purchase - just as a new piano is with me. This is a transitory toy in comparison. Surely in this respect hi-fi is then a bit of a rip off?

I get to listen to the best hi-fi available whenever I want and even though I obviously still get excited by certain equipment one can get rather blasé about it all, forgetting that to many this is a seriously important purchase - just as a new piano is with me. Those that demand an often unnecessary premium for audio electronics maybe ought to take a peek in a German piano factory for a reality check!
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This is Marantz’s high end SACD player that also doubles as a top DVD-video source. Read David Price’s verdict in our comprehensive review.

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Hi-fi.

Spare yourself the frenzied riot as you struggle with the hordes to claim the last copy of Hi-Fi World in the newsagent - Subscribe today!

This month we have five pairs of superb Quad 11L loudspeakers up for grabs.

Andy Giles returns to the HFW fold with his choice of Shostakovich's 5th symphony on disc.

This month it's the turn of the 'budget' Linn Basik turntable.

Thinking of an upgrade or even a new system? Here's where to find our recommendations from the mass of hi-fi we've reviewed.

Valves in computers! You bet! We try out one of the most interesting audiophile products to hit the computer market this year.
**NAD’S ONE FOR ALL**

With the launch of the L70 from NAD, the company hope to combine the convenience of a compact all-in-one AV solution with the sound quality of their full-size separates range. Finished in a 'titanium' hue, the L70 consists of a DVD/CD player and digital surround receiver in the same chassis, needing only a TV and 'speakers to complete a full surround-sound home system. The L70 comes with an HTR-2 remote control that can operate any component due to its learning ability.

As with all NAD products, the L70 uses discrete output stages, even in the surround channels and the company claim they use audiophile components inside. Three additional video sources can be connected to the L70, as well as a six channel audio source. Two S-Video connections are available. There are also two digital inputs (optical and coaxial) and an optical digital output. Price is yet to be confirmed but following company tradition, you won't need a second mortgage!

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**CHORD’S MULTI-TALENTED TITAN**

Chord Electronics are the latest high-end specialist to enter the multi-channel market. Their new DSP8000 AV processor sees its official launch at the London AV Expo show at Heathrow in September. Home theatre enthusiasts will be greeted by a fully specified 7.1 processor that includes the latest Motorola S6367 DSP chips and will cover formats such as Dolby Digital Ex, Pro Logic II, DTS & DTS ES, NEO:6 as well as many music modes and features the Chord Cinema Equalisation (CEQ). On the audiophile front, the DSP 8000 can run a fully balanced signal and using the fitted analogue ALPS volume control, can run straight into a power amplifier by bypassing all the digital circuits. Budget conscious buyers may well have to look elsewhere; the DSP is expected to sell for a pretty substantial £9,995. It comes complete with a top quality learning remote and every one will be hand-built to order.
**STRONG MIDRANGE FROM ARCAM**

Arcam are set to release their latest CD player, the CD82. The addition of the player strengthens the company's midrange line up of products and represents the midway point between the CD72T and the CD92T. The new board in the 82 uses much of the filtering and DAC technology from the top line of source products in the FMJ range. The transport is a Sony design which supports CD-R and CD-RW as well as CD text, twin stereo DACs are Wolfson 24/192 devices (as featured throughout the DiVA range) and - in the Arcam tradition - the 82 is upgradeable from the CD72T and upgradeable up to CD92T specification. Priced at £599.99, the CD82 is available from September.

**QUAKE, RATTLE AND ROLL-OFF**

The bass experts at REL Acoustics have been beavering away at a new design that they hope will combine excellent performance from an interior-friendly proportioned cabinet. The new Quake subwoofer - measuring a diminutive 294x253x272 mm (hwd) - has gone through intense R&D testing to ensure standards of quality and reliability.

The Quake is a closed box design which uses the optimised coupling of a long throw 8” driver with a 100W MOSFET amplifier. The electronics in the Quake are of high quality and feature a military spec FR4 PCB using plated-through holes and a hefty toroidal transformer. Although being modestly priced, the Quake features REL's usual buffered ABC filtering for improved integration and a Neutrik input for the high frequency input and phono sockets for low. There's also a choice of slam/depth settings and a PC compatible input for connection to computer sound systems. Prices are £350 for Brittex Black and £425 for Cherry real wood veneer.

**THREE-WAY FOR FOUR**

From California comes NHT's latest flagship model in the Super Audio range. In true NHT value for money style, the three-way ST4 features eight layers of piano black lacquer in the finish. Based on the previous NHT SuperTwo, the ST4 builds on the original's design but utilises larger drivers and an 8” long throw, side firing bass unit that the company claim can reach down to 31Hz. Finished only in black lacquer the ST4 is priced at £1,119 per pair.

**LAST MONTH**

In last month's review of the TDK Tremor S80 review we printed the NXT contact details but not details for TDK. Thanks to the superb review, NXT have been swamped with enquiries but unfortunately cannot deal with them. Therefore anyone interested should contact TDK direct. Details are:

**QUAD 21L**

Following the great success of the company's stunning 11L bookshelf model, its two-way floorstanding bigger brother arrives for perusal. Find out what we think next month.

**DENON DVD-3800**

This £1,000 heavyweight DVD-A player from the Japanese giant promises audiophile class playback with technology filtered own form the flagship DVD-A1. Read our review in four weeks.

**UNISON RESEARCH UNICO DM POWER AMP**

This sleek but well built power amp from Italy offers 150W of muscle from a valve/Mosfet hybrid design for £1,250. Discover how it fares with the competition in the next issue.

**next issue**

Here's a small selection of what we hope to bring you in next month's issue:

- **QUAD 21L**
- **DENON DVD-3800**
- **UNISON RESEARCH UNICO DM POWER AMP**
The new Schonberg series by Vienna Acoustics

Breathtaking beauty in an ordinary world

Distributed by: Henley Designs, 01235 511166, www.henleydesigns.co.uk, info@henleydesigns.co.uk

World Radio History
With SACD, CD and DVD video capability, Marantz's brand new SA-12S1 attempts to be all things to all people. David Price, for one, is impressed.

After the stereophonic splendour of the SA-1 - Marantz’s first SACD player launched some eighteen months ago - comes the multi-talented, multimedia, multi-channel SA-12. This little beauty not only plays ye olde Red Book CDs and SACDs (of both the stereo and multichannel variety) but DVD video discs (in Dolby Digital 5.1 and DTS formats, plus the practically obsolete 24/96 ‘digital audio disc’) too.

At ‘just’ £3,499 the new SA-12 is a lot cheaper than the first born’, and does offer the indisputable boon of playing multichannel music discs. And you don’t even have to watch pictures, for it has a ‘Video Off’ button. Play an SACD without the aforesaid jab with your leading digit and it sounds brash and mushy, but give it a stab and things are radically, err, well, read on to find out!

First, let’s subject this machine to close inspection. At 458x126x379mm it’s pretty big, and is very nicely finished in the company’s ‘trad’ champagne gold. Of course, there’s remote control and the handset is a good one.

Look inside and things are decidedly crowded. This is in no small part due to the fitment of no less than twelve professional grade Crystal CS4397 DACs (six channels, working in dual differential mode). Curiously, these can perform both DSD (i.e. SACD) digital to analogue conversion and 24/192 PCM (i.e. DVD-A), but the SA-12 of course only plays SACDs. With most - if not all - of the hardware present to play DVD Audio, the fact that this machine doesn’t must surely be down to marketing? Marantz was recently part of Philips, supporters of SACD. Ironically, they’ve recently allied themselves with Denon, so is DVD-A next?

The SA-12 also gets ‘the works’ Marantz treatment, which includes twelve proprietary HDAM copper plated op-amps working in dual differential configuration, the company’s own Super-Ring toroidal transformer with a separate transformer for the fluorescent display, and the usual ‘hand selected’ passive components (which Ken Ishiwata has doubtless individually auditioned). There’s also OFC wiring between circuit boards, which are themselves shielded, copper grounded and multi-layered for good measure. Oh, and don’t forget the ‘ultra low jitter’ master clock!

The chunky front panel is a tastefully spacious affair, the company avoiding the opportunity to festoon the machine with gadgets and gizmos. Aside from the transport controls, the aforementioned Video Off button joins Display Off and Sound Mode buttons as being the only things worth pressing.

Round the back this player is pretty Spartan, with just two SCARTs, S-Video and Composite video outs, plus coaxial and optical digital outs (neither of which output DSD - just PCM), plus a 5.1 channel analogue audio out (via widely spaced gold plated RCA phono's) and a humble stereo pair of analogue line outs.

Not being overburdened with facilities, the SA-12 is pretty straightforward to use. Perhaps the most interesting feature is its configurable digital filter, which offers a choice of...
three settings: Standard All (where each speaker has a 40kHz cut-off to remove ultrasonic content), Custom ST (where all front speakers are cut off at 50kHz while the surrounds and subwoofer get 40 kHz filtering), and Custom All (where all speakers are rolled off above 50kHz). Some will be frustrated by its lack of bass management for anything except Dolby Digital discs, where a 120Hz crossover is offered for small speakers.

The player's digital output can be switched off, or set to output only PCM (for stereo CD and DVD video output), or to include DD/DT. Press the drawer open button and the tray whirs out. Disappointingly it feels nowhere near as svelte as Linn's CD 12 (but then again, that does cost as much as a Ford Mondeo). Feed it a disc, and then wait as it loads up, has a little think and then says 'READ'.

The Marantz then displays the number of channels it's found (i.e. 5.1 or 2.0, DSD or PCM). Then you wait a little while longer before it starts to play. In this respect at least, we've gone backwards - I can take an LP out of its sleeve and cue it up before your average 2002 silver disc player cuts to the thrust of things.

Notwithstanding the aforementioned lack of DVD-Audio, this player has a wide repertoire of things it can play. In addition to the obvious (multi or two channel SACD), stereo CD, CD-R/RW and DVD video in all its various guises (including 24/96 two channel PCM, Dolby Digital 5.1 and Dolby ProLogic), the SA-12 will read VCD 2.0 and SVCD. Curiously though, although it will read DTS audio discs (like any CD player with a digital output), it will not decode them. Quite why this is, is anyone's guess? Does Marantz assume we've all got decoder boxes, or AV receivers, or that we simply aren't interested in DTS!

**SOUND QUALITY**

First - as the amount of CDs in circulation outnumbers SACDs by around a billion to one - I kicked off with ye olde fashioned 16/44 PCM Compact Disc. Compared to my reference 'battleship' Sony CDP-X77ES, it put in an impressive - if not flawless - performance. Essentially, it's very smooth, almost to the extent that the high treble sounds a little rolled off. There's an obvious 'softness' to its high frequencies (on CD) that deprives music of just a 'softness' to its high frequencies (on CD) that deprives music of just a little bite. While the cymbals on Alphonze Mouzon's 'By All Means', the trumpets rasped but were impressively sweet (very Japanese high end sounding - the sonic equivalent of gold taps in your bathroom), I wasn't completely convinced that the SA-12 was being accurate.

Anyway, going down a few octaves into the midband, I found myself most impressed. Once again, tonally it's a pleasantly warm and luxurious experience, with a usefully varied tonal palette and the ability to tell you all about the texture of the instruments playing. In the case of 'By All Means', the trumpets rasped but never sounded coarse. Female vocals were no less of a treat, with a silky, creamy, dark-chocolatey feel that made the SA-12 a joy with 'dinner jazz' (if you pardon the expression).

Despite all this sweetness and warmth, the Marantz could really cut a rhythm. It comprehensively outclassed the Sony in the way it could string a drum track together - percussion really assumed a life of its own, and you could hear a wealth of subtle detailing that the reference CD spinner simply chose to overlook. It this respect, it reminded me of the old Linn Karik 3, which could spot a rhythm at a hundred paces, blindfolded and in the dark. It proved superb at letting different instruments play along together, each having a life - and a rhythm - of its own. Rather than just throwing out masses of detail, like the Sony, this player put it into perspective too.

Down in the bass, things both surprised and disappointed. Its boogie loving character didn't desert it with K-Klass's 'Rhythm is a Mystery' - the bass line proved brilliantly tuneful and articulate, making things a joy. However, it wasn't quite as deep or muscular as the Sony, sounding just a touch soft (as in the treble) and curtailed. To Marantz's credit, it hasn't given us a 'hi-fi sounding player - it's smooth and beguiling and involving and emotionally articulate. By contrast - the Sony sounded like someone has pressed an imaginary 'loudness' button - a little more impressive but rather less musical.

Feed it an SACD and the theme continues. I kicked off with The Human League's 'Dare', which proved a real eyebrow raiser. In one sense it was actually an anti-climax, because it didn't add massive amounts of bass, or vast tracts of extra high frequency information. What it did do, however, was completely dissolve away all the CD 'nasties' that you get used to from 16/44 PCM. The big shocker was the midband, which became beautifully subtle and clear. The sounds of all those classic analogue synths (Rolands, Korgs, etc.) switched from being fizzy and upfront to deliciously full and sonorous - you could hear all those harmonics, giving a lush, vibrant sound.

Nicer still were the vocal tracks, which were totally transmogrified with the move to SACD. Phil Oakey's deadpan 'singing' became more believable and lifelike, whereas the female backing tracks assumed real richness and depth.

Despite this being a humble 2.0 (i.e. stereo, in old money) disc, imaging was superb. It's funny how standard CD makes the soundstage sound so flat, compressed and vague.
Suddenly with SACD you get a real sense of where the different instruments and vocals are placed in the mix, not just from left to right but forward and back. In CD mode, the SA-12's imaging sounds just a tad too reined in - the soundstage isn't as big as the Sony's - but via SACD it becomes one enormous 3D 'walk around' experience.

Jacintha's 'Autumn Leaves' showed this player in its very best light. Vocals were sublime - beautifully smooth and sweet yet clear as day - suddenly SACD makes the SA-12 sound really big. Out of the midband, bass was deep (much more so than CD) and warm, yet extremely tuneful. Ultimately I'd say I've heard better bass from an SME V equipped super turntable, but there's a cleanliness and crispness here that makes it a joy to listen to. By contrast, vinyl seems more hit-and-miss, as it all depends on the disc's mastering and pressing.

Treble was again a joy, but not in the way you expect from a format with a massive bandwidth like SACD. Most of the extra high frequency energy seems to be working its 'mojo' far further down the scale, investing the midband with all those rich lustrous harmonics. By contrast, cymbals sounded just a touch too soft and closed in - maybe this is the lack of digital distortion caused by CD or DVD's brickwall filtering, or maybe it's the design of the player? Suffice to say, I've heard better air and space from a decent moving coil cartridge.

The overall SACD effect is a deeply enjoyable one, and - I must say - far better than 'budget' SACD spinners like Sony's SCD-555ES or indeed Pioneer's DV-747A (which also does DVD-Audio, of course).

Here is a machine that really gets into the 'soul' of what Super Audio Compact Disc is about - it can really communicate a mood, a feeling, a sense - in the way that no DVD-A player has been able to so far. By contrast, 24/192 PCM sounds a little mechanical and workmanlike. It will amaze you with its hi-fi potential (great bass, soaring treble) alright, but SACD done proper is a different kettle of fish. The key is musicality, it's about conveying all those tiny, subtle flavours and hues that PCM seems to simply gloss over. This is what makes vinyl such a joy, and a bit of it has rubbed off on SACD too.

Ultimately, the SA-12 is not as awe-inspiringly brilliant at either CD or SACD playback as its SA-1 bigger brother. Marantz would doubtless say it was never meant to be. The point is that it offers four fifths of the former's performance at about three fifths of its price - and plays DVD videos pretty well to boot. It's a great machine and comes recommended with both thumbs firmly aloft.

My only criticism is a political one - why does this machine not do DVD-Audio too? Aside from the various sound quality arguments, there is a wealth of stuff being re-issued on this new format, and having an SACD-only machine simply cuts you off from it. Still, if you think SACD is the format for you for some particular reason (whatever it may be), then this is superb value.

Marantz SA-12SI £3,499
Marantz UK Ltd.
Tel: 01753 680868
www.marantz.com

**MEASURED PERFORMANCE**

As David has pointed out, Marantz's first multichannel SACD player makes extensive use of Philips' SACD-1000 as the bedrock of its design. Distortion is fractionally higher than that observed with Philips' donor player (0.001% vs 0.0006% at 1kHz/0dBFS) but this is just as likely due to production spread as any significant difference in implementation. At the frequency extremes, distortion is a little higher still at 0.0025% (20Hz) and 0.0085% (20kHz) but, importantly, is maintained at a low 0.005% through the midrange down to -30dBFS.

SACD has a wider bandwidth and with frequencies as high as 50kHz, distortion-noise is close to 0.05%, although this largely attributed to the swell of ultrasonic requantisation noise inherent in DSD encoding. Only within the audioband itself is the S/N ratio held open to 113.7dB. To emphasise the wider response of SACD, I have plotted both CD and SACD traces on a <linear> frequency axis, which also demonstrates the action of Marantz's 'Standard' filter setting. By contrast, DVD-A and universal SACD/DVD-A players typically have a far flatter response out to 90kHz+

The digital filter built into Crystal's CS4397 DACs offers a superb 110dB rejection of digital images while both the crystal clock accuracy of +13ppm and very low 160psec jitter pay testament to Marantz's claims of separate video/audio master clocks. Linearity is good to +0.0/-0.4dB at -90dBFS with 16bit CD and +/-0.5dB at -110dBFS and +/-1dB at -120dBFS with SACD. Overall then, a fairly standard set of results for a 1st generation multichannel SACD player.

**Frequency Response:** <5Hz - 1.3kHz (CD); <5Hz-2kHz (SACD)

**Distortion** Left Right -6dBFS 0.0013% 0.0010% -30dBFS 0.0054% 0.0053% -60dBFS 0.162% 0.142% -90dBFS 2.95% 2.80%

**Separation**

1kHz 125dB 128dB 20kHz 100dB 102dB

**Noise (IEC A)** -113.7dB -113.7dB

**Output** 2.05V 2.05V
Hegel Music Systems avows to make products that are as "pleasing to the eye as to a music lover's ear". David Price grapples with the intricacies of its high-end H2/P2 pre-power amplifier combination.

Like fast cars, high fashion and fine wines, there is a strong whiff of pretension in high end hi-fi. After all, anyone asked to part with large amounts of their hard earned (or ill gotten) cash has to dwell under the apprehension that they're buying into something uniquely special, significant and even spiritual. In the case of audio, how else could they be persuaded to part with large sums for a box of transistors, diodes, capacitors and resistors, a good deal of air and a few yards of wire?

This is nothing new of course; 'twas ever thus the way. Linn Products and Naim Audio did more to make hi-fi 'mystical' and 'magical' than any dealer, reviewer or punter ever could. Back in the seventies, prospective purchasers of these companies' fine wares were given more than just a sales pitch, but something closer to a philosophy lesson. It was politely explained to them 'how' they should listen, rather than what they should listen for. This was heady stuff for selling something that dragged a bit of coal around a rotating piece of pressed black plastic - but it worked!

That a high-end Norwegian hi-fi specialist has chosen the name Hegel rather continues this theme. Is it an allusion to the similarly monikered Georg Wilhelm Friedrich Hegel (1770-1831), who was one of the foremost proponents of the 'German Idealist' school? Whatever, the company certainly has an attitude. The company contends that, "it is with music reproduction, as with food, artificial additives are added". By implication, its P2/H2 pre-power combination lets you savour the original flavour. Together the combo costs £3,795 (separately the P2 is £1,495, the H2 £2,495), which is indeed a lot of money for the pleasure of being able to "relax, energise, create".

The P2 preamplifier is the epitome of 21st century high end practice. Lavishly finished with a particularly nice brushed metal surround for its 60x430x300mm box, the sparse front panel declares its 'minimalism' in no uncertain terms. Three controls take care of volume (also available on the remote), input selection and power on/off. Six sources are available, one of which can accept phono cartridges with the addition of an additional module. Round the back we see a host of balanced XLR socketry - plus the usual RCA phono sockets.

The H2 power amplifier is a vast 120x430x370mm behemoth boasting 150W per side into 8 ohms. Dual mono construction is used, complete with a huge toroidal transformer that accounts for much of its 20kg mass. The smooth front panel is disturbed only by a single power switch (and the inevitable blue LED), whereas the rear deck is crowded with double gold-plated Lexan binding posts for both channels, balanced XLR and coaxial phono input sockets. Externally it lacks the P2's brushed metal finish, but it's still an attractively purposeful design and a fine visual match for its preamp. My only quibble is that the H2 gets so hot in daily use that I wonder if sitting the preamp on top is a good idea?

I hooked up the power amp to my reference system first, using my usual World Audio Design KLP-P1 (with Panasonic volume pot) to drive it. The H2 powered my Yamaha NS1000M loudspeakers brilliantly - I
wouldn't doubt the rated power output for a moment! From cold it was sterile and 'grey' sounding. Within several hours however, the Hegel began to charm, to the point that after a day or two my system was sounding so good I didn't want to change a thing. Essentially, the H2 is extremely clean and smooth, without any of the usual transistor hardness you get from solid-state power amps. It's impressively able to distinguish between the different tonal 'flavours' of various instruments - you can really get a great sense of their 'grain', or patina. Few transistor amps at any price do this, so I was most impressed.

This isn't the Hegel's only party trick however, because in addition to its textural delights it has oodles of good old fashioned, unreconstructed welly - plus the ability to deploy all that power in a highly musical way. The result is that you get a brilliantly transparent amplifier that can boogie with the best of them.

Bass is strong, tuneful and grippy - unlike many powerhouses, it doesn't run half a hour behind the midband. The Rolling Stones' 'Start Me Up' was a joy, the H2 able to communicate the supreme rhythmic subtleties of the song (with Charlie Watts coming in just a little late on the beat), yet signpost every last detail of the recording studio acoustic. Jaggar's edgy voice was brilliantly carried without a sign of harshness - proof positive of this amp's brilliant midband. Likewise, that deliciously insouciant cymbal work sounded sublime - with hi hats crisp as an autumn morning and smooth as Irish Cream. I was extremely happy with the H2.

The problem came when I wired in the P2 preamplifier, which proved a rather less joyous performer. True, it got better as it got warmer, but even after a few days of running, it was still shutting in the soundstage quite noticeably. It was as if the Hegel had imprisoned the soundstage inside metal bars - you could still see inside, but it couldn't get out to you. With Nirvana's 'Come As You Are' there was a good deal of detail and no particular tonal nasties but still got the impression that the band was going through the motions.

Classical music was less revealing of this, letting you focus on the Hegel combo's good sense of scale and strong stereo imaging, but there was still a degree of 'downsizing' thanks to the P2. Pull it out and substitute a Creek passive preamp, and you'd get all the fireworks back.

Ultimately then, I can't recommend this £3,795 combo as good value for money because the P2 pulls it down. However, the H2 at £2,495 is a different kettle of fish completely. It's an excellent candidate for those who've already got their preamp issue solved, and want a genuinely musical and subtle power amplifier that also happens to wear a particularly large pair of steel-toecapped boots.

Hegel H2 Amplifier £2,495
Hegel P2 Pre-Amplifier £1,495
Audio Atmosphere
29 Drake Avenue
Penkridge
Staffs ST19 5JA
Tel: 01785 711232
www.hegel.com

MEASURED PERFORMANCE

Producing 153W into 8ohms and 272W into 4ohms the Hegel has some clout. It runs hot so the quiescent current is likely high, suggesting the amp runs to useful power in Class A. Certainly distortion measurement looked good at low levels and there was little deterioration in the figures when more current was drawn by a low 4ohm load. The Hegel was relatively unfazed by power and distortion tests, producing around 0.005% distortion at low levels, some of which comes from the test generator. At high frequencies distortion rose to around 0.017% maximum, a low value, although one that can be bettered, by high feedback MOSFET amps.

The power amp had an input sensitivity of 800mV and the pre-amp a gain of x2, so input sensitivity was 400mV Noise was low and channel separation good at 94dB.

The Hegel is powerful, has good supply regulation and low distortion. It was tolerant of low loads and looks capable all round. NK

World Verdict

Hegel H2 Power Amplifier
Superb all round performer with loads and power and real musicality.

Hegel P2 Pre-Amplifier
Crisp, clean and well built, but not transparent sounding enough to justify its hefty price tag.
Ten years after it hit Japanese shops, MiniDisc is still spinning. David Price examines the latest example of the art, in the shape of Sony’s brand new MDS-JE480.

Although many of us think of MD as a fairly new phenomenon, it’s now as old as CD was when MD was born back in 1992! The difference is that, while CD sales continue to grow strongly after its tenth birthday, MiniDisc is now very much on the downward slope. I doubt Sony will kill it for a while yet because after all, it is the company’s pet format. What’s more, MD is still immensely popular in its home market of Japan as a recording format where, for various reasons, cassette was never particularly big. All the same it is reaching the ‘autumn’ of its days as later, more advanced technologies like Blue Ray loom.

As with its long lost rival DCC, which MD sent well and truly packing some five years back, it’s obvious that the longer the time available to develop a format, the better it gets. To be brutally frank, early Sony MiniDisc machines were pretty tragic sounding, and it was only the advent of ATRAC4 in 1997 (okay trainspotters, you may have a case for arguing ATRAC 3.5 in 1996) that things started to sound vaguely musical. Before that, dare I say it, fans of the dinky disc had to suffer a crude and mechanical sound that continues today in Sony’s MS Walkman digital audio players.

The MDS-JE480 is a typical ‘late period’ hi-fi MiniDisc recorder. It’s cheap at £129 and obviously built down to a price, but is packed with clever features (which make the format far more flexible than it was when first released), plus the all-important latest ATRAC chip. This is called DSP Type R and is effectively the ‘fifth generation’ codec that first appeared on the MDS-JB930QS some two years back. Eagle-eyed types will notice the presence of ATRAC3, which is used for the machine’s Long Play mode.

In truth, it takes more than a good codec to make MD sound the part. The high end MDS-JE555ES was a stonking performer thanks to the classic tenets of audio engineering, serious power supplies, high quality passive components, etc., so the cheapo 480’s sonics are unlikely to set the world on fire, but could still be a pleasant surprise.

More pertinently for the type of buyer Sony’s aiming for with this one are its PC Link terminal that let you do all your editing on your computer, as well as MD-LP recording offering up to 320 minutes of playing time from a single MD80 disc (with dramatically reduced quality, of course).

It also has Sony’s Time Machine Recording which stores all incoming signals in a buffer, so you can press record a couple of seconds after a programme has started and the deck will still record it (it’s like ESP Shock Protection in reverse). There is a pitch control (lots of musicians use MD for demo recording) and a sampling rate converter too.

Available in black or silver, MDS-JE480 is a neat looking machine alright, although quite small and light at 430x95x285mm and 3kg respectively. All the buttons are easy to use, and recording, editing and titling follow the usual Sony convention, meaning it’s a pleasure to live with. It works slickly alright, but inevitably (at this price) lacks the sense of quality of the metal fronted £250 MDS-JB940QS.

Sound quality isn’t half bad. Playing back discs recorded from the high-end MDS-JE555ES, the 480 sounds bright and punchy but with a decently smooth and couth demeanour. It’s also impressively musical, and really gets you into the
spirit of things. Frankly though, don’t expect miracles through its internal DACs, which aren’t the best at either frequency extreme. The sins are those of omission though, meaning bass is a little light and high treble a bit rolled off.

The MDS-JE480’s recording quality is good, but perhaps it’s a sign of the times that I’m not gobsmacked by this sort of quality from something costing under £130. Ten years ago an equivalently priced (say £99 in 1992 money) cassette deck wouldn’t have been a patch on this! Clean, smooth and detailed, only the removal of some ‘air and space’ signifies that this is compressed digital audio you’re listening to. There are no artefacts (1977 Electric Light Orchestra-style flangey effects to you and me) to be heard, just a slight slimming of the soundstage and shallowing of depth perspective. Neither is there a marked quality drop via the analogue inputs, so vinyl fans shouldn’t worry.

Perhaps the most impressive aspect of the Sony is the fact that if you plug it into an external DAC, the sound really grows in stature. It’s cleaner, more dynamic, more rhythmically coherent and you get the sense that you’re listening to something altogether more expensive. This means that costs have been cut in the DAC and analogue output stages. Owners of standalone DACs or digital recorders will be able to circumvent this at a stroke, which is handy!

A great performance at the price, then, the only qualm I have is that you’d be stupid not to splash out £100 more on the aforementioned MDS-JB940QS, which offers an even better price/performance package.

**MEASURED PERFORMANCE**

In contrast to linear CD, SACD and DVD-A players, the combination of data compression and reduction used in MiniDisc recorders fundamentally affects their measured performance. Simple recordings, lacking both bandwidth and complexity, invoke minimum levels of ATRAC compression and yield an idealised response (black) trace, possessing a gentle treble roll-off amounting to -0.9dB at 20kHz. On the other hand, highly complex, musically dense recordings typically saturate the bit pool available to ATRAC and encourage a progressively more ragged, band-limited response (red trace).

Simple, single-tone distortion measurements also show off the MDS-JE480 at its best because ATRAC is not taxed. Hence the low 0.001% distortion at -6dBFS and 0.13% at -60dBFS are testament more to the quality of Sony’s DACs, as is the merely adequate 94.5dB SN ratio. Incidentally, because of its 1.1kohm source impedance, the 2V peak output will be dependent on the amplifier’s input loading.

Jitter remains the biggest blot on the MDS-JE480’s copybook, however, with an inherent value of ~2300psec increasing to >19,000psec upon recording in stereo mode. Putting this in perspective, while this is high even for an MD recorder (where jitter is affected by the ATRAC block rate) a good budget CD player might suffer a mere 200psec of this same digital distortion.
Dominic Todd admires the latest model in the new generation Coda range from KEF, the new Coda 70.

Here is another budget 'speaker with a fantastic build quality and finish. Whatever you think of the politics involved, making a 'speaker in cheaper-labour markets, China in this case, appears to be having a beneficial effect upon product quality at a given price. Curiously, unlike KEF's more expensive QIs, the Coda 70s reviewed here are immaculately finished in a real wood veneer. The aluminium tweeter and treated pulp cone woofer aren't especially remarkable in themselves, but the die cast chassis that they share is a particularly neat and effective piece of design.

It's probably just as well that the woofer is die-cast and rigid, as it's held in place by only a single, rear mounted bolt! My concerns were further put to rest by the fact that the chassis is securely seated within the Medite baffle. Incidentally the entire cabinet is made from Medite and internally braced too.

Cabinet construction of this quality would have been in the realm of £500+ boxes just a few years ago. Memories of Coda 7s with 'detachable' front panels are now very much a thing of the past.

Apart from KEF's own Q1 'speakers, the Coda's face rivalry from a whole host of designs, my favourite of which is currently the Acoustic Energy EVO I (£180). Yet there are also some mighty impressive designs from B&W, Mission, Mordaunt Short and Tannoy.

The Codas got off to a good start with Tom Waits's 'All The World Is Green'. The vocals were extremely well pitched, being forward of the instrumentation and with good presence, yet without sounding too detached from the mix. The clarinet appeared to lose a little in texture and could sound just a shade bland, although this was probably emphasised by the particularly fine vocal rendition. The staging was fair, although certainly not as broad and spacious as that of the Coda's Q1 brothers. In what seems typical of this type of 'speaker these days, the bass response proved smooth and well damped. Although the bass didn't go especially deep, it was extremely well controlled and cohesive with the mid-range.

Finzi's 'Eclogue for Piano and Strings' was convincingly portrayed. Convincing because of the very good piano timbre and spacious acoustic accurately reproduced from the recording. Despite the aluminium tweeter and the associated harshness that they often bring about, the string tone was particularly sweet and refined. Furthermore, the sound was also fluent, thanks in part to what appears to be a decent crossover design and choice of driver materials.

The scale of the sound stage was good, although I did notice some compression and distortion setting in at slightly lower levels than with most rivals. The EVO 1s, for example, appear more capable of pumping out higher decibels for sustained periods of time. Really turn up the wick with the Codas and you'll quickly be wincing and reaching for the volume control. Their bass response isn't especially deep either, although the Codas are well aware of their limits here and never try to overstep them. Of more importance with classical music such as this is the involvement through timing and timbre that 'speakers can bring. In both these areas the KEF's really score, making them a good choice for classical.

Nelly Furtado's '... On The Radio' was a very different genre, yet one the Codas coped equally well with.
The sounded tight, cohesive and controlled, with a bass response that was especially well judged, being bouncy without overwhelming the rest of the mix. As with Tom Waits, the vocal balance was well maintained too. There was fine layering of vocals and instruments and foot tapping timing to boot. All in all, the Codas proved hard to fault here, with a balanced and even-handed approach that would be hard to knock.

One concern I had at this stage was that the KEFs may be just a little too smooth and refined for their own good. The Art of Noise’s ‘Born on a Sunday’ showed that this wasn’t the case. The tempo quickly spooled up, with the Codas confidently proving that they could do attack and fast transient response as well as any rival. Their lack of real bass depth paid dividends here, the upshot being a particularly tight and rhythmic bass timing. The balance was still refined in the sense that the treble didn’t become brittle or the bass boomy, yet not in the sense of damping the exuberance of the sound or making it seem recessed.

The KEF Coda 70s are one of the top players in their class. I would say that they are easily the best finished and one of the best looking ‘speakers at the price. No one is going to feel short-changed here. They give the impression of costing more than they do with a sonic character that’s impressively balanced and refined. Be it Classical, acoustic, or pop music, the Codas are an accurate and involving listen. One can thank a smooth frequency response and well-tailored bass damping here. Gripes include an inability to play at really high volumes without quickly resorting to compression and distortion and a lack of really deep bass. If either of these are a priority then you should perhaps be looking at floorstanders. As it is, the KEF Coda 70 stands out as one of the best ways to spend £200 on a pair of ‘speakers. An audition is highly recommended.

Kef Coda 70 £200
KEF Audio Ltd.
Tovil
Maidstone
Kent ME15 6QP
Tel: 01622 672261
www.kef.com

MEASURED PERFORMANCE

With well integrated drive units, the Coda’s frequency response measured well over quite wide forward angles, so the ‘speaker will sound quite consistent when moving around in a room. Our analysis shows that like a good, modern design it has no crossover suckout and treble extends smoothly to 20kHz. The tweeter is peak free and should have relatively little character of its own in consequence.

Kef have given the Coda some low frequency lift, to ensure its sound has some body and weight to it. Bass output reaches down to a usefully low 40Hz, below which the port takes over. However, by being tuned to 50Hz the port contributes less to low bass than normal and seems in this ‘speaker to be more of a cone damping device than bass extender, as it were. The Coda will likely have fast, clean bass as a result.

Impedance measured 5.7ohms overall. With a bass unit DCR of 4ohms but a midband impedance of 8ohms this is to be expected. The Coda uses a 4ohm bass with an 8ohm tweeter, resulting in 6ohms nominal. It was reasonably sensitive, providing 86dB SPL from one nominal watt of input. The Coda is a reasonable load, possessing little reactance.

Kef’s Coda proved wideband and accurate. It will likely sound smooth, clean and fast. Definitely well engineered.

World Verdict

One of the best at the price, the Coda 70 is a great looking and sounding package.
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World Verdict

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Simon Pope checks out the latest budget stereo integrated from the masters of the genre. Enter the NAD C320BEE, a brand new product with a bit of history attached!

Hi-fi is full of success stories that have been told over and over again and one of them starts thus: "Once upon a time, dear budget audiophiles, there was the NAD 3020 and verily it became perhaps the best known budget amp of all time". I won’t bore you with the rest but here are a few basic facts for those who don’t know.

The time was 1978 and the amplifier was the humbly priced NAD 3020. This product basically set a course for NAD products that the company has stuck to ever since, and with very good success. The 3020 is still a highly desirable object to many classic hi-fi collectors. Give or take the odd maverick comment, it was generally considered to be one of the best sounding budget amps ever conceived and it certainly made the industry sit up at the time. It had a sound that many considered the better of products over twice its price and became the industry’s ‘giant killer’.

The 3020 was designed by a certain jazz-loving Erik Edvardsen, who examined the way that most amplifiers of the time (and many still now) were designed, with sine waves and load resistors, the holy grail being low noise and distortion when driving 8ohm loads. They measured well but Edvardsen found them be be lacking in sound quality. He came to the conclusion that performance stability and low impedance drive capability were paramount to sound quality and set about righting the current wrongs in the shape of the 3020.

Rushing headlong into the present we find that Edvardsen is still very much in the fray, being NAD’s Director of Advanced Developments. The C320BEE tested here is the latest in the line of amps derived from the classic 3020.

Budget stereo amps, as our last group test highlighted, are becoming a rarity as the lower end of the electronics market is swallowed up by home cinema products. It’s therefore quite a brave move for NAD to launch the C320BEE (quite what the BEE stands for is anyone’s guess) as the market for this kind of product is dwindling. On the other hand, it could be a good thing, as being number one in a field of one means you’re laughing. And if anyone could do it, then NAD can. The C320BEE was again designed by Edvardsen and replaces the current C320 with a host of improvements in three main areas: performance, features and industrial design.

The C320BEE features PowerDrive technology that’s exclusive to NAD. During the 1980s NAD developed their Power Envelope technology with the concept of making a power supply of a given size act as though its actually larger in the real world situation of driving loudspeakers. PowerDrive is the latest, more refined, version of this. High dynamic power and low impedance drive capability are realised by the ‘smart’ power supply that can optimise itself for high current or voltage, depending on operational conditions. The BEE, compared to the original C320, features an improved circuit with an upgraded toroidal transformer and upgraded smoothing capacitors. These changes apparently result in better dynamic power and reliability, as well as an increase in power from 40W per channel to 50W.

Other contributing factors in the amplifier’s improvement are inclusion of active current sources and common-base current followers in
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The volume control has also been from the 'pregnant credit card' types original version. These changes complement a Class-A modular preamp stage, plus the patented power amp output stage, plus a whole host of other features that remain from the original version.

The new amp also comes with a snazzy new remote, a world away from the 'pregnant credit card' types of NAD's past. The SR-4 remote handset is a system remote which allows control of an NAD tuner and CD player, as well as the amp itself. There's also now a standby mode and the BEE will remember the last input used, as opposed to defaulting to the CD input, as in the original version.

Lastly comes the cosmetic changes. These aren't the most radical known to man and the C30BEE is still very much an NAD - functional and grey, although the feel and look of the fascia controls has been changed slightly. Single 'speaker outputs and the line level inputs remain the same as the C320.

As we've come to expect of NAD amps over the years, there's very little to moan at when it comes to pound for pound quality. The sound is full and powerful with a warmish and overall smooth response that also delivers a commendable amount of low level detail for an amp of this price.

The main thing to get right for the potential customer of a budget amp is its sense of scale and bass weight. NAD succeed superbly here. Playing DJ Shadow's '...Endtroducing' and Supergrass's eponymous third album I was treated to an exciting yet warmish sound that was free from edginess but had a good amount of the forwardness that an amp in this segment of the market needs. Drums were solid and weighty and the bass in DJ Shadow had plenty ofgrunt and extension through the Mission MS2 floorstanders. Vocals and guitars were clear and well defined, showing a good open midrange. The 320BEE's treble wasn't the sweetest to be found but the overall smoothness of its sound means there's very little harshness. The constant driving cymbals in St Germain's awesome 'Rose Rouge' suffered from a tiny bit of splashiness but then they do with £1000 amps too, so this isn't anything to gripe about.

In the same track the thumping bass drum, fast and tight, emphasises good bass control and vocals were again warm and lucid, as was the accompanying muted brass interjections.

Moving onto acoustic jazz and classical discs the BEE gave a good account of itself in a field where budget amps traditionally suffer. The sense of space and breadth that this amplifier has helped to emphasise the airiness of Japanese jazz pianist Mikio Masuda's 'Blue Dumplings' CD on a superb JVC K2 20-bit recording. This well recorded jazz trio set had a clear and focussed sound with good depth of bass in the left hand of the piano and an overall sweetness that is usually the trade of £600-plus amps.

Likewise, the piano trios of Fauré and Ravel on a Hyperion SACD had good detail and presence that belied the BEE's humble price. There was an almost life-like sense of focus, with the sinuous bowing of the cellist being a highlight.

NAD have got it right yet again. Very few hi-fi companies at this end of the market can deliver the goods when it comes to sheer quality of sound, with the exception perhaps of Cambridge Audio (even lower priced still). Japanese rivals may have a little more pizzaz when it comes to looks, overall features and flashing lights but that's not what NAD are about. Very few come anywhere near the C320BEE in terms of sound quality.

There's no doubt that whilst the budget end of the hi-fi market was once the shining light of audio, those days are past. It's different with 'speakers of course, which can fulfil a multitude of tasks, but two-channel audio electronics at the lower end of the market is a virtually extinct sector, with the exception of NAD, who undoubtedly do it best.

The C320BEE could well close the circle. Just as its founding father became a classic, it could become another classic as the last amplifier in a tradition that has carried on for almost twenty-five years. It's not going to change the world of hi-fi like the 2030 did but it could well be the last great budget stereo amp.

**Wald Verdict**

NAD C320BEE **£199.95**

Lenbrook UK Ltd.
Unit 2, Old Wolverton Road
Milton Keynes
Bucks
MK12 5NP
Tel: 01908 319360
www.lenbrook.co.uk

**MEASURED PERFORMANCE**

The 320BEE produces no less than 80W into 8ohms and 90W into 4ohms. Distortion was low at all output levels. I'd expect the NAD to sound smooth and inoffensive, even when pushed hard.

Frequency response extends to 100kHz to suit DVD-A and SACD.

Sensitivity measured a useful 300mV and channel separation a healthy 80dB. The tone controls gave normal amounts of boost and cut, but work cleanly above 2kHz and below 500Hz, not upsetting the rest of the audio band when adjusted.

The 320BEE will give a clean enough sound and there's plenty of power. It may not sound as tight and authoritative with low impedance loudspeakers as some rivals I suspect. **NK**

Power 84watts

CD/tuner/aux.

Frequency response 7Hz-104kHz

Separation 80dB

Noise -112dB

Distortion 0.006%
NHT have a knack of combining high-end sound quality with sensible price tags. Will this tradition continue with the new SB2 bookshelf 'speaker'? Alan Sircom investigates.

NHT (short for Now Hear This) is a Californian company that has been making speakers since 1986. It is thought of as a home cinema company these days, but its speakers are well-worth a look as purist stereo kit, too. The £399 SB2 bookshelf reviewed here is a perfect example.

A sealed box, two-way design, the SB2 is beautifully finished in black or white piano lacquer, giving the feel and look of something more expensive than it actually is. The SB2 is designed to be used on a tall shelf (it stands a shade under a foot tall), but also includes a screw bush at the rear for wall-mounting. This makes it uniquely unfussy in room placement; it is equally happy close to the room boundary as it is in free space, the closed box design helping in this respect, as there is no bass reflex port firing at a wall. The speaker is single wired, with a five-way connector that accepts banana plugs; uncommon in bi-wire world, but a practical, no nonsense approach.

The drive configuration is reasonably standard, with a 25mm ferrofluid-cooled aluminium dome tweeter partnered to a 165mm polypropylene mid/bass unit, both of which are shielded for those who want to make the SB2 brush up against a telly and not turn the picture purple in the process. Closed box - or infinite baffle - designs take some driving usually and NHT claim a moderate sensitivity of 86dB at 2.83Volts and a nominal impedance of 8ohms. This means the speaker may not deliver the most sound per pound, but nor should it pose any difficulties in being driven by the sort of amplifiers a £400 speaker should be partnered with. The recommended amplifier power stats - from 15W (a tad optimistic) to 150W - back this up and the conclusion is this is no speaker for those seeking a partner to a 5W single-ended triode design. NHT also claim the SB2 can reach down to 78Hz and up to 22kHz (within +/- 3dB limits), thereby eliminating the need for a subwoofer, at least in a hi-fi setting.

I used it in partnership with a few amplifiers. At the low end, it performed extremely well with the uber-budget Cambridge Audio A5 50W, but it also resolved much of the extra information that comes from a high-end integrated like the £2,500 Advantage S-100 100W. Speaker cables were Kimber 8TC and the stands used were Soundbytes-filled Kudos S100s (although NHT's own matching Last Stand model should also be considered). The CD source was a Musical Fidelity A308CR, connected to both amps using Cardas 300-B Micro cables and supported on a quaky Quadraspire Q4 Reference table.

Like most 'speakers, the SB2 needs a good running-in period, so I hooked it to an Arcam DVD player and left 2001 - A Space Odyssey on repeat for a few days and waited for it to evolve, like the chimps in the Dawn of Man sequence. When ready to rock, the first thing that struck me about the SB2's performance is its absence of a distinctive signature in the treble. Even recordings that place emphasis on brash and bright treble suffered less than usual at the hands of the SB2. Marquee Moon by Television springs to mind. This seminal slice of the 1970s usually sounds like it was recorded in a mirrored bathroom, and was the archetype for later bands and recordings right up to The White Stripes and especially The Strokes. Played on the SB2, it just makes you want to squeeze into those too-tight black canvas jeans, soap-spike up what's left of your hair and wear a narrow black leather tie; the brightness is resolved as detail.
extended right up to the point where your hearing stops. However, this isn’t done by covering the treble in a blanket or softening the transient attack of the sound; the feedback of those guitars and the attack of the snare drum and hi-hat still has a fresh, powerful feel about it.

The midrange has the same lack of character, a bonus that makes the speaker seem to disappear. Take Bruce Springsteen’s Ghost of Tom Joad – his mid-1990s forgotten almost acoustic masterwork – as an example. Springsteen’s distinctive close mic’d voice is extremely articulate, as is his Dylan-esque harmonica playing. You can follow and pick out every instrument with precision; each has its own acoustic space and real-world dynamic levels.

Its lack of character makes the SB2 a fine all-round speaker; accurate enough for jazz and classical purists, lively enough for those whose musical tastes begin and end with Eminem. The sealed box design also helps to keep the speaker upbeat and pacey; if you are into Eminem, ‘Without Me,’ from his latest The Eminem Show, really kicks and you just can’t help nodding along and making those stupid hand postures.

Pulling the speakers into free space seems to thin down the bass and upgrade the imagery. This is the best arrangement; the boundary sound (especially when placed against a load-bearing wall) can over-emphasise the bottom end, making bass lines too noticeable. It is not a big difference, however, but the improved imagery makes it worth placing the SB2 a couple of feet from a wall. Imagery (in this position) is fine, with sounds moving to the back and sides of the boxes in an easy, unforced manner. Even off-axis imaging performance is good.

No speaker is entirely perfect, and the SB2 has its flaws. But the flaws are not that great, especially when the price is taken into account. Although these ‘speakers are finely detailed, with a good soundstage, they are no electrostatic. There is a small amount of congestion in the upper bass, especially with big-scale classical recordings like Mahler’s Eighth Symphony. And, although the image is wide and deep, it is not a hologram, compared to the best of breed.

It is easy to dismiss NHT as just another American home cinema speaker builder; that is prejudice, this is a speaker that works wonders. You could spend hundreds more and get less of a speaker. Good stuff, indeed!

NHT SB2 £399

Peach Amber Ltd.
15 High Street.
Hardingstone
Northampton
NN4 7BT
Tel: 01327 706560
www.nhthifi.com

MEASURED PERFORMANCE

The NHT SB2 has a particularly flat frequency response and it sounded smooth and balanced under test. This is a loudspeaker that may well seem to have little character, yet be impressively normal sounding and detailed, or quietly impressive. Its tweeter gives a lovely smooth response on-axis, even though it has a phase-plate to achieve this. The SB 2 is likely to have smooth treble, yet be quite positive in its treble projection, because there’s no top end roll off at all. With no crossover suckout either its sense of detailing is likely to be pronounced.

A small lift in output at low frequencies should ensure there’s a useful degree of ‘body’ in the sound. This is a sealed box design, unusual these days, since reflex usually goes lower. In this case the SB2 gets down to 40Hz, identical to a good reflex. It is aided by some bass lift, likely from using an under-damped alignment, but there’s nothing wrong with this. Sealed box speakers usually sound faster and better defined in their bass than reflex in any case. The SB2 should ‘play a tune’ well.

As a load the SB2 again looks good, but with reservations. It uses a 4ohm bass unit which will draw current and it is very insensitive, producing just 82dB from one nominal watt of input. So it needs a powerful amp – 60W or more – and it will be quite a heavy load. However, there’s little reactance in the load, low energy return and likely little upset to feedback. It will get the best from amps until the wick is turned up.

The SB2 is a neat little piece of design work that could well give superb results. Definitely worth a good listen. NK
Meridian is the leader in high-end CD playback. Since we revolutionised the performance expectations of CD with the MCD-pro in 1984 we have steadily advanced the art of digital audio. Our reputation in the field is further confirmed by the choice of MLP (Meridian Lossless Packing) as the mandated standard for DVD-Audio.

The New Meridian 507 CD Player features 192kHz 24-bit DACs for outstanding performance and the very latest laser assembly optimised for CD, CD-R, and CD-RW. It comes packed with the Meridian MSR System remote.
Rega Research have released their first dedicated phono stage, the Fono. With such a strong analogue tradition, the company should have a winner. Simon Pope reports...

I wonder why it took Rega, who are turntable specialists, so long to produce a dedicated phono stage such as we have here. The Fono is available in both moving magnet (£148) or moving coil versions (£198) reviewed here.

The Fono is compact and lightweight. If need be, it can be fairly easily slipped behind the rack out of sight - it's an accessory as opposed to a primary component. Face on, we have just a single push button which incorporates a red LED, and a Rega logo in the bottom left corner. At the rear there are phono inputs and outputs and an earthing post, should the need arise. Power is via a separate 24-volt transformer with integral 13A mains plug. It's as simple as that.

I used the Fono used with a Michell Gyrodec SE, fitted with a Rega RB250 arm carrying an Ortofon Kontrapunkt A moving coil cartridge. Miles Davis's Sketches Of Spain had a nice sense of scale and space with a slightly forward and well detailed sound. There was good breadth of soundstage, along with fine depth - a trait normally associated with high priced components. The same was demonstrated by a Decca recording of Shostakovich's Symphony No.8 conducted by Bernard Haitink with the Concertgebouw orchestra. Good, sinuous bass lines underpinned the smooth and detailed sound of the upper strings. There was very little edge to the sound - percussion was sweet and fast and violins lyrical. With The Cure's minimalist classic from 1981, 'Faith', the Fono made the album detailed and involving, vocals were clean and lucid, and drums exact and fast. Pink Floyd's 'Wish You Were Here' also impressed with its sense of space and sheer size of the soundscape.

The Fono does a fine job with all types of music. Acoustic recordings are spaciously represented and studio rock is clean as a whistle and smooth. As far as sheer detail and smoothness is concerned, £100 extra will get you the superb Michell/Trichord Dino, which for the money is unbeatable, but the Fono is up there with Creek's £180 MC model phono stage, which I have a soft spot for. That makes the Fono MC one of the best around.

If you're after a no-frills way of making the most from vinyl, you can do a lot worse than to look in this direction. Highly recommended.

Rega Fono (MC version) £198

Rega Research
www.rega.co.uk

**MEASURED PERFORMANCE**

The Fono head amp we tested was configured for moving coil cartridges. In this form it has enormous gain, x1200, enough for the lowest output types, which translates into high quality designs from the likes of Linn and Lyra. Input noise was low, so the stage is quiet. Equalisation was accurate and response extends from 25Hz to 100kHz within 1dB limits. There is no warp filter, but gain rolls down below 20Hz so there is some suppression of disc warp signals around 5Hz.

Input/output overload ceilings were normal enough and adequate for the purpose.

The Rega phono measured well and looks to be a good choice for expensive MC cartridges.

**NK**

- Frequency response 25Hz-100kHz
- Separation 64dB
- Noise (IEC A) 0.08uV
- Distortion 0.002%

**Gain**

- x1200V

**Overload**

- 7.8mV/9.5V

**World Verdict**

Basic in construction but sweet and clear sounding, the Fono is everything you want at the price.
Quad is a name synonymous with traditional high quality audio. Since the company was formed back in 1936 by Peter Walker, every product in Quad's range has shown the same uniqueness of design and level of sound reproduction. It's a long and illustrious history and it begins with the Quad I amplifier, the first domestic hi-fidelity product to be launched by Peter Walker after his years of experience in professional audio.

Post war, 1953 saw the introduction of a product which set the standard for amplifiers of the time and is still regarded as a hi-fi classic, the Quad II power amplifier - it's a desired audiophile amplifier even today. The Quad II pioneered the principle of cathode coupling through the output transformer to reduce harmonic distortion. It remained in production for some eighteen years.

Three years later saw the launch of yet another industry benchmark product that is still revered, the first 'true' full range electrostatic loudspeaker which became known as the ESL-57. It used a unique lightweight plastic film as the moving diaphragm, sandwiched between two electrically charged plates. The result was a sound free from coloration and distortion - a rarity at that time. Again, this product had a remarkably long existence. It remained in production, virtually unchanged, for some twenty-eight years.

Ten years later the company introduced its first range of transistor amplifiers, the 33 control unit and 303 power amp. These used a 'Triples' output stage that had a solution to the thermal instability that affected early transistor designs. The 33 and 303 went on to win a coveted Design Council Award in 1969.

Throughout the seventies Quad continued to produce products that gained new respect in the industry, such as the Quad 405 'current dumping' amplifier whose technology won the Queen's Award for Technological Achievement in 1978.

In 1981, the follow-up to the ESL-57 was launched, the ESL-63 which again became a true worldwide reference speaker. This used concentric annular electrodes fed through sequential delay lines, a system still used in the two current electrostatic models, the ESL-988 and 989.

The company is now under Chinese ownership but still produces products of world-beating quality, as the aforementioned two electrostatic models and the Quad two-forty valve monoblocks demonstrate.

The new Quad I1L loudspeaker offers remarkable build and sound quality, equalling that of products at least twice the price, as we discovered in our recent review. It features a superb piano lacquer finish that uses no less than six layers, with a high final polish, to create a supremely luxurious looking speaker available in Piano Black, Piano Rosewood, Piano Maple and Piano Bird's Eye finishes. It's not just in looks that the Quads impress either as sonically they're a gem. They have a sound that excels in intricate detail and imaging with a tight and deep bass response and realistic dynamics. All from a cabinet of humble dimensions. We summed them up thus: "sets a new standard at the price. The gorgeous looking I1L is also a sophisticated and neutral sounding winner." And you could be a winner, too.

Getting a pair of I1Ls couldn't be easier. Simply answer the following questions on a postcard and send it to the address below by September 30th. The first five correct entries out of the bag will receive a pair of these superb products. The winners will also have their choice of finish, subject to availability!

**Competition Questions**

1. In which year was Quad founded?
   - [a] 1936
   - [b] 1946
   - [c] 1976
   - [d] 1836

2. Who founded the company?
   - [a] Johnny Walker
   - [b] Peter Walker
   - [c] Scott Walker
   - [d] Tightrope Walker

3. What was Quad's first product?
   - [a] ESL-57 loudspeaker
   - [b] I1L loudspeaker
   - [c] Quad II amplifier
   - [d] Quad I amplifier

4. How many layers of piano finish does the I1L have?
   - [a] 1
   - [b] 2
   - [c] 6
   - [d] 16

For full details of Hi-Fi & Computer Audio World Competition rules and conditions of entry, see page 33.

**CONGRATULATIONS!**

...to Mr. Alec Fray of Bolton, Mr Davor Zambal of Crotia, Ms Donna Johnson of Aberdeen and Mr A Poree of Tywyn, the winners of our August competition. A Project Debut Turntable is on its way to you!
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Sevenoaks Sound & Vision specialise in designing and installing the finest home cinema, hi-fi and multi-room systems.

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www.sevenoakssoundandvision.co.uk

**home cinema  lighting systems  discrete installations  plasma & projection  multi-room audio**

experience more
Debut II Turntable (Black) £114.95

"The original Debut turntable romped away with a Product of the Year Award in 1999, and the MKII version continues the extremely good work. It's a simple affair, that's easy to set up, but don't let the price fool you - it sounds a whole lot more expensive than that. This is a fine turntable, and it clearly reveals the benefits of listening to vinyl, with a rich and detailed soundstage, and a good dynamic response.

It's available in six funky colours, so you should find one to suit your decor, and at just a smidge over £100; you can have no excuse not to keep that old vinyl collection in employment for a good few years yet."
**Amplifier Selection**

- **Arcam DiVA A65 Plus Amplifier** £369.95
- **Arcam DiVA A75 Plus Amplifier** £469.95
- **Arcam FMJ A32 Amplifier** £1149.95
- **Cyrus ACA7.5 Pre Amplifier** £549.95
- **Cyrus Smart Power Amplifier** £799.95
- **Cyrus 5 Amplifier** £499.95
- **Denon PMA355 Amplifier** £199.95
- **Linn Kollector Pre Amplifier** £494.95
- **Linn K85 Power Amplifier** £494.95
- **Marantz PM4200 Amplifier** £149.95
- **Musical Fidelity A3.2 Pre Amplifier** £999.95
- **Musical Fidelity A3.2 Power Amplifier** £999.95
- **Musical Fidelity A308 Amplifier** £1999.95
- **Rotel RA-02 Amplifier** £349.95
- **Sony A-FE570 Amplifier** £149.95

**DiVA CD72T** CD Player **DiVA A85** Integrated Amplifier

- **DiVA CD72T** “The CD72 will have you jumping out of your seat from the very first notes. Both powerful and punchy, it delivers every ounce of air and detail present from detailed midrange to smooth, singing treble. Sometimes a product comes along that sets new standards...” 4★ 4★ 4★ 4★ Awards 2001

- **DiVA A85** “You'll have realised by now that we rather like this amp. It took us completely by surprise, and further strengthens Arcam's already impressive product range... The ABS is superb, and we can't wait to put it up against its peer in a group test.” 5★ 5★ 5★ 5★ March 2001

**Monitor Audio Silver 8i Speakers** £699.95

“...no other speaker in this test can match the Monitor Audios when it comes to delivering seismic basslines with sofa rattling power and weight. That this part of the spectrum also enjoys plenty of speed and control confirms the Silver 8i's position as bass kings... A great speaker needs more than simply great bass, however, and the Silver 8i's co far more than merely thump. With the likes of Curtis Mayfield's 'Move On Up', they produce a sound of such verve that it becomes hard to sit still... They produce music with plenty of excitement - but don't forget the subtleties too. Add excellent build and an easy load and these Monitor Audios make a formidable case for themselves.” 5★ 5★ 5★ 5★ April 2001

**PURE Digital DRX-701ES Digital Tuner** £249.95

PURE Digital (formerly VideoLogic Systems) introduce their new PURE DRX-701ES DAB digital radio tuner. This advanced hi-fi tuner builds on the huge success of its predecessor, DRX-601ES, which was awarded What Hi-Fi Sound & Vision magazines Tuner Product of the Year 2001.

Says Kevin Dale, president, PURE Digital: “Our DRX family are the UK’s best selling and highest award winning DAB products. Using the META third-generation DAB processing technology enables us to include a wider range of outstanding features and performance, like a uve station learning and signal strength diagnostics, while also bringing down the price of hi-fi DAB tuners by nearly a third compared to our previous generation product.”

DRX-701ES is attractive in any setting, featuring a stylish precision machined aluminium front panel, anodised in either black or silver, along with matching black or silver finish casework and controls, cool blue LED indicators and an easy to read blue/white display.
**CD Players**

**Best Buy C501** £1300

4 or 4 very imm. MI 1

**CD7** CD Player

**£799.95**

_Cyrus 7 CD_ This player is just as convincing with thundering orchestral strings and brass, making a great job of Bernstein’s recording of Mahler’s Symphony No 5 and it has the definition to unravel the instrumental strands in the Kronos Quartet’s disc of Philip Glass string quartets. It’s that that makes it special - and this is a very special player indeed.★★★★★ _YCLIT...M.f2_ November 1999

_Cyrus 7 Amplifier_ This is a fabulous amplifier. It’s fast, punchy and has bags of power on tap but crucially delivers huge sackfuls of subtlety when the music requires. Some of the other amplifiers in this group may be better with particular genres of music but as an all-rounder it takes some beating.★★★★★ _YCLIT...M.f2_ November 1999

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**Mission**

**78 Series**

**782** bases its performance on a 165mm Nonex bass unit fitted to a reflex enclosure ensuring excellent low frequency extension from a graceful and compact cabinet. The **783** houses a larger 200mm bass unit with massive motor system, capable of floor shaking, yet tightly controlled low frequency extension. Both use Keraform midrange drivers for outstanding clarity and midrange detail coupled to superb dynamic range together with Mission’s silk dome tweeter.

The **780** and **781** are the pinnacle of Mission’s research into creating a three dimensional soundstage, extensive bandwidth and dynamic range from the smallest possible cabinet dimensions. The **780** is massive in its sonic capabilities. Its 130mm Keraform bass unit is carefully matched to a novel reflex enclosure for full bodied bass extension. The qualities of Keraform produce a dynamic and ultra detailed midrange. In the **781** a 165mm Keraform driver takes advantage of a larger cabinet to extend bass performance and increase efficiency whilst maintaining that superb midband transparency and finely detailed treble.

**780** “Versatile and with a sound that works well with a wide variety of hi-fi kit, these speakers were worthy of this title last year, and this year have achieved the tough task of making it the double.” ★★★★★ _YCLIT...M.f2_ Awards 2001

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**KEF**

**Q1 Speakers** £249.95

“Overall the Q1s are excellent speakers. Some rivals may edge ahead on a short audition but give these standmounters a little time and they’re sure to impress. Are they better than the likes of B&W’s 601S3 or Mission’s 780s? The answer will have to wait for a group ’test’. But until then it is fair to say that these are the most competitive speakers that KEF has had at this price point for years.” ★★★★★ _YCLIT...M.f2_ May 2002

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**Speaker Selection**

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Price</th>
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<tr>
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<td>B&amp;W CDM 1NT</td>
<td>£749.95</td>
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<td>Wharfedale 81</td>
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**World Radio History**

更多娱乐
System Selection

**Cyrus Quattro Ex Power Amplifier & Speakers** £849.95
**Denon 201 Ex Speakers** £629.95
**Denon DM50 Ex Speakers** £269.95
**Linn Classic Music System Ex Speakers** £799.95
**Marantz Eclipse 19 Inc Speakers** £549.95
**Marantz Eclipse 21 Inc Speakers** £649.95
**Marantz Eclipse 22 Inc Speakers** £699.95
**Marantz Eclipse 25 Inc Speakers** £799.95
**Tag McLaren Aphrodite Ex Speakers** £2994.95
**Teac Reference 100 Inc Speakers** £299.95
**Teac Reference 500 Ex Speakers** £599.95
**Yamaha Pianocraft E150 Inc Speakers** £249.95

**ROKSAN**

**Caspian MKII CD Player** £994.95
**Caspian MKII Amplifier** £894.95

*Caspian Amplifier* “The Caspian has been around for a few years, but Roksan has developed it to a point where it now leads the class in all-round terms. In specific areas other amps equal it, but overall none can beat its combination of clarity, timing and dynamics. The Caspian is a worthy winner.” ***** February 2001

*Caspian CD Player* “If you can stretch to it, though, Roksan’s Caspian is the player to go for. Yes, it’s the most expensive here, but no rival can touch it when it comes to bringing music to life - regardless of genre. And that’s what hi-fi is all about.” ****** May 2001

**TEAC**

**Reference 300 System** £549.95

“Teac’s Reference 300 system is an absolute belter. The company’s Reference series has won lots of awards and many admirers in the east, and the 300 range at £200 less than the bigger 500 series, is no disappointment. Your £600 buys you everything but speakers: an amplifier, tuner, CD player and cassette deck. As beautifully built as we’ve come to expect from Teac, this system delivers the goods with style.” ****** Awards 2001

**DENON**

**D-M30 CD Receiver** £229.95
**SC-M50 Speakers** £69.95

“Denon’s gorgeous D-M30 has a fine pedigree - and a record of success. Its forebear the D-M3 kept impressing us with its balance of good looks and great sound, winning two What Hi-Fi? Awards on the trot. Now the latest generation takes home a Product of the Year gong going two years in a row. On its own merits, too, as this is much more than a rehash of the D-M3. Upgraded audio circuitry, improved power supply and the Mission-designed speakers all improve the package. The sound is superb, well-balanced and weighty... It’s a big system in a very cute box.” ****** Awards 2001

Optional Recorders:
- CDR-M30 CD-RW Recorder
- DMD-M30 MiniDisc Recorder
- DRR-M30 Cassette Deck

*Please Note:* Some products may not be available at all outlets.

Advertisement valid until at least 26th September 2002, ME.
The beautifully engineered Gyro SE not only looks the part but has a wonderfully clean and fluid sound.

*****

July 1999

MUSICAL FIDELITY

A308 Amplifier £1999.95

The New A308 Series from Musical Fidelity has been designed to follow in the footsteps of their superb limited edition Nu-Vista products. Using easier to manufacture casework and newly developed circuitry has resulted in both a huge price reduction and superior sonic performance in several areas. The A308 sound is completely seamless and integrated with no harshness, grain or edginess. Bass performance is both fast and deep, imaging is three-dimensional. The immediately noticeable quality of the new A308 circuitry is its incredible high frequency performance which is smooth, sweet and extended. To achieve the build quality Musical Fidelity want, a huge investment has been made in production, tooling and custom extrusions which not only look handsome, but also offer excellent mechanical integrity. In brief, the A308 series has genuine state-of-the-art electronics housed in solid, well made metalwork and gives the music lover a true audiophile product with a great sound, great circuits and great build quality.

J A Michell

Gyro SE Turntable £1017.95

Founded in Borehamwood by mechanical engineer John Michell. For over thirty years, Michell Engineering have been at the forefront of quality audio, with world-wide appreciated products like the GyroDec and Orbe Turntables. In the early eighties, the revolutionary GyroDec Turntable, with its elegant and effective suspension system, was introduced. The Gyro SE is a smaller and cheaper package that retains the classy sound of the GyroDec and can be upgraded to the full GyroDec specification by adding a plinth and dustcover.

Price includes Rega RB300 Tone Arm

Genki CD Player £994.95

Linn Majik Line Amplifier £694.95

Genki

"Tempting though it is to think of Genki as a Glaswegian word, it's actually Japanese, and the nearest definitions we could find involve vitality, vigour and spirit. And used as adjectives, these words go a long way towards describing the sound of the Genki, which always manages to communicate the music first and foremost, and let the rest of the hi-fi thing look after itself.

It's a very well-thought-out player, too, from its clear and simple control layout to the provision of four sets of analogue outputs, two at fixed level, and two with level control. Completing the package is a 24-bit Burr-Brown DAC and Pacific Microsonics HDCD filter. Few owners will worry about all that stuff, however, as they'll be too busy enjoying the way Genki plays music, its purity of tone and sense of drama on Mozart's Don Giovanni being a fine example of its talent. By any standards this is a superb player, and not just one for the army of Linn enthusiasts."

March 2000

Majik

The Linn Majik is a sophisticated control amplifier complete with onboard stereo power amplifiers. A core entry-level product for powerful and flexible control of hi-fi, video or multi-room installations. "Sneaky" add-on modules expand its functions. It can accommodate many source components. The Majik is available in two versions: The 'Phono' version has five line-level inputs and one Moving Magnet phono input and the 'Line-level' version has six line-level inputs.
scotland and north
Aberdeen 491 Union Street 01224 587070
Edinburgh 5 The Grassmarket 0131 229 7267 Closed Monday
Glasgow 88 Great Western Road 0141 332 9655 Open Sunday
Hull 1 Saville Row, Saville Street 01482 587171
Leeds 112 Vicar Lane 0113 245 2775 Open Sunday
Liverpool 16 Lord Street 0151 707 8417
Manchester 89 High Street, City Centre 0161 831 9730
Newcastle 19 Newgate Street 0191 221 2320
Sheffield 535 Queens Road, Heeley 0114 255 5861 Open Sunday
midlands and east
Bedford 29-31 St Peters Street 01234 272779
Cambridge 17 Buryeigh Street 01223 304770
Ipswich 12-14 Dogs Head Street 01473 286977
Leicester 10 Loseby Lane 0116 253 6567
Lincoln 22 Corporation Street 01522 527397
Norwich 29-31a St Giles Street 01603 767605
Nottingham 59-59 Mansfield Road 0115 911 2121
Oxford 41 St Clements Street 01865 241773
Peterborough 36-38 Park Road 01733 897697 Open Sunday
midlands and west
Birmingham 92a White Ladies Road, Edgbaston 0121 233 2977
Bristol 104-106 Albany Street 020 7352 8399
Cheltenham 34-36 Cheltenham Road 01242 241171
Exeter 21 Long Street 01392 212285
Plymouth 37 Cornwall Street 01752 226011
Swansea 24 Manx Road 01792 465777 Open Sunday
london and south east
Brighton 57 Western Road, Hove 01273 733338
Bromley 39a East Street 020 8290 1988
Chelsea 403 Kings Road 020 7352 8466
Cheltenham 33-35 Cheltenham Road 01242 241171
Croydon 89-93 London Road 020 8665 1203 Open Sunday
Epsom 12 Upper High Street 01372 720720 Open Sunday
Guildford 73b North Street 01483 536666
Hitchin 144-148 Grey Street 01372 720720 Open Sunday
Reading 12 King's Walk Shopping Centre 0118 959 7768
Sevenoaks 109-111 London Road 01732 459666
Southampton 33 London Road 023 8033 7770
Southgate 79-81 Chase Side 020 8866 2777
Swiss Cottage 21 Northways Parade, Finchley Road 020 7722 9777 Open Sunday
Tunbridge Wells 28-30 St Johns Road 01892 531543
Watford 478 St Albans Road 01923 213533 Open Sunday
Witham (Essex) 1 The Grove Centre 01371 501733
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who are sevenoaks?
Founded in 1972, Sevenoaks Sound & Vision are one of the largest and most successful hi-fi and home cinema retailers in the country.
Each Sevenoaks Sound & Vision outlet stocks a wide range of quality products, covering all categories of specialist home entertainment, from DVD Players to Widescreen Plasma Televisions and Projection Systems, all at highly competitive prices.
Friendly staff are available in all stores to advise, demonstrate and guide you through the home entertainment jungle.

sevenoaks online
The Sevenoaks Sound & Vision website has news and information on the Sevenoaks group and its 44 outlets nationwide. The website is designed to provide you with answers to the questions you may have when buying new equipment.
The site has comprehensive guides to a range of products and technologies from vinyl and compact disc to all the latest formats, including DVD Audio, SACD and widescreen plasma monitors and front projection systems.
There are regularly updated stock clearance lists with hundreds of products on offer and detailed pages to help you locate your nearest outlet.
For impartial advice and information, just click sevenoakssoundandvision.co.uk

stock clearance
With over forty outlets nationwide, the Sevenoaks Sound & Vision group stock and display a wide range of products. As technology delivers improvements in performance, so individual models and product ranges are changed or superseded. The preceding models are made available at a reduced price, for clearance. Visit our Website for a up-to-date list of the clearance stock, listed by outlet, within the Sevenoaks Sound and Vision group.

0% finance option†
Spread the cost of buying. 0% finance option is available on the vast majority of products we stock. *Written details on request. Licensed credit brokers. Minimum balance £40. Subject to status.

pricing policy
Whilst we do not claim always to be the cheapest, we try to ensure our prices are highly competitive. Take into account the expert advice, unrivalled product selection, demonstration facilities and excellent pre, during and after sales service and the lower price might not look such good value.
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www.sevenoakssoundandvision.co.uk
Are you aiming to buy a DVD? Here's what to look for, an understandable guide to a complex piece of kit, aimed at the audiophile.

When you buy a DVD it will be a DVD video player that can also play a CD. It's least confusing if you consider the video and audio functions separately.

In the UK you will buying a Region 2 player that accepts only Region 2, PAL movie discs, unless you specifically buy an "all-region" player. If you travel, or buy from the internet or mail order, discs you buy must either be Region 2 PAL, or ALL regions and PAL. The region code on a disc is optional. If it isn't used (i.e. ALL regions) then a disc will play on any player. But whilst it might play (i.e. not be locked out), NTSC discs will play in black-and-white unless your player can convert NTSC to PAL (some can). Note that Japan is Region 2, but NTSC not PAL.

Another variable to be aware of is the use of Widescreen format (16:9). Played on an ordinary TV (4:3), widescreen movies will have a black band top and bottom and the picture will be very narrow unless you have a big set or a widescreen set.

And finally you will often see discs carrying an identifying number, normally DVD-5, or nowadays DVD-9. This refers to the capacity of the disc, which is dependent upon the layers/sides used. A conventional single-side/single-layer disc is a DVD-5 (4.7GB) that gives 2hrs of video. Nowadays, DVD-9s (8GB) are appearing and, with two layers, they play for 4hrs or may have better video/audio quality, or both, so look closely. DVD-10,14 and 18 are all high capacity variants, whilst DVD-1-4 are 8cm DVD discs - rare birds.

So much for the video, now the soundtrack. This can take many, many forms and it's confusing even for experts. You can have two channel CD sound, which means 16bit at 44.1kHz sample rate coding in what is usually termed "linear PCM" (LPCM). Better still is "24/96" in buff slang. This is 24bit at 96kHz sample rate, a whole step up from CD in sound quality. It's still linear PCM, by the way, and can be two to six channels. There's much less distortion from 24bit, far greater dynamic range, and the extra bandwidth of 96kHz sample rate gives a wide open, clear sound. Good "24/96" is much better than CD and will blow you across the room, but currently soundtrack doesn't usually come in this format. A number of U.S. specialist labels, like Chessky for example, do however release audio discs in 24/96 and you may want to try them. If you do, check that the player outputs 24/96.

The most common sound track format is Dolby Digital. Using digital compression, Dolby gets six channels (termed 5.1) of audio onto a disc, comprising front left/right, front center, rear left/right and the one-tenth (0.1) channel for subsonics to drive a subwoofer. An alternative to Dolby is DTS, another compression system, but of higher quality. All players will reproduce Dolby digital and some will play DTS as well.

That's what you get from a modern DVD player. It's quite a package, but there are some horrendous complexities because of the options available and because manufacturers implement functions differently and pick and choose what they will include on a player.

DVD AUDIO
You might be confused by the fact that most modern DVD players have the complex and advanced audio specification described above and can produce great sound quality, yet they won't play DVD Audio. Yes, DVD Audio is something entirely different from - er - DVD audio. One has a big A and the other does not.

DVD-Audio is a technological blockbuster you could say. It is audio of such high quality that, the DVD forum must have thought to itself, audio buffs would never again thumb "yah, boo, it sucks" as they did with CD. Trouble is, this digital signal, at 24 bit resolution and 192kHz sample rate, in two channel stereo, linear PCM, occupies so much space there's no room for movies. So a DVD-Audio disc is an audio buffs dream. It is 100% pure, super specification, uncompressed stereo, no less, although you can have pictures as well. The trouble here is studios have only recently been able to record 24/192, so at present few discs exist. Worse, although Warners in
particular are trying to market DVD-A discs most come from old analogue or digital tapes. It will be many years before artists record in pure 24/192 and it is committed direct to disc – and you know such discs will not be cheap.

At present DVD-A is so esoteric few DVD (video) players can handle it. However, it is the latest thing in DVD and DVD-A players are tumbling out of factories at this very moment. By the way, these players always play normal DVD video, although this will change. Pure audio-only players are coming.

There's one other slight worry with DVD-A. If studios all decide stereo is dead and move to surround-sound, as the world's Consumer Electronics industry would like so it can sell lots more loudspeakers and multi-channel amps., two-channel DVD-A recordings may remain a rarity.

SACD AND DVD

SACD, or Super Audio Compact Disc, is another high quality audio format like DVD-A. However, where DVD-A offers only two channels uncompressed at full resolution, SACD offers six channels uncompressed, also at 24bit resolution and with 192kHz equivalent sample rate (i.e. 96kHz audio bandwidth). It would seem therefore that SACD has a superior spec. to DVD-A, but this is not so. Above 20kHz SACD produces large amounts of supersonic noise, which really negates the benefits of wide bandwidth.

From a buyers point of view there are more SACDs than DVD-As available, but that's not saying much. Both are rare and both are expensive.

Since Sony and Philips support SACD, and not DVD-A, you will find them bringing to market DVD (video) players with the ability to play SACDs. These players will not play DVD-A audio discs, but they will play DVD video discs, including high quality 24/96 linear PCM soundtrack. Marantz offer such players too!

Most Japanese companies (Panasonic, Toshiba, etc) are part of the Japanese DVD forum and do not support SACD. Their DVD video players will therefore be optionally equipped to play DVD-Audio.

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When playing a stereo CD it is usually best to use the front L & R outputs and these will be satisfactory with videos too.

The video side of things can be more confusing. You should not use an RF connection to the TV, nor Composite Video (CVBS) if you can avoid it, since you will get a grainy (noisy) picture. Use either the preferred Japanese/U.S. colour signal method known as S-Video, which uses a small round plug, to connect to a Japanese/U.S TV with S-Video input, or European SCART, which carries an RGB signal, to connect to a European TV with SCART input.

If you want to use a six channel receiver rather than your stereo, then connection can either be via the DVD's analogue outputs or, more likely, its digital output if the receiver has its own decoder, as most do. With DVD-A you can connect via analogue output only.

Progressive scan is better video quality than interlaced but you will need a progressive scan output on the DVD player as well as a progressive scan TV.

DVD video players all play CD and some play MP3 as well, but don't expect cheap ones to sound good. Even DVD-A can sound pretty tinny from a cheap player - a bit of a shock. And some expensive DVD-A players, like Denon's new DVD-A1, treat CD as an afterthought, also not a good idea. Philips DVD962SA is a great player that offers first class sound quality, from all DVD sound track audio as well as CD. The technology is immature and variations great, so it's still best to listen before buying if you can.
More than just a new moving magnet cartridge, Linn says its new Adikt is 'proof of its commitment to vinyl'. David Price takes its measure.

Despite Linn's prolific activity on the digital front with the likes of the CD12, multi-room Kivor hard disc system and the latest CMS one-box movie/music system, it seems the company can still spare a place in its heart for good old fashioned vinyl. Now they have released a new moving magnet cartridge, the Adikt.

Recently we've had the Lingo LP12 power supply go through a few production improvements. It suggested the company was still very much a champion of the black stuff. Factor in this upgrade with the launch of the Adikt and we should be left in no doubt that the Glasgow boys are still very much 'on side'.

Still, it's one thing to launch a new cartridge at a time when the rest of the world is obsessed with new digital formats, it's another thing to make it a good one. Moving magnet cartridges are a bit of a mixed bag. Get it right and you have speed and detail galore. Get it wrong and your fillings will drop out after five minutes of high register violin playing.

Here's where I have to declare my hand and say that I'm not a huge fan of Linn's MM offerings to date. While every moving coil the company has done, from the original Asak DC2100K to the latest Archiv II has had much to recommend it, the moving magnets are another story.

In my humble opinion, at least, both the K9 and K18 were somewhat overrated cartridges. Based on cheaper Audio Technica bodies, they were heavily tweaked for better sound, but still retained the original's unremitting hardness - which is rather missing the point as far as vinyl's concerned, methinks!

The Adikt is a dramatic departure. Housed in a radical looking new body (that weighs 7g and feels like Pocan) and with a high quality replaceable Gyger II stylus, The Adikt looks every inch a modern 'new age' pickup.

At £195 you shouldn't expect diamond cantilevers silver wiring or fancy velvet boxes. Instead, you get a very nicely presented product (complete with cartridge tags - which duly fell apart!) with a pretty conventional line-up of attributes - aluminium cantilever, copper internal wiring and gold 1.2mm pins.

A bonus are the protrusions just behind the cartridge mounting bolt recesses. This clever feature makes it hard to skew the body in the headshell, greatly easing alignment. The only problem is that owners of modern SME arms will find the Adikt impossible to fit into their headshells unless they drill them. Somehow I don't think Linn will lose too much sleep over this, though!

Moving up to the midband, and there's no hint of its predecessor's glare or hardness. Okay, so it's not the softest and mellowest around, but this is still a very even performer with a particularly grippy nature.
Rarely have I heard the rhythm guitars in Corduroy's 'Don't Wait for Monday' so enthusiastically carried. It's as if this cartridge goes straight for the song's jugular, and throws bags of light on it instead of trying to strangle it. Factor in its incredible ability to go loud then quiet 'at the drop of a hat' and you've got an extremely agile and willing performer.

Treble performance is good, but doesn't match the Dynavector DV10x4, which is altogether more spacious and airy, and also blessed with a delightfully warm nature. By contrast the Adikt is dry and analytical, but such is the massive amount of midband detailing that it doesn't sound out of place.

Downsides? Very few. Indeed, I'd say the Adikt is neck-to-neck with the class of the sub-£200 field (the Dynavector) and in some ways better. Ultimately, it lacks the latter's tonal palette, but makes up for it with an incredibly big hearted, musical sound with bags and detail and decent refinement too. This makes an extremely persuasive case for you to upgrade your old Linn MM, or simply to get a great new cartridge that plays your records with passion. This is a piece of quality hi-fi that, like Ortofon's Kontrapunkt MC models, also has a great element of fun to it. It gets up and boogies but doesn't get on your nerves; your only wish is to join it. It's a cartridge I could get used to.

Linn Adikt £195
Linn Products Ltd
Floors Rd.
Eaglesham
Glasgow G76 0EP
Tel: 0141 307 7777
www.linn.co.uk
The NEXT

From one of Britain's most prolific hi-fi manufacturers comes this new monster integrated amplifier. David Price works out with Musical Fidelity's A308.

It was nearly five years ago when I last reviewed a top Musical Fidelity integrated amplifier. Since I heaved that enormous black Perspex-fronted A1001 out of its box back in January 1998, the company has launched a vast number of new products. Anthony Michaelson is evidently not one to rest on his laurels!

Although dramatically different in design detail, the A308 continues the tradition that the now-defunct A1001 also once upheld. It's expensive (at £1,999), back-breaking heavy, conspicuously large and packs more power than the Men In Black. (Indeed, should evil extraterrestrials ever invade, this amp could be devastatingly deployed in defence of humankind - if nothing else, you could drop it on an alien from a great height.)

For just a little more cash than a baby Naim pre-power combination, you can get this 'mother of all integrateds' with four line inputs, an MC and MM-compatible phono input and tape loop. It also has a 'home theatre bypass' that lets you use it as a standalone two channel power amp as part of a larger six channel system. Then there's the aforementioned National Grid-sized power output, claimed to be 150W RMS per channel, which from my listening at least, seems a conservative estimate.

The A308 is more than just a pair of big boots, however. Musical Fidelity has given this amp full dual mono construction, with an isolated power supply for the output stage said to minimise the effects of high current ripple effects and power supply noise on the driver circuit.

In the flesh, the A308 looks exquisite. Of course, style is a matter of taste, but there's no denying the beautifully finished front panel, milled and machined from high quality aluminium. The lavish volume control knob moves smoothly on its axis, and the source selection buttons have a pleasing action. It's big and brash perhaps, but it sure does the job!

Round the back, a brace of chunky gold binding posts, with little Musical Fidelity legends underneath their clear plastic shrouding, add to the upmarket feel.

Hooked up to Yamaha NS1000M loudspeakers and fed by a Michell Orbe/Origin Live Silver 250/Ortofon Kontrapunkt B vinyl front end, this amp really 'hit the ground running'. The Yams have famously low distortion figures, and as such are a great tool for gauging amplifier performance. The A308 proved a brilliant match, serving up an incredibly clean sound from the opening few bars of America's 'Ventura Highway'.

The A308's midband is what immediately caught my ear. It's very transparent, almost as if someone is shining a powerful searchlight on the music. I was immediately aware of the recording quality and the limitations of the pressing, yet the music shone through. Those Byrds-style close-knit vocal harmonies came through in sharp relief, showing not a hint of upper mid-band hardness. So open is this amp, that you feel you can almost hear right into the microphones, making the different textures of each separate vocal track plainly obvious. Leading edges of steel string guitars were also very vividly carried. Unlike some less visceral rivals, you get a sense of the speed and physicality of the strings being strummed.

The A308 is evidently excellent at starting and stopping, and this carries on down to its bass. Don't be fooled by this amp's stonking rated power output or obvious physical bulk - this is no fat, overblown performer down at the bottom of the scale. Rather, its low frequency nature is tight and rhythmic. Although not quite up with an equivalently priced Naim pre-power in terms of speed or articulation, you'd be surprised just how fast and spry it is. Bass guitars proved extremely tuneful, the MF able to communicate their rhythmic accents and phrasing brilliantly.

At the opposite end of the spectrum the A308 impresses but doesn't dazzle - it's less open and airy than I remember the old A1001 being. Herbie Hancock's 'The Prisoner' showed this amplifier's good treble detailing, but underlined its slightly 'matter of fact' tonal quality. Although in no way harsh, the...
MF doesn’t embellish - or even flatter - cymbal sounds. In truth, I think it does just a little bit of its own spring cleaning and turns out a slightly drier, crisper sound than that which went in. Indeed, overall it’s an extremely transparent design, but with just a slight tendency towards dryness. I don’t want to overstate this, but must underline that unlike some earlier Musical Fidelity high-end products, this one isn’t going to soften and smooth your source.

The A308’s fast, clean and transparent nature isn’t its only abiding feature. Rather, it combines this with its other great asset - sheer oomph. Where so many high-end amps offer power without control (or vice versa), the MF brilliantly combines its rigorous, brightly lit midband and bass with a serious dose of good olde unreconstructed wallop. The result is a strong, confident, bold sound that remains utterly unfazed by any demands put upon it. Furthermore, even when the going gets tough, its excellent stereo imaging and depth perspective remain solid and faithfully rendered.

Goldie’s ‘Inner City Life’ seemed an ideal workout for this amp. I cued this track and turned up the volume with a big smile on by face, expecting my NS1000Ms to make mincemeat of it (they often turn muscle amps to jelly, such is their demanding nature). However, the A308 held on in the bass with impressive ease, positively refusing to go absent without leave even on the loudest, lowest transients. Better still, when called upon to move vast volumes of air via the Yams’ two twelve-inch bass units, the MF remained sweetness and light up top. It came out of the contest the winner, those nightmare speaker loads having failed to have got the better of it even at crushingly loud volumes!

Of course, any integrated amplifier costing £1,995 that isn’t anything less than excellent won’t justify its premium price tag, but Musical Fidelity’s A308 goes further still. Offering a fiercely addictive blend of clarity, detail, power and rhythmic prowess, it makes a great case for itself. It’s not the sweetest, gentlest or most beguiling amplifier for the money, but as a serious all round performer it’s nigh on impossible to beat at the price.

Musical Fidelity A308 £1,995
Musical Fidelity Ltd.
15/16 Olympic Trading Est.
Fulton Road, Wembley
Middlesex HA9 0TF
Tel: 020 8900 2866
www.musical-fidelity.co.uk

MEASURED PERFORMANCE

This is a powerful amplifier, capable of sustaining 2x165W/8ohm through bass and midrange (and 2 x 2.70W/ 4 ohm) with a very slight fall to 2x135W/8ohm at 20kHz. Under dynamic or music-like conditions (10msec transients at 1kHz), the A308 extends its capacity with outputs of 205W, 375W, 525W (16.2A) and 280W (16.8A) into 8, 4, 2 and 1ohm loads respectively, with obvious current-limiting at 17A.

The overall gain is 41.9dB, equivalent to an input sensitivity of 278mV for its rated 150W/8ohm output. Distortion is very consistent with output level, typically 0.004% from 0.1W-50W/8ohm and also with frequency, up to ~10kHz where figures climb closer to 0.01% (20kHz/10W/8ohm). Our sample had uniformly higher distortion on the right channel (0.008% vs 0.004%) but this is arguably of less concern than the disparity in DC offset (+8mV Left, +33mV Right). Otherwise, the response shows a mild and sensible HF roll-off amounting to -0.25dB at 20kHz and -0.6dB at 30kHz, figures unlikely to be overly affected by the A308’s 0.05ohm output impedance.

At 84.2dB, the A-wtd S/N ratio (re. 0dBW) represents a perfectly ‘average’ result for an integrated amplifier and comprises white noise, rather than hum from the power supply. As if to prove the point, its residual noise is just -74dBV or 0.2mV.

The MM input stage adds a further 40dB (x100) of gain with an inherent midrange distortion of ~0.006% and additional tailoring of the response, some -1dB at 20kHz with the right channel showing a -0.6dB dip through the upper midrange. Overall, a solid set of figures for a very capable amplifier.

World Verdict
Superb all rounder with fantastic clarity and punch. Good value despite the premium price tag.
If the name Audionet rings no bells with you, fear not, as I'd never heard of them either until the presence of this CD player was brought to my attention. In their native Germany the company are fairly well known and respected. Now imported by Wilson Benesch, they are hoping to repeat this success in the UK. And judging from first impressions of this beauty they should have no problems doing just that.

Wilson Benesch's speakers are some of the finest sounding and best built on the planet, so anything they associate their name with can't afford to be duff. And judging from the ART V2 (no comment about the choice of model name, please!) they are onto a winner. This is the way that many commentators rightly suggested that CD replay would go in these days of new formats. The lower end of the CD player market will encompass both audio and video, whilst the remaining CD-only players will be like this - heavyweight, serious pieces of audio engineering.

Firstly, I noticed the sheer weight of the box (just under 20kgs) that arrived on the doorstep and nearly got on the telephone to WB for them to send the CD player instead of the AMP II MAX they appeared to have sent instead. However, on breaking open the seal I realised that indeed this was the CD player and the reason for its awesome weight was the beautifully polished solid slab of granite that constitutes its base.

This isn't all that's different. Inside, the disc transport is placed atop a solid billet of aluminium, separated from the surrounding chassis by a suspension system of straps. So when I say the V2 is strapping, it literally is.

The chassis, granite apart, is made from low resonance MDF and the front panel is no less than half an inch thick and of metal alloy construction.

Aesthetically, the V2 is pure and effective. There are just four silver buttons on the fascia, plus a display window. In another departure from traditional the ART V2 is a top loading player, in the footsteps of the Sony SCD-1 and other quality designs, such as Sonic Frontiers. Once I had pushed aside a sliding panel (it's a manual mechanism) I found the stabilising puck that sits atop the disc that such top loaders call for.

Under the bonnet sits the company's own 'intelligent sampling' board, populated with surface-mount components. This is followed in the chain by a 24-bit/96kHz DAC that follows current high-end practice by being an upsampling type with digital filters and signal processing. The processing has two settings, switchable via the rear panel. And it doesn't stop there; the output stage features Mosfet devices in Class-A.

The DAC and transport sections are separately powered by toroidal transformers and the digital outputs (one BNC, one AES balanced and one phono, no less) are all bypassable. This is one seriously equipped machine, which almost justifies the price alone, without hearing a note of music.

My experience of German high end, which to be fair is pretty limited, has shown that their invariably impressive build quality raises expectations that are subsequently dashed. Often German hi-fi is super clean and efficient sounding, with good detail, but fails to really involve musically. This is far from the state of play with the V2. It has a sound that not only immediately impresses but also improves with listening, the mark of a quality bit of kit. When you find yourself raiding your CD collection to see how it fares with a variety of discs (usually, this only happens with vinyl) you know you've struck gold.

We're in the league of the Musical Fidelity 3-D Nu-Vista, Sugden Masterclass and Audio Analogue Maestro players here - heavyweights that not only look but also sound the business.

Detail, as you'd expect from a German company, is superlative. 4Hero's excellently recorded 'Creating Patterns' had enormously impressive lucidity but the ART V2 also emphasised the breadth of the...
review

recording, creating a big and all-encompassing sound that really took my breath away when compared to a £1,000 cheaper Meridian 506.24 player. Bass was solid and fast, but also warm, and overall the sound had a smoothness that introduces a touch of analogue that all the best players seem to have.

It is that detour from an overtly digital presentation that really impresses, much like Musical Fidelity's Nu-Vista spinner. It doesn't have the Nu-Vista's airy and ethereal treble; it's a darker and somewhat moodier sound, less 'hi-fi' in a way, but it certainly equals the Nu-Vista in terms of musical involvement.

Paul Weller's 'Stanley Road' was next on and revealed that the V2 had a way with vocals, which sounded crystal clear yet smooth and well bodied and projected slightly (not intrusively) to the front of the stage. Drums were well focussed and every layer of the mix was clearly recognisable, whilst unmistakably remaining essential parts of the whole picture.

Classical discs such as Mahler's profound 'Das Lied von der Erde' played by the Minnesota Orchestra on Reference Recordings and Faure and Ravel's piano trios on Hyperion also shone musically. There was a fine sense of space and air with both discs and a brilliant smack of realism in terms of detail and dynamics (which were almost to concert hall proportions). Even fairly dodgy (Bruckner 8 with Karajan on DG) or totally duff bedsit-style recordings (Tracey Thorn's 'A Distant Shore') had a certain something when played through the V2, which took hold of promising aspects such as phrasing and mood and made the most of them. Whilst this may not be sticking to the 'as close as possible to the source' school of thought, it's certainly preferable in many respects.

The ART V2 is representative of the best 'lower' high-end CD players around. Like the aforementioned Audio Analogue and Musical Fidelity players it offers great value when build is considered - it's superbly finished and looks fine on the shelf. Many would charge another £2,000 for this.

As for sonic performance, who needs high resolution when your favourite music sounds so good? The V2 is totally committed and involving. This is first and foremost a music lovers' player.

Gripes? Very, very few indeed. It's heavy and you need enough room for the top loading of discs - that's about it!

Being both immediately impressive and enduringly impressive, the V2 deserves your ears as soon as possible, if you are looking for a serious CD player.

Audionet ART V2 £2,300

Wilson Benesch
Tel: 0114 285 2656
www.audionet.de

MEASURED PERFORMANCE

This CD player has two key features: exceptionally low distortion - just 0.0004% at its high 2.55V peak output - and the modified response/stopband characteristics imposed by its switchable digital filter. Neither filter offers a useful suppression of digital images (just 6dB in case of the Lagrange filter) but they do trade a low-order HF roll-off for a reduction in the pre- and post-echoes that accompany traditional high-order FIR digital filters.

Like Wadia (Digimaster) and Pioneer (Legato Link) before it, AudioNet is balancing increased distortion in the frequency domain for reduced distortion in the time domain. The ultrasonic images released by both filters, however, will tend to make the V2 more amplifier fussy (or vice-versa) than usual, however. Meanwhile, the differences in response between the Lagrange and AudioNet filter algorithms are shown on the graph, the former typically offering a smoother sound.

Peak level overload was detected with the AudioNet filter but this should not be troublesome in practice. Otherwise, the 112dB A-weighted S/N ratio is very good indeed, as is the low 0.006% distortion at 20kHz/0dBFS, the mere +32ppm clock error and +0.0/-0.4dB deviation in linearity over a full 90dB dynamic range. The exceptionally low 155pspec of, primarily, data-induced jitter is the icing on a highly innovative piece of CD engineering.

PM Frequency Response <5Hz - 18kHz (CD)

Separation

1kHz 110dB 105dB
20kHz 95dB 96dB
Noise (IEC A) -112.7dB-111.8dB
Output 2.54V 2.55V

Distortion Left Right
-6dBFS 0.0013% 0.0010%
-30dBFS 0.0050% 0.0050%
-60dBFS 0.145% 0.135%
-90dBFS 2.70% 2.75%

World Verdict

Right up there with the best, the V2 is a superbly built and impressive sounding player that should also last a lifetime.
For much of the nineties, British loudspeaker manufacturers were disappointingly disinterested in using anything more radical than late seventies technology in their driver designs. Doped paper was still ubiquitous because of its cheapness and 'fast' sound, whereas polypropylene was the choice for 'premium' products thanks to its low distortion. In my opinion however, polyprop is great for making shampoo bottles but not much cop with music - it sounds 'quacky' in the mid-band and slow.

Not wishing to blow our own trumpet, but Hi-Fi World magazine’s campaign (plea?) for more interesting materials seemed to ‘set the scene’ for some radical departures later in that decade. The result is that nearly ten years later, virtually every loudspeaker worth its salt has some such exotic cone or tweeter. In this respect, Mordaunt Short’s MS914 is no different.

Where it does stand out from the crowd is its use of Continuous Profile Cones. Although this isn’t one of the company’s own technologies, its chief engineer Graeme Foy has spent many a late night refining this drive unit. The striking looking polypropylene coated aluminium cone has no central dust cap, running (as its name suggests) right across from one edge to another without a break. MS claim increased low frequency efficiency, extended frequency response and improved power handling.

In the 914, the bass/mid unit is 165mm in diameter, and comes matched to Mordaunt Short’s own aluminium dome tweeter. This is a 25mm affair which has got a new front plate profile for improved dispersion characteristics. The two are fed from a damped second order type crossover, mounted inside a well braced 900x205x270mm box, complete with a cavity at the bottom for mass loading. The result is a loudspeaker weighing in at 14kg, with a quoted power handling of 150W, an impedance of 4-8ohms and a claimed sensitivity figure of 89dB.

It’s a neat looking loudspeaker alright, giving the impression of a more expensive product than its £299 retail price would imply. Hook it up to your hi-fi straight out of the box, and you won’t get a commensurately svelte sound though. More than most, these speakers need ‘a damn good thrashing’ to break in, plus a good hour or two spent on positioning them and general fettling to give of their best.

Listen to them ‘cold’ and you’ll see why. The 914’s have a ‘stark’ sound that will cause a sharp intake of breath if you’re not ready for it. It’s extremely open and clean (as £299 speakers go) - indeed these are probably the most revealing speakers I’ve ever heard at the price. Not for one moment do they conceal, muddle, obfuscate or confuse. Rather, you get a very matter-of-fact verdict on everything from the quality of your system’s ancilliaries to the relative merits of the recording. It’s as if the 914’s say, ‘that’s it - like it or lump it!’

If you’re using a poor quality front end, then lump it you will. Driven by a high quality, sweet sounding CD player however - something like an Arcam FMJ CD23 - and a decent mid-price amplifier (I even heard them through an AudioNote OTO SE valve integrated) and you can’t help but be amazed. Undoubtedly, the midband is the star of the show, not just the sounds issuing from the CPC mid/bass unit, but the way it integrates with the treble. The two get on famously,
giving a seamless transition from low to high.

The Rolling Stones' 'Brown Sugar' is proof positive of this. First you notice the fine imaging and sense of scale (a sure sign of good phase coherence), then the large amounts of low level detail. Then you find your feet are tapping merrily away and you're thinking, 'wow, what a song!' By contrast, most similarly priced speakers make you wonder how long your ears will last, or whether you'll be able to stay awake till the first middle eight.

The next thing that hits you is the bass. It's less weighty than some other budget floorstanders, but extremely even and with a conspicuous lack of boom. As Bill Wyman goes up and down the fretboard, you don't feel like he's twanging some strings harder than others. Rather, it's very measured, yet satisfyingly tuneful. Only a slight boxy coloration right at the bottom offends, but this can be tuned out by judicious use of mass loading. The 914's LF performance isn't remarkable then, but - and this is critical - it's sophisticated enough not to impair your enjoyment of the music, or impede the rhythmic progress of the song.

The aluminium dome tweeter is an altogether more sophisticated affair that the shrill, tizzy thing that came with 1908s MS loudspeakers. Okay, so it's not totally neutral, and there's a definite 'fluffiness' to it that slurs the decay of hi-hats, but its coloration isn't offensive and indeed it can sound quite silky if fed by a high quality source. Its major sin is that it has one 'generic' cymbal sound, lacking the transparency to really tell you what's going on up there. This said, there are many thousand pound designs that are little better in this respect.

Cue up 4hero's 'Parallel Universe' and you'll get the measure of these speakers. They're musical to the core, more transparent than they've a right else these days, has combined a 4ohm bass with an 8ohm tweeter to get best voltage sensitivity - as much volume as possible for a particular volume control setting. Overall impedance measured out at 8ohms and, our analysis shows, there are some fairly extreme variations, meaning the speaker is reactive - not too good as far as the feedback loop of an amp is concerned. The 916 will interact with amps more than many designs; some may suit, others not. As a load it could be more amenable. Sensitivity measured 86dB, a normal value.

The 916 measures reasonably well, except as a load where it could be better. A partnering amp should be chosen carefully.

Mordaunt Short MS914 £299
Audio Partnership PLC
Gallery Court
Hankey Place
London, SE1 4BB
Tel: 020 7940 2200
**LETTER OF THE MONTH**

**MARRIAGE GUIDANCE CONSULT**

Dear Sirs,

Can you help avert a divorce? It all began when I suggested to She Who Must Be Obeyed that it was time we had a new hi-fi. Unfortunately, I picked a bad moment, as she had just returned from a coffee morning at one of her chum’s whose husband had just bought a ‘lifestyle’ system from a certain company who shall remain nameless.

Now, I happen to know that this particular couple have ‘loads of money’ and cloth ears! Spousie announced she wouldn’t mind something like that, or perhaps ‘one of those nice-looking Bang & Olufsen things’. Well, of course, this was totally out of the question, as you can imagine, so a serious breakdown in matrimonial relations was on the cards.

However, I persuaded her that if she allowed me a little time and flexibility, I could perhaps come up with something which, whilst eminently listenable to and approximating real hi-fi, also possessed a high WASAF (Wife and Social Acceptability Factor) rating. My budget is £3,500, absolutely top whack, for a CD-only system and I proposed the following:- Sugden Bijou CD Master, Quad 99 pre/power amps and the new Quad 11 Ls speakers on Kudos S50 stands. With cables, I reckon this lot will just about fall within my pocket.

I showed pictures of said items to SWMBO and she cooed approval. But my query is, will it all work well together? I regard you as our marriage counsellors!

Lance Yellow
Hertfordshire

Hopefully I’ll make some suggestions to keep your love off the rocks, Lance. There’s actually plenty of purist hi-fi alternatives around. As manufacturers have caught onto the fact that the likes of B&O and Bose are popular because they are incredibly interior friendly, so the market has increased drastically. Sugden, for example, were once infamous for their great sounding amps that were stuck in an aesthetic time warp. Now, behold the Bijou range! A superb sounding series of products with all the sonic Sugden attributes in a modern, dare I say stylish ‘midi’ sized design. Whilst not the cheapest alternative, the Bijou range offers superlative hi-fi quality in a smart and well built package. The CD player is a great little performer and so are the Quad 99 amps, incidentally (but the Sugden amps have the edge, for more money though). This would be my first port of call and the Quad 11 Ls would suit the sound quite well, as they have a sweet yet highly detailed sound.

Cyrus were making small and well styled hi-fi products years before the competition, and it’s taken them nigh on ten years to prove that they were right all along! The CD7/Cyrus7/PSX power supply combination is very fine. Small and stylish but with a big, detailed and smooth sound for under £2,000 for the system, without ‘speakers. Their own ‘speaker designs, such as the bookshelf CLS50 (£500 per pair) are a good match, if slightly pricey when compared to the competition. Stick with the 11 Ls for value and performance.

If you’re after a one box high fidelity solution then there’s only one port of call at your price point and

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Visit [www.arcam.co.uk](http://www.arcam.co.uk) for Arcam news, product information, technical support and advice on how to get the best from your system

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that's the Linn Classik. Already, indeed, a classic, it offers superlative sound in a small and easy to use package with great potential for upgrading. A range of Classiks can be linked in a multroom configuration, for example. At just over a grand Linn lead the market here - there's no competition up until the awesome Tag McLaren Aphrodite (truly the mother of all clock radios) and Calliope 'speaker combination at a cool £4,000-plus, which is above your budget but is so well built it would last until your Diamond Anniversary! SP

EVERYDAY HURTS?
I'd be grateful for any advice you could give me about upgrading what I suspect may be a rather unusual set-up. My main listening obsession is really from vinyl. I have a large record collection of over 20,000 items, soul, reggae and blues recorded in the 60s, on which I spend around two to three hours a day listening. For everyday 45s, some 75% of my collection, I've been using an old Technics Direct Drive SL2000 turntable, with its own arm and a series of MM cartridges, currently a Goldring 1042. Sadly, many of the discs are not in the best of condition, and the resultant noise is certainly not audiophile quality, but the deck has done almost thirty years of faithful service now!

For 'best' I've been using a lovely Alphason Sonata, with its own arm, and variable MC cartridges, currently an Audio Technica AT OC9. This produces a warmer, more mellow listening experience altogether. Both decks go through an Audio Labs 8000C pre-amp, using its switchable MC/MM phono stage. The Tape 2 outputs from this links to my PC soundcard for digitising music. The power amp is a Musical Fidelity Elektra E300 and my speakers are a pair of Monitor Audio CC700s. Any suggestions on how this could be improved with a budget of £3,000 would be very helpful, particularly concerning the front end which is getting very long in the tooth. I'd be grateful if you could bear in mind the practicalities of a lot of stop/start for playing 45s. In other words I think I need something pretty robust! John R.

I think you'd do well to kill two birds with one stone and get a brand new high quality deck that can play the quality DC motor, which allied to peerless build quality - from the springs to the main bearing - makes it an utterly bullet-proof design. I've used mine as an everyday hack since 1995, changed arms and cartridges a million times (or so it seems) and it still sounds just as good (better, truth be told) as new, while the finish is still immaculate (dust notwithstanding). As with all belt drive decks, simply keep the platter spinning and pull the disc clamp and record off while it's in motion. Speed changes between 33 and 45 are easily effected by pressing a button on the GyroPower PSU - simple as that. In my case, I often leave the deck on for days or weeks at a time (because I forget to switch it off) with no ill effects. Unlike many rival 'sprung subchassis' designs, the Orbe doesn't go out of tune however you treat it!

The question you're asking, however, is 'what about the cartridge?' The answer comes in the Orbe's ability to accept two tonearms at the same time - if you order one from Michell thus configured. You'll be able to use your excellent Alphason HR100 as your new 'everyday' arm along with the Goldring 1042, and a new Origin Live Silver 250 (£599) as your 'best' arm, complete with your AT-OC9. This done, you'll get dramatically better sound for your 'everyday' records while still being able to track the robust G1042. Then you'll be able to cue up the OL/OC9 combo on special occasions, and be amazed by the pace, power, solidity and musicality of the Orbe when it's running at full tilt. Ultimately, you
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might like to upgrade your OC9 to something like a Lyra Lydian B or Ortofon Kontrapunkt B when funds permit. DP

**HARSH REALITY**

Dear HFVW,

I am not happy with the way my system sounds, it's rather harsh to my ears. The system is made up of: Marantz CD 6000 KI (upgraded from Pioneer PD 9000), Raksan Caspian MkI (upgraded from Pioneer A400), Chord Chameleon 2 (upgraded from IXOS 104), TDL RTL3 MkI (upgraded from Celestion DL4), speaker cables made from Category 5 LAN cable based on TNT-Audio.com instructions (upgraded from CableTalk 3.1) two RA Yello power leads, and the CD player is supported by 3 oak cones.

As you can see I have spent a lot of money so far, but I am yet to be satisfied with my system. I really do not know what to change next. My suspicion is that the speakers are the weakest link. They certainly aren't refined, being more of party animal/head banging stuff.

I auditioned almost all of the B&W S2 and S3 and Castle Pembroke, but the sound difference/improvement could not justify an upgrade. The TDLs have big scale and punchy bass that I very much like, but the treble and midband hurt my ears, especially with cheap/bad recordings, and the CD6000 is rather an unforgiving player.

So where do I go from here? I'd like a warmer/flush but at the same time detailed sound, and I know the two do not mix together. Would the Tannoy R3 do the job? My budget is around £600-£800 and I listen to 80s music, jazz and a bit of classical.

Any help is very much appreciated.

Regards,

Jozef, London

It sounds as though you crave a bit of sophistication and smoothness, Jozef. The Caspian is a nicely balanced amp but although a very fine CD player, the Marantz CD6000 KI is a touch on the bright side. The main problem with your query is finding a loudspeaker in your price range that delivers smoothness, plus the punchy bass of your TDLs. The current trend is for fast and bright sounding 'speakers with only a secondary regard for smoothness and sophistication. The latest models from the likes of Tannoy, Mission and KEF all have this trait to differing levels. For these traits look to the likes of Opera, who make detailed and warm sounding 'speakers fashioned from solid hardwood. The SP-1 can be had for a bargain £500 or so but the larger SP-2s are over your price at £1100 but still worth a listen. There's also that old HFVW stalwart, the £700 Mission 782. This isn't as forward sounding as most current designs but still brings tuneful and fast bass along with superbly refined detail. It errrs on the dry side of things but won't disappoint in any way.

If you can consider a standmount there are also a couple of good options. Don't always think that a standmount will mean less bass - it's not always the case - in the past even our comparative measurements have showed this, too. The Elac Jet 205 at £645 will bring you a fine, smooth treble with its unique folded ribbon tweeter design yet has that Germanic attack and speed which make it an exciting listen, in combination with sweet, smooth treble.

For sophistication in both looks and sound it's worth checking out the superb new Quad I I L standmounts. These have a fine piano lacquer finish and a fast yet detailed and refined sound. Bass isn't overly deep but it's incredibly speedy and if there's low end aplenty on the disc, you'll hear it. When used with an amp such as the Caspian they will sound very fine indeed and at £370 will leave you some spare cash also. It must be stressed that they sound like a much, much more expensive 'speaker. The Tannoy R3s that you mention are a tad long in the tooth now. Such 'speakers are designed to follow current trends or fads. Whilst they had a rich kind of sound they were also a bit dry and lifeless. It's worth remembering that only truly good designs will stand the sonic test of time and these are few and far between. SP

**KIT CONUNDRUMS**

Over the years I have acquired various bits of hi-fi equipment, which I know very little about, so I suspect they were somewhat obscure even when new. I have no fewer than three turntables in good working order (B&O Beogram 1500, Fisher MT 6360 Direct Drive and Pioneer PL-120), plus two self-assembly kit decks produced by a firm called Input Design Ltd. They have mahogany plinths, and the instructions state that 'the majority of 9" tonearms will fit without problem'.

The speakers I have are an ancient pair made by Sony, and are obvious candidates for replacement. I also own a Leak Stereo 20 valve amplifier and a Counterpoint SA-7 pre-amp. A heavyweights Uher CG 310 cassette player completes the line up.

I would welcome advice on which items should be kept. Should it be one of the Input Design kits, one of the other decks - or just ditch the lot?

Is the Counterpoint SA-7 a good match for the Leak amp and should I keep the Uher cassette player? Which speakers would be a good match for the Leak Stereo 20? Friends have suggested Quad ESL77s, BBC Monitors and also the Quad 11 Ls as reviewed last month. I listen to mainly acoustic music on vinyl and cassette in a room measuring 13ft by 14ft. I appreciate that these may be difficult questions to answer, but I would be pleased to hear any suggestions that you have to make.

Andy Heaton

First your decks: the B&O is miles off the pace - it's a nicely designed, thoroughly engineered mid-price deck alright, but not 'real hi-fi' as we know it. The Fischer is early eighties cheapo mass produced rubbish - the sort of thing sold with a 'rack system' (remember them?) and not a contender for deck of the decade by far. The Pioneer is a rehash of the PL12 from round about the same time. It's a simple budget belt drive which sold for under £100 - it isn't half bad, but is miles behind the likes of a Rega R3. The Input Design kit decks is a mid-to-late eighties 'budget audiophile' machine costing just over £100, intended to be used with the likes of Linn's Basik LXY, Rega's RB250, etc. It too isn't bad, but again a Planar 3 would embarrass it. In my opinion, you'd do best to put all these in the classifieds and get a decent turntable like a Michell GyroDec SE with OL Rega RB250 and Dynavector DV10X4 to partner it.

This would give you an excellent source for your Counterpoint/Leak amplifier combination. This is actually stronger than you think, and should really sing with the new deck. To me the Uher is an unknown quantity - I
suspect it was very good in its day, but if you're serious about cassette I'd go either for a new Sony Walkman Professional (WM-64DC), a second-hand Nakamichi (any of the later CR or DR series) or possibly even a used Aiwa AX-007 or 009. These would be a dramatic improvement on the Uher, particularly the Sony Walkman Pro which is the best affordable cassette deck ever made in my opinion.

Speakers are very much a matter of personal taste. If high levels aren't important to you, a recently serviced pair of ESL57s would work a treat, particularly if partnered by a small REL active sub. If you like the LS3/5as sound, then seek out a pair of Harbeth HL-PS3, essentially the same but with all the 3/5's bugs ironed out. They're obviously superior but with all the 3/5's bugs ironed out. Still, none of the above will exactly perform like your first-class performers, and the costlier ES...
valve/hybrid amp designs don’t always have the kind of oomph you may want as a fan of dance music.

Unison Research, as you rightly say, make some of the best hybrid designs about. Check out their new DM valve/Mosfet power amp (reviewed in this issue) for a great example of this. It is a smooth performer that combines the power of solid-state with the sweet lyrical traits of the valve. Whilst having a smooth sound it also has oodles of power on tap and great, tuneful bass. Used with a simple preamp such as ATC’s £750 CA2 in balanced mode you’ll have a great sounding amp set up that’s also built to last. For an integrated - and cheaper, but no less effective - option check out the Unison Research Unico. Again, it is a valve hybrid design that offers great build, insight and value at £850 the Unico is a winner when compared to the solid-state competition.

As for an accompanying CD player, the choice is virtually endless. Good affordable options are available in the form of Rega’s great value Planet at £498 (a very ‘analogue-like’ player), Exposure’s 2010 at £599 (exciting and musical), Audio Analogue’s Paganini at £795 (smooth and refined), Cyrus’s CD7 at £800 (well detailed and smooth), and last but not least the latest generation Caspian player from Roksan - a long time HFW favourite at £995 and Musical Fidelity’s impressive new A3.2 at £999.

Favourite all-round speaker cables are from DNM (Reson MkI at £7 per metre) and Kimber’s 4PR (£94 for a 3metre terminated pair). SP

A GRAND OPENING
Dear HFW

Unfortunately, moving house means that I am going to have to part company with my present system in order to raise some cash. Can you suggest a lower cost alternative that will allow me to keep listening without cursing my mortgage provider? My system at present comprises of a Meridian 506.2 CD player with 502/556 amplification and AVI Bigatron Red Spot speakers. Cables are all by Chord. The sound I get at the moment is very detailed and usually refined. I realise that to a great extent you get what you pay for but there must be something that would fit the bill, just to push things even further, I would also like to add just a hint of extra warmth to the sound! (I know, I don’t ask for much do I?).

On a budget of around a grand, but less if I can get away with it, can you suggest a system that would keep some of the detail, and perhaps add a bit of warmth and sweetness? I hope to be able to hang onto my speakers, and was considering partnering them with something from Arcam’s DVA range, or maybe a second hand Marantz CD63Ki Signature so that I could spend a bit more on the amp. Any suggestions (other than ‘don’t sell it!’) would be very much appreciated.

Thanks
Mike Taylor
Manchester.

The down side of downgrading is finding a set up that will deliver a similar sound to what you’re used to. The Meridian sound is traditionally quite sweet and definitely smooth and warm, so if you require more of this then something isn’t working, and I think it’s the ‘speakers. AVI ‘speakers, whilst well engineered, aren’t the smoothest or most warm around. They’re well detailed and exact but not an ideal match for Meridian. If you need to get rid of some of your system to raise cash then sell the amps and ‘speakers and retain the Meridian CD player. This will give you a warm, sweet and detailed base upon which to build. Next we need to find a matching amp and loudspeaker. Don’t go for the Marantz/Arcam combination if you require sweetness and more warmth. The Marantz is quite forward and the Arcam amps a tad too grey for your requirements.

On the amp front look to the likes of a Cyrus 5 (£500), the Audio Analogue Puccini (£475) or a Rega Mira (£498). These all give a good account of themselves and offer a taste of the kind of level you’re used to at a reasonable cost. They range from 40W (Cyrus and Audio Analogue) to 60W (Rega) so will drive most modern day ‘speakers OK, although you’ll need to look for something with a fairly high sensitivity (87dB minimum) if you like one of the first two amps.

When it comes to loudspeakers the choice is virtually endless but it may be worth looking beyond the mainstream for the odd gem. For a standmount option one superb choice would be the stunning Quad I IL with it’s piano lacquer finishes, which not only looks and sounds stunning but costs just £370, half the price of similar sounding ‘speakers and some £600 cheaper than many similar lookers. It has a detailed and dynamically big sound but is never rough around the edges - in some ways it is a very high-end product. Other avenues to pursue are the likes of Castle’s Pembrokes, which are warm and pleasantly ‘traditional’ looking and sounding and the superb Epos M12 at £500. If a floorstander is what you’re after check out the Acoustic Energy Aegis Evo 3 for £350 which has great detail and weight, if not the ultimate sweetness. Stick with the Chord cable as their designs are well balanced and smooth and work well in the kind of area that you’re in.

SP

Keep the Meridian CD player and look to the likes of Rega for an amplifier
Akira, a Japanese TV maker, were looking for exposure at the show. They found it in a nearby room. Andy Whittle was the lucky guy at right. The KL show has more than just black boxes to look at.

Pioneer's DVDR7000 video recorder was priced at Rm6459, much like UK.

Audio Agile is a new name from Germany. The company has a wide range of products and Bjorn Langlie was busy giving demos to an interested Malaysian audience.

Noel Keywood travels to Kuala Lumpur, Malaysia, to see how hi-fi is faring in the Far East at the KL International A/V Show.

Tumbling DVD prices have had just as much impact in Malaysia as the rest of the world. But the Far East can be the Wild West I've found, software piracy and competitive trading giving Malaysians the benefit of some very low prices. As a result, DVD in all its forms dominates, elbowing aside traditional audio, as well as ageing formats like the video cassette.

Welcome to Malaysia and their yearly KL International A/V Show, where the delights of the East — in all forms — were on display over four floors of the JW Marriott hotel in the heart of Kuala Lumpur.

This year KL was cool, a nicely simmering 32 degrees Centigrade or so, with humidity right up at the top of the scale as usual. No matter though because with an unchanging climate like this, buildings and cars are air-conditioned. And it was whilst walking through the cool air-con'd malls of the Sungai Wang (Fragrant Garden) Plaza that I saw just what was helping drive the local market.

Neatly laid out stalls in front of open shop units held trays and racks loaded with video DVDs of every description, including all the latest big budget movies, like Spiderman, as well as lesser known titles like Dark Blue World. These movies cost just Rm10 (ten Ringgits), or £1.70, and I was being offered ones for as low as Rm5 — less than £1! O.K., for this price you get a coy looking Chinese girl dressed in a Chong Sam, singing an impossibly elaborate song in Cantonese, with a few characters hitting gongs and things in the background, but it's still better than S Club Seven. The packaging and discs looked genuine enough, but at these prices I assume they were copies.

DVD BREAKTHROUGH

With DVD everywhere at a price any Malaysian could afford, not surprisingly it has taken over. I didn't see DVD-Audio discs (or SACDs) but doubtless they will follow. The malls also housed three hi-fi stores and a few music shops, CDs being available at prices much lower than...
ERN PROMISE

Balanced Audio Technology, an American company, specialise in complex valve amplifiers. Here they were showing a new MOSFET/tube hybrid, the VK300x.

Millennium A/V were running a pair of locally designed Loth-X quarter-wave horns that sounded fast and clean. They also sell our own World Audio Design valve amplifiers

the UK of course, hovering in a range from 19Rm to 29Rm, or £3 to £5. With food, rent and salaries being roughly half that of the UK these prices actually align with our own.

Quite why I don’t know, but KL is not short of giant hotels, which contain shopping malls, offices, car parks and heaven knows what else, apart from huge numbers of rooms serviced by columns of lifts. It was in one of these, the smart and spacious JW Marriott, that thousands of people came over three days to see what was new and desirable in audio and video. Whilst DVD and video might have elbowed audio aside recently, high quality audio is very much in the DVD specification and I fully expect 24/192 digital audio recordings of astounding quality by today’s standards to come to the fore eventually, as manufacturers seek new attractions and sales avenues for DVD. Recording studios need to get used to the new specification too; it will take 5 years or so for all this to happen.

The big Japanese companies were all demonstrating their latest technologies and, perhaps surprisingly, British companies were prominent in quality audio. The rest of the world, notably the USA and Europe have yet to discover the delights of Malaysia it seems, although Bjorn Langelie of German Audio Agile was doing a stout job in the heat and crowds, whilst tropics-hardened Brits, Aussies and Kiwis preferred to take it easy with a Tiger beer or two.

BRIT PACK

Pioneer were promoting their DVDR7000 DVD video recorder, priced around Rm6000 (£1000), but this year Philips were outgunning them with their new and less costly DVDR890, priced around Rm4600 (£770). Meanwhile, among the Brits Mission’s imposing Pilastro loudspeaker worked well in the demo room, producing an impressively fast and solid sound.


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Two outstandingly musical players, free of digital "nasties", are the WADIA 301 and the new OPUS 21 from RESOLUTION AUDIO.

Both have built-in volume and can drive the power amp direct – NO PREAMP required. Both can also accept digital inputs up to 24/96kHz from other sources. Feed in a DVD or DAB tuner and make the player the centre of an all-digital system.

The compact Opus 21 with ON-BOARD UPSAMPLING is the first product in a new stylish range, to include a power amplifier and a tuner. See www.aimdesign.com

Upgrading the SOURCE gives better results than spreading the same money over more components. If you think that only silly people pay more than £1500 for a CD player, listen to these two. They will RE-WRITE YOUR IDEAS, completely.

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SUPPORTS: ARCO, KINABALU, STANDS, UNIQUE.
Tong Lee Co were demonstrating a large range of Antique Sound Lab valve amps from China, with prices down to £500, or even less for a small hybrid. Valves might attract anoraks in the UK, but in China they seem to attract pretty girls!

A music shop in Sungai Wang Plaza, an air conditioned shopping complex, sells CDs for RM19-Rm28, or £3-£5.

companies. Mission had the best sound of the show with their stunning high end Pilastro loudspeakers and Meridian have edged into an almost unique market position with their DVD based range of top-end audio products. On display were their impressive DSP8000 active digital loudspeakers, 596 DVD player and 568 digital surround-processor.

Exposure are now funded by a Malaysian company, so their presence was strong and, as always, Welsh design engineer Phil Jones, who helped found Acoustic Energy, flew in from his China factory to represent AAD loudspeakers and a new, personal venture, Phil Jones Bass. Phil has come up with a tube bass amp of frightening specification. To get 650W of output he has used four 813 transmitter tubes. The internal HT lines run at 1800V, no less, and he has found a Chinese person willing and able to design the output transformer and carry out test work. At these voltages your first mistake is your last touch an anode and you’d end up fried rice! Bass players after the ultimate trip should go to www.philjonesbass.com. And of course our own World Audio Design kit valve amps were there, being demonstrated by Millenium A/V through some interesting Loth-X horn loudspeakers equipped with single full-range drivers.

DVD dominated the KL Show this year, which is as you’d expect because it’s a big seller everywhere at present, more so in Malaysia because of the software ‘situation’, shall we say. British companies continued to promote quality audio though and I can’t help feeling that when DVD Audio becomes more widely available the emphasis will swing back towards this interest. Until then the KL Show remains a great place to see what is happening in the Far East where, after all, for of the world’s electronic products are now manufactured.

Philips had a large room for their products this year, with LCD TV and DVD video recording given prominence, but MP3 audio from Expanium sound systems was also there.

A long line of Chinese valve amps with the manager of the importers, Ling Wen Ang, looking serious at the other end.
Mission's latest range of loudspeakers features a high-tech new look and new drive units. Simon Pope listens to the entry level floorstander, the m52.

There are those hi-fi enthusiasts that try to avoid anything they regard as run of the mill. And there are plenty of mainstream manufacturers with 'speakers that are not overly exciting to listen to and look at, but invariably the likes of the big specialist names such as Tannoy and KEF rarely, if ever, cock up when it comes to basic design engineering. You get a fundamentally good product from them, free of serious flaws. A certain reviewer or retailer may not personally like the sound of a certain model but it will, all the same, have credible engineering theory behind it, executed to a high level. The same cannot be said for many apparently more innovative producers often gloriously unaware of their product's serious shortcomings.

One company that maintains a consistently high standard of engineering is Mission. They have an ever evolving and developing range of products - no mean feat. The likes of Mission only employ designers and engineers whose work stands the test of time, and who also have a proven track record. Such a policy ensures quality levels are consistently high.

The last product from this recent range we reviewed, the m51, was a good 'speaker yet has had a couple of cool receptions from industry observers. This is probably because it ‘competed' directly with another stonking product (the 780) from the same company. Mission, of course, would say that it didn't compete but merely complimented or accompanied the 780 in the product stable. In a way the Mission response is right, as whilst I personally didn't think the m51 reached stellar levels, it wasn't a bad speaker by any stretch of the imagination (I could point out plenty of those at twice the price - invariably 'garden shed' jobs). It simply sounds different, with more colour and bloom - which isn't always a bad thing as plenty of neutral 'speakers are less exciting to listen to than a shipping forecast.

However there's no such immediate competition here, as the m52 is £300 cheaper than the equivalent entry level floorstander in the 780 range, the 782. The 782 has a side firing drive unit for bass support whilst the m52 is a standard bass reflex ported design. Build quality, though, isn't far off the superb standards of its more expensive cousin. The cabinet enclosure is commendably thick and apparently free from resonance. It's a fourth generation Transverse Folded Cabinet Technology (TFCT for short!) design and features a 38mm thick front baffle for extra rigidity. There is serious internal bracing and an incorporated plinth-like bottom base above which is an enclosure with the possibility (but not necessity) of sand filling. The cabinet is solid enough to work well without sand, but the extra weight and damping provided by a bag of dried silversand, available from builders merchants, is usually worth the effort. It makes bass really clean and punchy.

The drive units are in Mission's standard Inverted Drive Unit Geometry (IDG for short!) which has proven in past designs to provide a pretty seamless and well balanced sound. The new 15cm bass/mid unit is called a Paramid design and utilises a cone formed from a "sandwich of Aramid fibres" (tasty, eh?) and is fitted with a flexible nitrile rubber surround. The accompanying 25mm tweeter is a microfibre dome unit which is mounted on the moulded front plate but interleaved from the front baffle by a layer of damping foam with the aim of removing mechanical vibration from the unit. The crossover uses high power...
silicon steel inductors and polypropylene capacitors for 'audiophile grade' performance. To the rear we have bi-wire binding posts and a low turbulence port. The overall look of the m52 may not be to everybody's taste but the front silvered plastic moulding is certainly striking and makes them photogenic. They stand a reasonable 89.9cm high, making them unintrusive in a domestic situation. The slim cabinets provide a smallish footprint.

Using a Cyrus 7 for amplification, the sound of the m52s immediately impressed. I found them better balanced and pound for pound bigger sounding than their bookshelf brothers. Playing Siouxsie And The Banshee's 'The Rapture' through a Sony S55ES SACD/CD player resulted in a big and surprisingly warm sound that was free from any treble harshness.

Imaging, as always with Mission designs, was superb. You get a real 'out of the box' sound with the m52s when the amp and recording are of compatible quality. But here's the rub. Combine them with a bright sounding amplifier and you won't get the most neutral sound balance. They ideally need a neutral or even slightly warm sound to really blossom. From a compatible source they will image as well as anything you'll encounter bar an electrostatic, and these 'speakers have a great sense of stage depth too. For bass control, the m52s need to be a fair distance from a rear wall, then they provide a muscular and deep sound that's very impressive.

With jazz and classical recordings, the m52s showed good detail - not up with the 722s, mind, but still good. Cymbals were sweet and smooth and the natural 'space' that they create gave a good acoustic ambience in Mikio Masuda's jazz trio in the 'Blue Dumplings' CD and the Florestan Trio’s realistic SACD recording on Hyperion of the Fauré and Ravel piano trios.

The M52s are a great, fun 'speaker and used with the right amplification such as a smooth and detailed sounding Cyrus 5 or 7, or a smooth Creek amplifier, they'll sound big and full with a brilliant sense of depth and space that belies their pretty humble dimensions. Dynamically they won't frighten the horses so there's little contrast of mood, but that's by the by. Their big sound also makes them a good choice for combination home cinema and hi-fi applications.

When it comes to value for money floorstanders Mission deliver the goods time and again. The m52s were impressively clean and fast, with great imaging, but they do need to be partnered with care. As for the space age look, you'll either love it or hate. Personally, I like it!

Mission m52 £399

Symphonix Ltd.
Stonehill
Huntingdon
Cambs PE29 6EY
Tel: 01480 451777
www.mission.co.uk

**MEASURED PERFORMANCE**

The m52s are what I term "academically flat". You can see from our analysis that their measured frequency response is flat within 1dB or so right across the audio band - quite a feat. In my experience though this produces a loudspeaker that, in the average home with reflective walls and ceiling, sounds dry, light and even bright. I wouldn't expect the m52 to stray too far from this description in terms of basic tonal balance. It will sound very detailed, fast, likely clear and certainly concise. The tweeter's response is smooth and peak free, so it should sound smooth enough and integrate well.

Knowing Mission's predilection for a bright balance the m52s look very much a part of the breed. But also Mission loudspeakers image very well and the deeply curved, vertically asymmetric cabinets will help greatly in this area. Cabinet contour and shape has an amazing affect on imaging, especially in divorcing it from the box.

Measurement shows the port does not go so low, down to around 30Hz. The port is tuned high, to 50Hz, and it doesn't optimally damp the bass unit, a slightly unusual result. The rest of the impedance curve is smooth enough, low reactance suggesting good amplifier matching with little energy return.

Sensitivity was average at 85dB, nothing special for a floorstander of this size, where I would expect 87dB or so, so the m52s will need some power - at least 60W.

Well engineered, the m52s will sound pretty fast, clear and likely punchy, but not warm. They are well engineered but may be challenging with a bright amp like a Sony or Marantz. NK

**World Verdict**

Match them carefully with a smooth amp and the M52s will sing like a fat canary. Great imaging and a big out of the box sound ensures enjoyable listening.

Mission m52 £399

Symphonix Ltd.
Stonehill
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Cambs PE29 6EY
Tel: 01480 451777
www.mission.co.uk
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David Price traces the history of one of Britain’s most changeable loudspeaker manufacturers - Mordaunt Short.

Think of a name - a British loudspeaker manufacturer that we’ve all grown up with. Tannoy conjures up images of its ‘Dual Concentric’ designs. If it’s Wharfedale then maybe it’s those classic sixties Dovedales and Teesdales. Quad - of course - is the electrostatic company. Celestion, for eighties children like me, can only mean the ubiquitous SL6. What then of Mordaunt Short, a familiar name that’s always been well known and respected, but for what?

It isn’t that the company has never made winning products - quite the reverse - but that its ethos has changed over the decades more dramatically than most. Some remember MS as a purveyor of beautifully crafted loudspeakers such as the 1970s Pageant. To others, it’s that range of innovative budget boxes from the 1980s, pre-empting that decade’s fad for titanium dome tweeters, that rings a bell. Confused - you won’t be!

To understand Mordaunt Short, you have to trace its labyrinthine history - with all its changes of ownership and factory moves - right back to its inception in 1963 and a certain company called Mordaunt Sound Reproducer. Building loudspeakers using both electrostatic and ribbon tweeters, it operated out of an office in the heart of London’s Soho. At the same time, down the road in Knightsbridge, a certain Mr Rodney Short was building up a specialist hi-fi section in the music department of London’s famous Harrods department store.

Norman Mordaunt’s background was at Tannoy, where he’d worked on its Dual Concentric drivers, and at Decca where he was part of the team that designed the legendary FFSS phono cartridge. He came to meet Rodney Short, who had extensive experience in retailing which proved invaluable to...
The high life - the company's matching aluminium dome tweeter integrates with the CPC mid/bass superbly

the business side of running a company. In the 1963 the union began, the company operating out of a small unit in Fulham's Hollywood Road, with - interestingly - most of the manufacturing subcontracted out to suppliers in South London.

In 1970 the company decided to stop sub-contracting and do all production in-house, necessitating a move out into a small self-contained factory near Petersfield in Hampshire. At this time, just ten full employees were working for the company, but things were soon to change. Rodney Short's health deteriorated, causing his brothers Michael and Christopher Short to become involved, and Norman Mordaunt retired, replaced by Michael Dedman as Senior Designer.

1973 saw the company commencing manufacture of the DSB208 drive unit, its first in-house design. Despite the oil crisis slowing growth, by 1975 it was large enough to buy its own factory at Durford Mill, also near Petersfield in Hampshire. This marked the beginning of a fruitful time for MS, as the famous Carnival, Festival and Pageant speakers were launched. These garnered rave reviews in the hi-fi press, with the mid-price Pageant proving a particularly successful partner for the new wave of British audiophile separates such as the (then) new A&R A60 amplifier.

In 1983 however, a dramatic volte-face was made with the new MS20. Whereas the company had hitherto produced refined designs for well-heeled and fairly conservative customers, here was a budget 'blockbuster' clad in black ash-effect vinyl wrap! The MS10, 15, 30 and 40 soon followed, giving Mordaunt Short a budget range with 'something for everyone'. A parallel '100 series' of loudspeakers offering higher tolerated drive units, crossovers and real wood boxes followed, but didn't capture the imagination of the eighties hi-fi market in anything like the same way.

This new range showed a dramatically different company to that of a decade previous, very much focussed on giving the public what it wanted at a bargain price. Further proof of this came in the shape of the 'Ti' range, which added (not wholly successfully, some say) a Titanium dome tweeter to the existing designs. Somewhat opportunistically perhaps, this reflected the eighties fashion for 'metal dome' tweeters. For a while in the mid eighties, Mordaunt Short seemed like it had the British budget speaker market to itself, such was its success.

What followed was a merger with two of the other key eighties players, Tannoy and Goodmans. The result was that in 1987 MS became one third of Europe's largest loudspeaker manufacturing group, Tannoy Goodmans International plc (TGI). The company went public and became fully quoted on the London Stock Exchange.

The acquisition of Epos Acoustics in 1988, and the recruitment of its founder Robin Marshall as MS's Technical Director speeded the company's use of leading edge technology. First came Phil Ward's range-topping Model 442 which used advanced thinking to reduce cabinet colorations. Then the Series 3 range arrived in 1989, the first from a UK manufacturer to use advanced injection mouldings, which were both easier to build and more rigid. Going from strength to strength, in 1990 MS won the Queen's Award for Industry for Export Achievement, and duly moved to a new factory with a huge extra capacity.

The nineties saw the 5 series, which broke new ground with the introduction of MCS technology in bass and mid range drive units. The process was patented and licensed to other loudspeaker manufacturers. Then came the first of the HE (Home Entertainment) range, and the Decoder One (the first Dolby Pro Logic Decoder designed and built in Europe) arrived in 1993. The core range of budget boxes went through more incarnations, with a new anodised aluminium tweeter arriving in 1996 to much critical acclaim. By 1999, the company's 'glory days' seemed to be over - fierce competition in the budget loudspeaker section had left the company off the pace. Then TGI plc decided to sell the brand to Audio Partnership plc, the manufacturing arm of Richer Sounds. This marked a
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HI-FI WORLD 2002

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Kuzma - well respected turntable/tonearm. Origin Live - their brilliant new tonearm, plus Rega arm wiring and counterweight mods.
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Sugden
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dramatic change, as the company went back to its original practice of subcontracting, but this time in the Far East. Now, the company has its own design centre in the very English environs of Shoreham-on-sea, but all manufacturing is outsourced to China. Mordaunt Short's Paul Masson says this is the best way to make excellent sounding products at an affordable price. The new 900 series is a particularly interesting proposition, using a seamless hard anodised aluminium Continuous Profile Cone (CPC). Although not sourced from MS, it has been extensively reworked to give the required characteristics. The result is a new range of charismatic loudspeakers from Mordaunt Short, fit for the 21st century.

**Short Talk**

David Price chats to Mordaunt Short's chief designer, Graeme Foy.

**WHAT MADE YOU FIRST GET INTO HI-FI AND WHEN?**

I was a kid, and my elder brother had bought his first separates system. I watched closely as he painstakingly set everything up, switched on, and I was hooked from the moment the needle click-bumped into the groove!

**HOW DO YOU RATE DIGITAL AUDIO COMPARED TO ANALOGUE, AND TUBES TO TRANSISTORS?**

I rate them in the same way - by their ability to produce a convincing sonic portrayal within the context of the system into which they are integrated. I've heard good and bad examples of both, and each still has its place (tell me who still doesn't like a little valve 'warmth'!). We try very hard at MS though not to compromise the operation of the loudspeakers by biasing them toward one particular equipment platform. It is however a fact that digital audio now has precedent to the recording, production and consequent reproduction process, having fundamentally changed the creation of commercial audio.

**WHAT DO YOU THINK OF THE NEW DIGITAL FORMATS?**

They are just the next part of digital audio evolution, mostly driven by bandwidth at present. The end effect seems quite revealing, and begins to show the limitations of current loudspeaker technologies. As far as multi-channel is concerned, if the software could be produced in a more structured way, and agreement of the basic physical and psychoacoustics requirement of such a reproduction system put in place, then we might see real progress. I do believe that the extra audio cues in multi-channel audio can and will surpass the traditional stereo expectation. Then again, who's to say that maybe the whole thing could be virtualised, and that technology will steer us toward going near field? So maybe just a matter of time, and early days yet.

**WHAT'S THE KEY TO DESIGNING A SUCCESSFUL LOUDSPEAKER?**

To try and embrace the design as a whole, and respect the compromises.

**WHY IS THE 914 DESIGNED THE WAY IT IS?**

The CPC woofer allows for clean dynamics, and so matches the new aluminium dome tweeter well; we capitalised on the clean-looking front cosmetic by achieving minimised diffraction effects, while the aluminium/ MDF laminated front baffle is highly rigid but simultaneously self-damped. Internally, the bracing was carefully positioned to minimise panel resonance and the crossover uses specific components chosen for their low distortion properties.

**HOW WOULD YOU CHARACTERISE THE SOUND?**

They play music most importantly, in a full-bandwidth sense, with poise, openness, and clarity. I have been told that they are representative of a true budget audiophile product: that's a real compliment considering the retail price.
generally speaking, Fifth Symphonies are good eggs. Offerings from Beethoven, Mahler, Sibelius, Tchaikovsky and Vaughan-Williams all shine from the symphonic canon. Here's another one. The Fifth Symphony of Dmitri Shostakovich (1906-1975) is a carefully crafted masterpiece, which arguably rates as the most balanced and accessible of the fifteen symphonies he completed. I've chosen the glorious reading of Leonard Bernstein, originally recorded at Symphony Hall, Boston on October 20th 1959, with Bernstein wielding his stick over the New York Philharmonic Orchestra. It's been reissued on a generous CD from Sony. Go and buy it - and then try to tell me you don't like classical music. From the sensational opening movement, with its serene jaunt to the final notes of a shimmering sashay, this is one brilliant musical encounter.

Born into a Russia of Tsarist privilege and widespread servitude, Shostakovich died in a Union of Soviet Socialist Republics enmeshed within the chill of a cold war. His Fifth Symphony was composed in 1937, in what was then known as Leningrad. He was 30 years old and his first child (a daughter, Gallina) had been born the previous year. In 1936, his widely performed opera, Lady Macbeth of Mtsensk, had been attacked by his country's state-run mouthpiece newspaper, Pravda, in an article which included an implied threat against the composer's life ("This is playing with nonsensical things, which could end very badly.").

As the world knows, the aspirations and hopes of the 1917 Russian revolutionaries had all but faded to nothing by the 1930s and Shostakovich had grown up with the demise of idealism. His musical life was to be one of constantly attempting to please and appease the authorities, none of whom, certainly in the Politburo, would have as much intellect as Shostakovich. In other words - they wouldn't be quite sure when someone was having them on.

The Soviet Union was in the midst of Stalin's "Great Terror" in 1936 and 1937. Millions were being arrested and tortured then summarily executed or exiled to Siberia and Central Asia. Shostakovich's sister, Mariya, was exiled to Central Asia in 1937 and several other relatives and friends disappeared. Marshal Tukhachevsky, an important friend and early patron of Shostakovich, was arrested and executed at the time that Shostakovich was composing the Fifth Symphony. The Fifth Symphony, then, was seen as Shostakovich's public response to the attack on his music and character that began with the Pravda article. It was an heroic (some would say foolhardy) action to compose the Fifth Symphony using such "Western" structures (indeed, the opening bars have been described as sounding like film music) and lyrical phrases. But he got away with it.

The symphony was first performed in Leningrad in November 1937. It is said that the applause after the symphony finished was longer than the symphony itself, so overcome were the audience with the emotion of having listened to a piece of music that wasn't merely political hackwork; and that wasn't afraid to display some real human emotion. With the Fifth Symphony, Shostakovich escaped from the stylistic instability of his earlier works, finally forging the personal style that he used in his subsequent compositions. Gustav Mahler was a clear progenitor of both the Fourth and Fifth symphonies, but the latter represented a drastic shift in technique. Whereas the earlier symphony had been a sprawling work, founded upon a free proliferation of melodic ideas, the first movement of the Fifth was marked by melodic concentration - certain particles providing the main bases of music that grows organically to a relentless climax. This steadfastness is reflected elsewhere in Shostakovich's work in his liking for the monolithic Baroque structures of the fugue and chaconne, each of which grows from, or is founded upon, the constant repetition of a single melodic idea.

This recording of the Fifth Symphony by Bernstein and the New York Philharmonic was made immediately following a historic concert tour of the Soviet Union in 1959. Bernstein made a specialty of this work, and the atmospheric intensity of his interpretation is yet to be matched. No other conductor has given the second movement scherzo more bite or made the third movement largo more desolate and barren. This reissue also includes Bernstein's superb performance of the Ninth Symphony, a mischievous, sometimes scathing work that seems to be Shostakovich's answer to Prokofiev's "Classical" Symphony. Almost half a century later, there's still no better introduction to Shostakovich's symphonic output than this.

*Dmitri Shostakovich's Symphony No 5
Bernstein/NYPO is on SONY CLASSICS 61641.
Simon Pope encounters the 'budget' preamplifier from ATC, the CA2.

ATC first plied their respected trade in the world of professional audio monitors and domestic ' speakers. They've also recently dabbled in electronics with a small range of pre and power amps, plus an integrated. The CA2 featured here is billed as their 'budget' preamplifier. At £750 it's not my idea of 'budget' but when you considered that their other preamp is in the £3,000 region the 'budget ' tag doesn't seem too far-fetched.

The CA2 is a very smart and compact bit of kit; robust and well built but also sleek and smaller than your average sized hi-fi component. Its output is only via XLR type connectors, favoured by active loudspeakers. However, decent cable companies will knock you up a set of your favourite interconnects in XLR to phono configuration for a little extra.

The CA2 can, of course, be used as a direct connection to active monitors but it can also be used as a very handy standard hi-fi preamp. There are five line level inputs all with unbalanced RCA phono input sockets, although for £280 extra the Aux 2 can be transformed into a moving magnet or moving coil phono input. These are selected neatly by a digital, five position rotary control or via the supplied infra red remote. There's also a handy headphone jack which can be used with (should you wish!) or without the main speakers. The volume control on the front plate is a motorised model and can be controlled via the supplied remote.

Soundwise the CA2 is very good and has all the right characteristics of a decent preamp - in other words it doesn't have any! Too many preamps fall into the trap of being too complicated and often this affects the sound in one way or another. The CA2 has the just right amount of facilities not to result, in this. It sounds open and full but is also wonderfully transparent, an essential feature in a preamplifier, in my view. I was also pleased to hear that it didn't have the forwardness and edge that some 'professional' equipment can have. Detail, in true professional tradition, was well conveyed - all the panned tape effects in Paul Weller's version of 'I Walk On Gilded Splinters' were fantastically highlighted.

I was pleasantly surprised by the CA2. Good preamps are few and far between, especially in solid-state form. If you're after a high quality audiophile preamp that won't cost the earth you could do a heck of a lot worse than to check this one out.

ATC CA2 £750

ATC Ltd
Gipsy Lane
Stroud
Gloucestershire, GL6 8HR
Tel: 01285 760561

There isn't a great deal to measure in line level preamps, because in electronic terms they don't do much, at least when there are no tone controls. The CA2 provides a modest gain of x2 at full volume, so with a power amp of 1V input sensitivity the CA2 would have an input sensitivity half that, or 500mV. This is around the norm, nowadays, although to be a bit more flexible a gain of x3-x4 is more useful, allowing old, low output sources like cassette decks and tuners of yore to be hooked up, should the need arise. After all, not everyone has, or wants to use bright, shiny new kit.

With such low gain the CA2 inevitably produces little noise, has excellent channel separation and minimal distortion, right down at the bottom limit of the measuring equipment used. It is a wide bandwidth design; band limiting has not been applied.

Measurement showed the CA2 offers a nice, clean and simple performance free of problems. NK

CD/tuner/aux.
Frequency response 5Hz-150kHz
Separation 90dB

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World Verdict
A great preamp for the money with an open and transparent sound. Good looking and very user friendly, too.
NEW DEMONSTRATION ROOM NOW OPEN AT 12A SPRING GARDENS, NEWPORT PAGNELL.

KIT6550 VALVE INTEGRATED AMPLIFIER KIT & KAT6550 VALVE POWER AMPLIFIER KIT

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These are our new 6550 series amplifiers. A pure class A design providing 40 watts into a 8 ohm load (available in a 4 ohm version if required). A truly high end design by Andy Grove, using Svetlana 6550Cs in push-pull (any 6550 or KT88 tube can be used with this amp). It features valve rectification (5U4) a choke pi filter power supply and is hard wired. Weights 19kg with dimensions 390mm(w) x 330mm(d) x 190mm(h).

**KaT6550 upgrade kit now available £120**

With valves or 220mm(h) with cage. Simon Pope says – “If you favour attack and rhythmic grip, together with a smoothness of sound that’s incredibly easy to live with, the KIT6550 could well be the kit amp for you. The 6550 is one for those who like a valve sound married to the attack and clout of a good quality solid state design.”

**Ke184 VALVE INTEGRATED AMPLIFIER KIT**

This is our brand new, low cost, beginner level amplifier kit. It features a pair of EL84 valves per channel in push-pull configuration. They give 15 watts into an 8 ohm load - plenty for medium sensitivity loudspeakers. The output transformers are Ultra Linear, keeping distortion down to a minimum. Up front the ECF80 input/phase splitter valve has an extremely smooth sound. The Ke184 has very low hum, to solid-state standards. For simplicity the kit is built on a printed circuit board. A strong steel chassis is fronted by a 3mm anodised front panel and attractive chromed custom made knobs. There are five line level inputs, plus one monitor input, with a tape output included, all controlled from the front panel. The phono input sockets and 4mm banana socket speaker terminals are gold plated.

At rear is a mains switch, an IEC power input and an earth post. This kit is aimed at beginners. The instructions include pictures as well as diagrams, making them very easy to follow. At a UK price of £278.00 all inclusive you cannot ignore Ke184. Simon Pope says, “The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound. The Ke184 will highlight all the intricacies and depth of detail in your favourite recordings whilst retaining a warmth and fullness that is almost exclusive to pure valve amps and is rare at this price point.”

Ke184 weighs 10kg. External dimensions with valves are 300mm(w) x 270mm(d) x 150mm(h).

**2A3 PSE INTEGRATED AMPLIFIER KIT**

The 2A3 PSE integrated amplifier offers a seriously hi-end sound, but without the cost usually associated with single-ended amplifiers. The stereo chassis houses, on the output, 2 x 2A3 in parallel single ended configuration and a single 6SN7 as the driver tube per channel. The valve rectified power supply consists of a 5U4, with a combination of a hefty 10H chokes and 2 x 100uf 500V capacitor in a pi filter configuration, giving superb smoothing. This feedbackless design provides 8.5 watts into an 8 ohm load, so a good sensitivity speaker is required above 91 dB. It can accept 6 line-level inputs fully controllable from the front panel. We provide the excellent Alps Blue potentiometer as standard. The amplifier is hard wired so plenty of scope for tweaking in the future. Simon Pope says, “The 2A3 PSE is extremely impressive piece of kit, good imaging, wide sound stage, nicely extended on the high frequency and tremendous bass thump - I want one”. Weight - 20kg, external dimensions with valves fitted - 390mm(w) x 360mm(d) x 220mm(h).
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**ALL NEW SERIES II MODULAR PRE-AMP KIT**

The PRE-II is a valve pre-amplifier with six inputs, tape monitor and two sets of output sockets. It utilises a high quality line driver transformer and x5 gain. The PHONO-II is a dedicated valve phono stage that incorporates a step-up transformer for MC users. Finally, PSU-II is a power supply unit that feeds both the PRE-II and PHONO-II.

- **Power Supply Unit (PSU-II):** £195.00
- **Pre-amplifier (PRE-II):** £195.00
- **Phono Stage (PHONO-II):** £110.00
- **Moving coil step-up transformer:** £77.00
- **Passive pre-amplifier (PAS-II):** £215.00

**NEW!**

---

**KAT34 VALVE POWER AMP KIT & KIT34 VALVE INTEGRATED AMPLIFIER KIT**

- **KAT34 Upgrade Kit:** £90

**NEW KITS**

**KAT34 upgrade kit now available £120**

Simon Pope says, "This integrated bring together the best sonic virtues of our KIT88, KIT34 and top of the range 300B PSE in an affordable package. The highlights of the sound are a deep and taut bass response, together with an open and highly detailed mid and high frequency response that only the best valve designs can achieve...a true valve classic."

- **Weight:** 22kg, **External dimensions:** 390mm(w) x 360mm(d) x 210mm(h)

---

**300B PSE MONOBLOC KIT**

Our Parallel Single Ended amplifiers offer ultimate sound quality. Each monobloc has two of the beautifully linear 300B directly heated triode in its output stage, producing 20 watts into an 8 ohm load. At the front we have a 6AU6 pentode and an ECC82 as the driver valve. This design utilises a 5U4 rectifier valve in the power supply, in combination with a 104 choke, giving an extremely quiet supply. Both mains and output transformers we EII pattern.

- **Weight:** 23kgs., **External dimensions:** 25cm(w) x 38cm(h) x 22cm(d) per monobloc.

---

**KEL80 MONOBLOC AMPLIFIER KIT**

Following the success of our budget KEL34 40watt kit amplifier, we have come up with a 'big brother' design. The output stage uses two pairs of TESLA EL34 pентodes in parallel-push-pull mode, allowing KEL80 to turn out 80 watts into an 8ohm load. Headlining the input stage we have the wonderfully linear Russian 6AU6 working into an American 5687 phase-splitter. KEL80's output transformers are 4ohm and 8ohm tapped. With an input sensitivity at around 380mV for full output, it will happily partner both passive and active pre-amplifiers. It is easy to assemble. Simon Pope says, "The proof of the pudding is in the eating and the KEL80 is a feast for the ears, with solid bass attack, lightning fast reactions, that emphasises musicality as well as power. At £649.00 a pair, a definite valve winner." Each monobloc weighs 12kgs., **External dimensions:** 14cm(w) x 8cm(h) x 43.5cm(d).

---

**HD83 VALVE HEADPHONE AMPLIFIER KIT**

The HD83 headphone amplifier is a beautifully simple design using Mullard ECL83 valves, a triode and power pentode housed in the same envelope. It works directly from any source, be it CD, tape, tuner etc., or from an amplifier's tape out or pre-amp out sockets. The circuit uses high specification EII output transformers that will drive any headphone load from 16 ohms to over 300 ohms depending on how the secondaries are wired up.

The HD83 is a single-ended design with the power pentode wired up in triode configuration for added sonic purity, and it is as quiet as a mouse. For sound quality Jon Marks says, "The bass is punchy and controlled without becoming artificial, while treble has the crispness of the best solid-state, with the tonal purity, delicacy and speed associated with valves." **External dimensions:** 18cm(w) x 30cm(h) x 8cm (h) weight 4kgs.
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Hi-Fi World "Kit 34 Upgrade Kit"
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### Parts Description

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SINCE 1979
Paul Miller is testing products in Hi-Fi World this month, along-side myself. There are many reasons, personal, commercial and technical, all of which might interest you. Firstly, let me cover an issue central to Hi-Fi World, one that directly affects readers interests too, since it’s the hardcore issue of technical product assessment and whether what you are getting in the shops is all it’s cracked up to be.

I test products not just to see how good they are, but to check that they meet manufacturer’s performance claims. As complex new formats like DVD-A and SACD come to market this test work becomes increasingly difficult, but at the same time they are immature technologies with quite serious limitations at present. For example, many early generation DVD players do not meet the specification of the format. Players that supposedly work with 24/96 audio should be able to reproduce music harmonics up to 48kHz, yet their output is truncated to 21kHz. This was a limitation of early chip sets — and it was quite common. Worse, the effect was audible; limiting bandwidth reduces apparent clarity and openness, I’ve found, removing quite a lot of drama from a recording. Only measurement can detect this sort of limitation with any degree of certainty.

With a product as complex as a DVD player, where there are so many different aspects of performance to consider, a review devoid of measurement cannot discover serious limitations like this and really isn’t a lot of use if you are looking for something that works properly. Complicating matters is the fact that test methods and equipment barely exist outside the gates of the big manufacturers and, I have found, they are not necessarily too keen to make them generally available. I have found it difficult to get effective test discs for example. Paul has pushed ahead strongly in this area and brings his knowledge and experience to the magazine. We discuss DVD and SACD informally when problems arise, so Paul’s contribution is an extension of this co-operation.

Plenty of claims for high resolution formats are being made, but they are not all justified. For example, SACD has some serious conceptual problems that, in my view, partially negate performance benefits. Only measurement can substantiate a claim like this. This way, when we do get good players able to do full justice to SACD or DVD-A they will be recognised as such.

Then there’s the politics. If a big Japanese company produces a DVD player that intrinsically cannot meet its published specification then it could be in breach of the Sale Of Goods Act. If it is meant to reproduce 24/96 the audio bandwidth must reach out to 48kHz. If it does not then it could be said that misrepresentation is occurring, quite a serious allegation. So before I can state clearly and categorically that a product is not meeting its spec, it’s wisest to get a second opinion and Paul Miller is the only other person able to provide an independent view.

It’s interesting to see this situation from the manufacturers viewpoint. Put yourself in the position of Sony or Philips. Say, you have spent a fortune in R&D, and another in the development and marketing of a new technology. The last thing you want is ill informed or badly motivated comment from a reviewer that may jeopardize the commercial viability of your new product. On the other hand, you do want to know about any hidden problems and you do want to get a good product recognized by a good write up. So manufacturers, whilst not necessarily always being too happy about what is said in a forthright measured performance report will usually accept its findings with good grace.

When it comes to getting things right, experience counts. By experience I don’t just mean that gathered by testing product day in, day out, Paul and I have spent a lot of time listening to the views of manufacturers over the years and we both have a reasonably good grasp of what is going on in the design process. We are both prepared to contact a manufacturer and importer to get their view if something doesn’t measure properly.

As I’ve explained, this is in the interests of everybody, manufacturers as well as readers. But you don’t have to spend too much time as a technical reviewer before it becomes apparent that most publishers have other ideas. Both Paul and I, at different times, have become exasperated by having to deal with a hotch-potch of changing views from general-jimmy publishers who boast What Cactus magazine as part of their portfolio. I started Hi-Fi World to get away from this sort of thing and Paul has branched out into specialized audio measurement. This explains the MAR (Miller Audio Research) at the top of his response plots.

With both of us testing products I am firming up on Hi-Fi World’s commitment to provide reviews that reach a very high standard, both technically and subjectively. As DVD-A and SACD evolve we will be able to keep you informed about the best — and the rest.

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Last month I looked at the uncertainty of many manufacturers as to just where the hi-fi market was heading. Yet hi-fi manufacturers are far from being the only ones within the industry that face uncertain times ahead. After nearly a decade of buoyant trade, many retailers are beginning to feel the pinch. The pressure is coming from predictable sources, but also from some less obvious.

Even those who do not have the slightest interest in economics could hardly fail to have noticed that it's been a tumultuous year, with tumbling stock market values, major accounting frauds and uncertainty over pension provisions. Even though retail sales have, thus far, remained fairly steady, there's a general consensus amongst hi-fi retailers that trade isn't quite what it could be. As well as the unpredictable economy, many retailers have pointed their finger towards the Internet. The Internet has proved to be more than just another means of mail order, and prices appear more competitive than ever. This is no doubt due to easy world-wide access and ability of retailers to adjust their prices instantly.

Increased competition and lower prices are generally a good thing for the consumer, but the prevalence of the web is forcing many retailers to reconsider strategy. Some are diversifying into areas such as multi-room installation where by the profit can often be maintained from installation and consultation fees, whilst others are investing hugely in their web site and the promotion of it.

A more unexpected pressure on hi-fi retailers comes from manufacturers. In order to remain competitive many are working on lower margins than ten years ago. This isn't a problem so long as sales improve. If they begin to fall, or a retailer shows a lack of interest in a particular new product, then manufacturers understandably begin to become rather anxious.

Another concern of many retailers is the fact that manufacturers are increasingly turning to direct marketing in order to protect sales and boost margins. The Internet, of course, makes this easy as one can simply sell products directly from the manufacturer's site. Yet many are becoming far more proactive than this. For some time now Bose have marketed a selection of their products directly through the national press.

More recently, and more surprisingly, was a recent initiative by Marantz towards direct marketing. Over the summer they placed national advertisements promoting and directly selling their Eclipse range of style systems and remote controls. Although Marantz claim there are no plans to market the rest of their range in this manner, they make few bones about their disappointment in retailers' support for the Eclipse range. Of course, the retailer doesn't always do too badly from this type of marketing campaign. Brand awareness is driven up, and many people still prefer to be able to see and hear their hi-fi before they actually buy it.

In order to be able to see and hear a product, high street outlets are needed. Along with direct marketing, manufacturers are also taking to the idea of single brand retail outlets. It does seem somewhat odd that just as car retailers are realising the benefits of multi brand supersites, that hi-fi retailing is showing signs of heading in the opposite direction. For many years we've seen the Danish company Bang and Olufsen operate in this manner, and franchises of Sony Centres are now also a familiar sight. They appear to be the beginning of a trend.

It's interesting to see companies as diverse as Linn and Bose using their own retail outlets, despite both companies still professing a commitment to multi brand retailers. It's obviously a ploy that's worked well for Sony too, as they've just announced an expansion of the Sony Centre theme. Sony Centre Gallerias will offer at least 2000 square feet of display, showing the entire Sony range. Sony Centre Connect on the other hand will be much smaller outlets, offering core products only, in higher footfall areas such as airports. I can see the appeal to manufacturers in that it allows them to protect and promote their brand in exactly the manner they choose.

Consumers however, whilst hopefully benefiting from increased product knowledge by the sales assistants, will suffer from a lack of price competition and service competition for that matter. After all, if I wanted to buy a B&O television, for example, I'd have little choice but to go to my local B&O dealer and pay the price he asked. Yet buying a Panasonic TV would be a totally different experience with me being able to choose the type of retailer that suited me from no frills service but cheap prices to vice versa.

I hope that we are not left with the same situation for all hi-fi separate brands. Demonstrating equipment can be a lengthy business as it is, but having to travel between retailers to hear every individual component would be too tiresome for all but the most committed.

As we approach the buying season with exciting new formats like DVD-A and lower priced ones such as DAB, it's going to be interesting to see just how the bulk of these are retailed. The choice, as they say, is yours - sort of.

Dominic Todd
BACK TO BASIKS

David Price looks at Linn's 'bread and butter' turntable, the Basik.

Back in the early nineties, Linn Products was still regarded primarily as a high-end specialist turntable manufacturer. After all, its Karik/Numerik CD spinner had only been around for a couple of years, and the LK1/LK280 pre-power amplifier combo was far from being omnipresent. By contrast, the LP12 had been around for some twenty years, sold bucket loads and very few (in the UK at least) had even begun to question its seemingly unassailable position as 'the best turntable in the world'.

The Axis completed the Scottish company's turntable portfolio. Launched in the late eighties at the very competitive £299 price point, due to the introduction of the Akito tonearm and Linn's penchant for increasing its prices just a little faster than most, it had become quite a pricey deck in its own right. Together with the Sondek, it made Linn's range of vinyl spinners very respectable.

Things were changing, however. There was a discernible move away from buying turntables as a primary source. Sondek sales continued reasonably solidly - the popularity of CD was hardly a threat to buyers who wanted 'the best source money can buy' - but the Axis seemed to be fading. The bottom end of the market was still reasonably buoyant, however. The success of Pro-ject, and the ever-growing presence of Rega suggested that the decks that punters wanted to buy were either 'cheap and cheerful' or expensive and wonderful.

It's into this climate that the Basik was born. Selling for under £350, it came as quite a shock to Linn fans who'd always assumed the company was exclusively a purveyor of 'premium' products. More surprising was the design of the thing. In some ways quite impressive, there were nevertheless some all-too-obvious compromises.

Most shocking to Castlemilk traditionalists was the total lack of suspension. Okay, so it had three rubber feet, but to those used to twiddling their LP12 springs on a cold Winter's eve, the Basik was to all intents and purposes running with no shoes or socks on, naked as the day it was born! In this respect it was just like a Rega or a basic Pro-ject or Dual - heaven forbid! Cost cutting continued in other areas too. The plinth was quite elegant looking but pretty crude - basically just a bit of chipboard. The motor was the same Philips Impex 24-pole AC synchronous affair seen on the Sondek and Axis, but this was hardly anything to shout about. Worse still, it was devoid of the fancy power supplies found on the Axis and LP12 Valhalla. The plinth was a decent enough two piece Masak affair, pretty much as seen on the Axis, and the bearing was similar too.

This was all pretty unexciting stuff, but one big surprise came in the attractive shape of the Linn Akito tonearm fitted as standard. This wasn't up to the standards of Rega's RB300 in terms of detail and soundstaging, but it was obviously more musical. It was also a resounding improvement on the rather sad LV-X Plus that had been the company's entry level arm until then. So good was the Akito that, so the legend goes, it outperformed the very early Itoks - which was no small feat. The result was that an Akito-equipped Basik could run an LVX-equipped Axis surprisingly close, despite the latter's obvious extra sophistication. Needless to say the Axis very soon got the Akito too!

The Basik sounds surprisingly better than the sum of its parts. A natural, organic record player, it lacks the LP12's coloration and presents a tight, breezy and musical face to the world. Bass is its only obvious weakness, but there's something you can do about that - wall mount it or place it atop several layers of isolation tables. Some folk use 18mm slabs of Medite separated by Foculpods, others have got great results from a half-inflated bicycle inner tube in-between. Just plonked on your hi-fi support however, it's very much a poor relation to an LP12, or an Axis for that matter.

These days used Basiks are still quite pricey, thanks to the new cost of the Akito tonearm going over £500! A decent specimen will cost you some £250 (including Akito), or maybe even more. However, mount a Goldring G1042 (£130) or better still a Dynavector DV10X4 (£199) into that fine little arm, buy or make yourself a decent isolation platform and you'll have an extremely enjoyable way of listening to your favourite discs.
Hi-fi accessories - don't you love 'em! Never in the field of human commerce has so much fuss been made about so little for so long. Forgive my cynicism, but the number of useful gadgets I've come across in a quarter of a century of looking can be counted on the fingers of, err, one finger. Curiously enough however, despite this risible record I still find myself strangely attracted to things promising better sound for next to no outlay.

My accessory experiences started back in the late seventies, when I managed to convince myself that what my BSR BDS90 turntable (the 'thinking man's alternative to the Garrard SP25, natch) needed more than anything (including a better cartridge than its dire Goldring G850 fitted) was a Bib Groove Kleen. Remember these? An ingenious contrivance, there it was a tonearm shaped device, complete with 'adjustable counter-weight' at the back, that tracked across the record cleaning it as it played. An ingenious contrivance, there was a period in the early 1980s when no second-hand turntable was complete without a broken Groove Kleen base stuck to its plinth in the rear left hand corner. Amazingly, the Groove Kleen arm itself would invariably be missing, due to having been discarded some two weeks after purchase, on account of it being totally useless. True, the felt roller picked up the odd bit of dust, but the nylon 'hairs' in its brush made more noise tracing the groove than your average youth centre disco, and also managed to invest the disc with thousands of volts of static electricity to boot. If your Groove Kleen had managed to successfully remove your LP's dirt, it would all fly back the moment you pulled it from the platter, accompanied by a sound alarmingly similar to an electrical storm.

Then there was the early eighties cassette cleaning tape - a fiendishly clever little gadget that removed the need for buying cotton buds and isopropyl alcohol from Boots once a month. Instead of whipping off your cassette head cover and poking round with a bit of fluff doused in pure alcohol for two minutes, cassette cleaning tapes were brilliantly easy to use. You simply placed the cassette in your deck and pressed play - then some sixty seconds later, your tape heads were good as new again - not!

The problem was that the 'lint' tape inside the cleaning cassette invariably wound its way around your capstan and pinch wheel, and then managed to jam. With no drive to one of the reels, within seconds half the tape in your cleaning cassette would be winding its way deep into your machine's internals - brilliant! Still, not to be dissuaded, the boffins at the major tape companies came up with a fix. Rather than using thick, slippery lint as 'tape' inside the shell, standard tape was used with a highly abrasive coating. This didn't foul the transports, but after being used a couple of times, was scouring its way through your prized record/replay head. Your treble dropout duly disappeared because the head changed from being dirty to hopelessly worn, so there was no treble to dropout - fantastic!

Last but not least was the dawning of the "green" era. As Greenpeace got under way in the media and consciousnesses took on-board the message, hi-fi had to go green too. Most ingenious was the realisation by someone with a mind of appropriately high fertility that red laser light inside a CD player was absorbed by the colour green, so there was a rash of green pens, green CD backs and even internal treatments designed to soak up all that non-green laser light that by its colour alone was obviously up to no good. A strong dose of green would mop it up.

Such was the power of the 'Flat Earth' lobby in the mid eighties that when Linn came up with a revolutionay new way to clean your stylus using sandpaper, a generation of audiophiles rushed to their dealers to get a piece of the action. Although the thought occurred to a number of folk that sandpapering your stylus may not be the best thing for it, their powers of logical deduction were hampered by the promise of radically better sound - from hi-fi journalists and dealers alike.

Despite exhortations to use this stuff sparingly, many golden eared Flat Earthers began 'using' it before playing every side. After all, it often made quite a marked difference, cutting through all the sludge, dirt and gunge caked onto the end of your needle. The result was a rampant epidemic of otherwise meticulously cared for Linn Basiks, Rega RB100s and Nagoaka M91s with seriously sharpened stylus - which duly recut the records they played. 'Why is my system sounding so shrill', asked my friend as he sandpapered his K9 into oblivion. The moral of the story is that much like some of the 'medicines' we humans take - the cure is often worse than the complaint!

Its brush made more noise tracing the groove than your average youth centre disco
This is a comprehensive directory of Hi-Fi Dealers throughout the UK and Ireland.
A reference guide to Britain’s manufacturers and distributors

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Black RHodium (32, Derwent Business Centre, Clarke Street, Derby DE1 2BU. Tel: 01332 599 377)

Border Patrol (43 Berrin Lane, Hornchurch, Essex RM11 3ER. Tel: 020 8631 8120)

Border Patrol Amplifiers (Burrn, Northend Road, Harrogate, Yorks. Tel: 01423 502497)

Buckinghamshire, UK. Tel: 01296 24756. Email: info@epos-acoustics.com. Website: www.epos-acoustics.com

Falco Electronics Ltd (Tobor House, Norwood Road, Thalbourne, Newcom, NR 18 JT. Tel: 01508 378272. UK distributors of Focal drives units and SONOR (Chassarris) polypropylene capos and the largest inductor manufacturer in the UK. Comprehensive range of DIY Speaker Parts and Kits, Sub-Boxes and Electronic Filters. Everything but the wood. Enquiries should be submitted by a faxed stamped addressed envelope.)

J E Sugden & Co LTD (Valley Works, Station Lane, Heckmondwike, West Yorkshire, WF16 1QH. Tel: 01924 410488. Email: jesugden@compuserve.com. Triode amplifiers and compact disc players from the original Class A Company. Our unique wide-bandwidth and post productions. (5.1 & Stereo) PMC Products: PMCs Ltd 43-45 Crawley Green Road, Luton LU2 0AA. Tel: 0870 444 0044. Email: sales@promonitorco.uk

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**SOLID STATE FASHION**

A prototype from chip maker Infineon shows where digital audio portables could go - a 3cm square MP3 player, controlled by a 5mm square chip, has been woven into a jacket. It's invisible, and is controlled by voice commands. The chip itself weighs 8g and uses a small battery and a multimedia card (MMC). Infineon says it should cost around 10 Euro (£6) to make, and should be on the market within four years.

The packaging technology wraps copper wires in silver and then in polyester.

**MUSIC ON THE MUVO!**

The wireless MP3 player is here! Creative Labs latest gadget is called the MuVo, a digital audio portable that stores any type of data file. This tiny, thumb-sized device has a detachable storage portion that can be inserted directly into a computer's USB port, allowing for drag-and-drop file transfer. Powered by a single AAA battery (offering a 12-hour life), its detachable pod contains the bulk of the electronics: the flash memory, the playback controls and the headphone jack. Both MP3 and WMA (Windows Media Audio) formats can be played back, and the MuVo comes in with 128MB or 64MB versions, offering long playing times. The player should cost around £110 when it reaches the UK later this month. See http://uk.europe.creative.com/.

**SIGN OF THE TIMES**

CD-ROM drives still account for 42% of world-wide shipments, which is more than CD-ReWritable drives and DVD-ROM drives, according to a report from Taiwan-based Photonics Industry and Technology Development Association (PIDA). It says that CD drives account for 42% of an estimated 188 million world-wide shipments of computer drives in 2002, followed by 30% for CD-RW drives and 19% for DVD-ROM drives.

SUBSCRIPTION MUSIC ARRIVES

Due to the lukewarm reception that the major label backed Pressplay music subscription service has got, it has moved to offer an unlimited supply of free music downloads for a set period for a single fee. The new pricing plan means that subscribers will be able to download or stream an unlimited number of songs to their computer for a single annual fee of $179.40 (£114). This 'all you can eat' approach attempts to ape the appeal of Napster, but within a legal framework.

Pressplay, along with the likes of MusicNet, Listen.com, FullAudio and RioPort, has been fighting with free 'peer to peer' services like Gnutella or Grokster, but has had to impose strict limitations on the number of downloads to keep the record companies happy. Now, the joint venture between Sony and Vivendi Universal is offering consumers unlimited downloads and streams, plus the ability to burn 120 songs a year to CD. Check out www.pressplay.com.
Copycoding is the music industry's new secret weapon in the fight to claw back lost revenues. In the first of a two-part feature, David Price examines the reasons behind it, and its legal implications.

The music industry is going out of business - they are desperate to do something" So says Brian McPhail, VP of Macrovision's Consumer Software Division, one of the three key 'technology providers' which are making copycoding possible. His company has come up with a way to wrest control over how music is used and put it right back into the hands of the record companies. Macrovision's SafeAudio, Midbar's Cactus Data Shield and Sony's Key2Audio are all systems that prevent music buyers playing - and therefore copying - music CDs on their computers.

The systems are being adopted by various music industry companies for a range of artists' albums and singles. Aside from a few well-publicised discs, it's impossible to say which titles have been copycoded, because of strongly adhered to 'non-disclosure agreements'. Although it may seem good sense - after all, as McPhail reminds us, "the user doesn't purchase the music, they purchase a license to use it" - it raises some very serious issues about individuals' rights to use their property (i.e. the CDs, as opposed to the music) as they see fit.

For many years now, the world's music software providers have agreed on what music lawyers have come to call 'fair use'. This is the commonsense notion that buyers have been able to copy the music they buy, providing it's for their own, personal use. Copycoding threatens to blow this straight out of the water, seriously restricting music buyers' abilities to make CD copies for their cars, play their songs on their computers and DVD players, or rip them to MP3 for personal use. It poses a potential threat to sound quality, compatibility with certain equipment, raises questions over longevity and even the privacy of the user.

KILLING ME SOFTLY
Remember the infamous 'Home Taping is Killing Music' campaign of 1980? This was the music industry's first real try at countering the threat posed by music copying - or 'piracy' as it was called. That much-publicised series of advertisements in music magazines with the famous 'skull and crossbones' logo was a concerted attempt to win over public opinion, to persuade people that taping their friends' records was a false economy because it would surely bankrupt record companies. Unsurprisingly perhaps, with an all-time record of 89.1 million singles sold the previous year [source: BPI], it fell on deaf ears.

The mushrooming popularity of the recordable Compact Cassette format, and the rapid introduction of double decks with 'high speed dubbing' added further insult to alleged injury. The entertainment industry, it was fair to say, was most definitely not amused.

By the late 1980s cassette copying was profligate, yet it would prove a mere trifle compared to the threat posed by the new generation of forthcoming digital recorders - in the shape of DAT, DCC and MiniDisc decks - which could all make very high quality copies of CDs.

Although Digital Audio Tape decks went on sale in 1987 in Japan, their world-wide introduction was embargoed until the music industry was able to thrash out the issue of 'copyright infringement' with hardware manufacturers. The worry was that it was a chance for home recorders to obtain a 'perfect digital facsimile' of the original recording, with no additional payment to the artist at all. This was exacerbated by the fact that in Japan - one of the world's largest music markets - video rental outlets were investing heavily in CDs. Coupled to a basic DAT machine, it was the music industry's worst nightmare come true!

SCMS was the result. Generally regarded as a good compromise between the rights of the artist and the music buyer, the Serial Copyright Management System let people make virtually bullet-proof, making it particularly suited to 'lending' to friends for copying. LPs, by contrast, had always been more fragile, which had dissuaded many from being so generous with their purchases!

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Macrovision's SafeAudio - a disc can only be played on a PC with the company's SafeAuthenticate system

one direct digital copy, after which all subsequent attempts to make digital copies from that copy would be blocked. It worked by adding an 'SCMS flag' to the digital datastream which digital recorders looked for when put into record mode. If it wasn't present then digital recording could go ahead, but if it was then an 'SCMS copy prohibit' message would be displayed and the deck taken out of record mode, making copying impossible.

Although every country has slightly different copyright laws, individual countries' recording industry associations have traditionally worked within the spirit of SCMS, as have their governments. For example, in 1992 the United States passed a law allowing music listeners to make some personal digital copies of their music. In return, recording companies collect royalties on the blank media used for this purpose. The result was that for every digital audio tape (DAT), blank audio CD, or MiniDisc sold, a few cents would go to the RIAA as more of a threat to the singles market, which posted a 16.1% drop in sales last year to $33.7 billion. MP3 file swapping was identified as cause of over twenty different systems, the technology has proved to be very much in its infancy, and has produced decidedly mixed results.

The first known copycoded audio CD to be released in the United States was 'Charley Pride: A Tribute to Jim Reeves', using a system from security technology provider SunnComm. It resulted in a lawsuit where MusicCity Records, Fahrenheit Entertainment and SunnComm agreed to stop tracking listener habits and to warn consumers that the CD was not compatible with MP3 and other digital media players.

The project further backfired when unprotected versions were released in some markets, letting the songs get onto file-swapping networks.

Universal Music duly sold its copycoded 'The Fast and the Furious' soundtrack album with a label warning that the CD would not play on a small number of players, and Sony followed with the release of Michael Jackson's 'Rock Your World'. Europe has proved more fertile territory for copycoding. Two years ago, BMG Germany tried shipping 130,000 discs encoded with Midbar's Cactus Data Shield technology. They were said to be playable on all types of machines without affecting the quality of the recording, but many users found the CDs couldn't play on ordinary players. The project was duly abandoned, with BMG reporting that it had compatibility problems with between two and three percent of customers' CD and DVD machines.

Then, last Autumn, BMG Finland pulled its first batch of encrypted Westlife CDs, reportedly after complaints by buyers that they weren't informed that the discs were unplayable on computers. Not to be dissuaded, BMG began working with SunnComm, as well as testing more systems from Midbar, Macrovision and others.

Indeed, Macrovision was subsequently reported to have begun testing copy-protected CDs on consumers without them knowing, to ensure unbiased feedback. The company says it has provided its SafeAudio technology to several

datastream from audio CDs straight off the disc and onto a computer at many times the 'real time' playback speed. This - coupled with the subsequent arrival of affordable computer CD writers whose software blithely ignored SCMS some five years later - scared the recording industry rigid.

Tumbling CD-R media prices (discs had come down from around £30 each in the late eighties to under 50p a disc in 2002) seemed to be the straw that broke the camel's back. To put things into perspective, Sony's top Metal Master cassette cost £12 in 1990, whereas an unbranded blank CD-R capable of even better sound and high speed copying cost one twenty-fourth of this a decade later! By early 2002 it was clear that something was afoot in the CD sales charts. A report by the IFPI stated that computer audio was behind the first ever decline in US CD album shipments, which experienced a 5% drop in the value of global music sales last year to £33.7 billion. MP3 file swapping has been identified as more of a threat to the singles market, which posted a 16.1% drop in global singles shipments to 300 million units.

CODE RED (BOOK)
Aware of the effect computer CD copying was having on its bottom line, sections of the music industry last year began a rolling programme of CD releases, in a number of different markets, using 'copycoding' technology designed to prevent the use of audio CDs in computer CD-ROM drives. Despite the availability of over twenty different systems, the technology has proved to be very much in its infancy, and has produced decidedly mixed results.

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Indeed, Macrovision was subsequently reported to have begun testing copy-protected CDs on consumers without them knowing, to ensure unbiased feedback. The company says it has provided its SafeAudio technology to several
major music labels, with tests running for up to six months. Details of which titles were encrypted have not been provided, but Macrovision reports that at least one album has sold upwards of 100,000 copies.

Sony says it has now released nearly seventy titles, totalling some 10 million discs, encrypted with its Key2Audio protection system, one of the latest being Shakira’s ‘Laundry Service’.

It’s interesting that the biggest issue of copycoded discs to date has come from Japan’s Avex label, which in March 2002 released a million discs protected by Cactus Data Shield. Japan is a famously ‘early adopter’ of new technology, which has meant that computer audio and flash memory based portable players running MP3 and AAC file formats have become enormously popular.

A trio of CDs-encrypted albums followed, including South Korean female artist BoA’s ‘Every Heart’ and ‘Affection’.

IS IT LEGAL?

Summer 2002 saw Philips (the co-creator of CD) announcing its opposition to the growing use of copycoded audio CDs by the ‘big five’ major levels. Gerry Wirtz, general manager of Philips’ copyright office, was reported to have called it ‘troublesome and cumbersome’, expressing concern that the labels “don’t know what they’re doing”.

Philips argues that because these ‘copy-protected’ discs contain errors, they don’t conform to its Red Book standard and are therefore not strictly speaking Compact Discs at all. Therefore, the company says, they should carry warning labels informing consumers of the fact, and will not be allowed to carry the familiar ‘Compact Disc Digital Audio’ logo that has appeared on every CD since Philips and Sony jointly developed the technology in 1978. Wirtz has said, “We’ve made sure they would put a very clear warning that you’re not buying a Compact Disc, but something different. We’ve been warning some labels to begin with, and they’ve adjusted their behaviour”.

Music industry lawyer John Giacobbi of Websheriff told Hi-Fi World that this is a critical point. ‘Copy-coding is not prima facie illegal. The only aspect one has to watch-out for is that of ‘consumer issues’. It needs to be made-clear to the consumer that the CD cannot be used on certain types of players, such as those in computers, so the public knows exactly what it is they are buying and have the freedom of choice whether or not to purchase this restricted application product’, he points out. Philips is indignant, and says its future machines should be able to both read and burn the protected CDs.

There is an obvious conflict here. In the US, the 1998 Digital Millennium Copyright Act (DMCA) bans any attempt to circumvent copyright protection systems, whereas the 1992 Audio Home Recording Act (AHRA) allows music buyers to make personal digital copies of their music. This summer, Republican Senator Rick Boucher sent a letter to RIAA executives asking whether anti-piracy technology on CDs might override consumers’ abilities to copy albums they have purchased for personal use. He said, “I am particularly concerned that some of these technologies may prevent or inhibit consumer home-recording. Any deliberate change to a CD by a content owner that makes (the allowed personal copies) no longer possible would appear to violate the content owner’s obligations”.

In law, however, things are never clear cut. The AHRA says that copyright holders can’t sue people who are making personal home copies of music, but - critically - it does not require copyright holders to make this power available to consumers. Leonard Rubin, a copyright attorney with Gordon & Glickson, is reported as saying, “There’s no affirmative obligation to make this available. They just can’t sue you if you do it”.

Furthermore, it’s unclear whether the act actually applies to the use of computers for audio at all. Several years back, when Diamond Multimedia was arguing for the right to create and distribute its Rio MP3 players, US judges ruled that a personal computer was not deemed a “digital recording device” in law. This would infer that the AHRA isn’t applicable to PC or Mac computers.

Philips’ Gerry Wirtz has contended that watermarking, “is not a copy-protection system. It is not doing anything to recorders or copy devices. It would not qualify as copy-protection under the DMCA or the new European laws.”

However, the DMCA is a broadly worded piece of legislation which expressly bars the circumvention of any method used to protect the property of a copyright holder. According to some experts this puts Philips in a difficult position, because the music industry could argue that watermarking is copy protection as far as the DMCA is concerned, because it is designed to protect copyrighted material. “The draft legislation currently on Capitol Hill and, doubtless consumer vs. content owner litigation, shall ultimately determine the future of this issue, but meanwhile the debate rages on!”, says Giacobbi.

Macvision - www.macrovision.com
Midbar - www.midbar.com
Campaign for Digital Rights - http://uk.eurorights.org
Websheriff - www.websheriff.com

In part two of this feature next month, David Price examines Macrovision’s SafeAudio system in detail, and talks to Eric Cullen, Microsoft Corporation’s Digital Media Division Product Manager, about copycoding.
David Price's audition's one of the most interesting computer audio products you'll see this year - Aopen's audiophile AX4B-533 Tube Motherboard. Yes, really.

This, just in case you're wondering, is a review of a computer motherboard - the thing inside your PC that lets your little processor talk to all its various bits (memory, devices, etc.). What then, you may justifiably be wondering, has this got to do with the rarified climes of serious music listening? The answer is that this is the world's first audiophile motherboard - a product designed with the highest possible sound quality in mind.

In case you're struggling to make the connection between chip sockets, data buses, floppy drive connectors and high-end audio - then let me explain. These days, more and more motherboards offer 'onboard' audio, obviating the need for a soundcard. The problem is of course that the audio chips used are invariably the cheapest and nastiest possible - designed for gamers and basic MP3 playback only. Aopen's new offering takes this idea but does it right, showing breathtaking attention to detail that extends to the use of valves in its analogue output section!

Billed as 'the world's first vacuum tube motherboard', don't think this is a return to Colossus, the first valve computer. All the number crunching activities are done in the 'modern way', supporting the latest Intel Pentium IV, 845E chipset - it's just the tube audio stage that harks back to Thomas Edison! So why on earth would Aopen want to make such a thing? The answer is that the company sees a very exclusive niche market - passionate audiophiles and extreme gamers, who are interested in building their own ultimate entertaining PCs. It adds that, "(it) is also certain to appeal to retailers that desire to cater to these two eccentric groups with custom-built PCs, delivered with matching speaker systems and the latest CD and DVD playback devices."

The story started with some Aopen engineers having a "lark". Their original idea was to add the "unmistakable sound" of tube output to a modern-day motherboard. US Product Manager Al Peng suggested, "it would be really cool if we could combine the warmth and depth - tonal realism, if you will - of the sound produced by an audio tube, with one of our state-of-the-art motherboards. Laughter turned into raves a few months later when we did our first lab demo of our unique hybrid creation. The reproduced sound was absolutely amazing."

**DESIGN FEATURES**

Aopen engineers say they studied many classic valve pre-amplifier circuits and finally opted for a single dual-triode (which is a single tube per stereo channel) as the main amplifying device. Direct path design is used, obviating the need for many coupling devices that colour the music. The valve itself is a Sovtek 6922 which Aopen says has a "warm and soft mid range, (and) ultra liquid
Something you thought you'd never see - the PC that glows in the dark! The single Sovtek 6922 in its full glory...

Aopen has used 'Frequency Isolation Walls' (FIW) strategically placed at all regions throughout the motherboard that separate each operating frequency region. These include the CPU, memory, AGP and PCI, where the operating frequency range can be from 33MHz to 133MHz. The company claims that this greatly reduces crosstalk among these regions, giving both better sound and improved system stability.

Very high claimed longevity is claimed for the AX4B-533 Tube. Aopen says it is "painstakingly and patiently assembled, piece-by-piece, then fully inspected and individually tested by Aopen technicians to ensure that each motherboard meets its desired peak performance levels without hesitation." The MTBF ratios for the motherboard and the valve circuitry are 50,000 MTBF hours and 35,000 MTBF hours respectively, with the valve itself giving up to 5000 hours depending on conditions.

The board itself contains on-
board hardware accelerated audio, using the Realtek ALC650 AC'97 codec, which offers up to 5.1 channel sound. It also has a wealth of inputs and outputs, including 3.5mm mini-jacks for line in, mic in, a line in via the valve audio stage, line output, a 6.3mm headphone jack and digital ins and outs via either TOSLINK or coaxial phono connectors. There's also the usual game/Midi port and a 5.1 channel speaker output by three 3.5mm mini-jacks (front left and right, rear left and right and centre and sub).

Installation was just like any other motherboard - a case of slotting all the various bits in and hooking up all the ribbon cables. Obviously, reliability issues can't be assessed within the relatively brief review period, but this board seems beautifully built and showed no adverse reaction to its host PC.

It makes a very nice noise, one that's quite different to your average standalone soundcard. There's a real refinement, smoothness and depth here, of the sort you'd only expect in high-end hi-fi. Much of this is down to the aforementioned tube audio output section - running a line into the 'monitor loop' of an amplifier and comparing the signal against the original shows it to be quite superb. The Aopen board adds very little to the picture, and what it contributes is either benign or 'euphonic', depending on your point of view. Treble smooths out just a touch, the soundstage widens slightly, and bass acquires an extra pound or two of added heft. Thanks to its deliciously courteous midband, female voices are a particularly pleasant listen. The downside is that there's just a slight softening of dynamics and loss of low level detail.

My only problem with the Aopen is that my religion tells me to get all the audio processing as far away from the computer as possible. To wit, I usually use a Zefiro ZA2 digital interface card and an external Cambridge DACMagic DAC. If, however, you must have onboard sounds, then I can think of nothing better! Hats off to Aopen for its 'blue skies thinking', and may it make successful converts (to the joys of valves) of millions of PC users!

AOPEN AX4B-533T £149
http://www.aopen.nl/

Aopen's engineers reckon the stock Sovtek 6922 valve should last for around 5,000 operating hours, which translates to over three years should the PC be powered up for three or four hours everyday. Should it fail, or if users wish to experiment with other valves to suit their personal tastes, they have published a list of recommended alternatives:

Jan-Philips 4022
Rosela 6922 / 6923
Gramenn E88CC / 6922
6N30 or 6303P
Tesla E88CC / 6922
Telefunken E188CC / CCa
Telefunken E88CC / 6922
Telefunken PCC88 / 7D8
Siemens E88CC
Siemens 7068
Sof brace 6N1P
Philips E88CC
Philips E88CC / 6922
Mininat ECC88 / 6D8
Amperex ECC88 / 6D8
Dukard E88CC / 6922
Dukard CD492 / E88CC
Dukard CD493 / E88CC-01
Dukard E188CC / 6922
Dukard E188CC / 6922
Dukard E88CC / 6922
Sylvania 6922 / E88CC
Sylvania 6922 / E88CC
Sylvania 6922 / E88CC
Sylvania 7308 / E88CC
AEG E88CC

Despite all the attention to detail shown on the audio side, the AX4B-533Tube Motherboard is extremely competitive as a straight computer component. It comes with latest Intel 845E chipset design which uses DDR SDRAM memory. This can deliver 2.1 GB/s to the processor, making good use of the full performance of an Intel Pentium® 4 processor with a 533MHz FSB, to give high overall performance and longevity. It has four AGP slots (with new ICH4) and four USB 2.0 ports and an Ultra ATA/100 interface. It is fully ACPI 1.0 and APM 1.2 compliant and comes bundled with Norton Anti-Virus 2002 software.

MAX MEMORY:
2GB DDR SDRAM for 184pin DIMM 3
DIMM Type: 64/128/256/512MB/1GB

ONBOARD I/O:
2 Serial Ports (UART 16C550 Support)
1 Parallel Port (SPP/EPP/ECP Support)
2 Channel E-IDE (Mode 4 and Bus master
Ultra DMA 33/66/100 Support)
1 Floppy Drive Connector ( 1.2/1.44/2.88MB)
2 Universal Serial Bus Ports
1 10/100 Mbps Ethernet Port
1 PS/2 Mouse Port
1 PS/2 Keyboard Port

ONBOARD CONNECTORS:
IrDA, Wake-On-LAN, Wake-On-Modem,
CPU Fan, Fan2, Fan3, CD_IN, AUX-IN

FRONT AUDIO: S/PDIF, Chassis intrusion connector,
aditional 4 USB 2.0 Ports (via optional cable)

BATTERY: 3V Lithium Battery, green function

BIOS: Award Plug and Play 4Mb Flash ROM
Board Size: 305mm x 244mm, ATX Form Factor

PC TALK

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PAGE 86 OCTOBER 2002 COMPUTER AUDIO WORLD
Here's a list of products that are a good buy. We've tried to cater for a range of tastes, dentifying strong products in every area. We're agnostic so you'll find a wide range of products, from valve pre-amps through to MiniDisc players. Products marked * are recently out of production but make a good second-hand buy.

**COMPACT DISC**

**ARCAM FMJ CD23** £1100
This British-built player is extremely versatile, controlled and detailed with a musical insight that few match. (Jul 2000)

**CAMBRIDGE CD45SE** £200
A touch soft in the treble but outstanding in every other respect. (Feb 99)

**ENWOOD DP-3080 II** £180
Has great clarity and presence for the price. Not as naturally expressive as the CD45SE tough. (Feb 98)

**INN KARIK III** £1775
Jaded rated and overlooked, the final KariK via a gem. Superb transport gives a bracingly bright, grippy dynamic sound, albeit tonally a bit dryer. (Jan 99)

**MARANTZ CD-17 Ki-S** £1100
The Marantz excels in all areas. Without doubt this is one of the most involving CD players on the planet. Build quality is also exemplary. (Sep 97)

**MARANTZ CD-63** £400
Similar to the CD-43SE but more powerful and an all-round smoother sound. The smooth Ki lacks a bit of ore. Whether or not it is still pre-eminent against the vasty improved competition is a matter of opinion. (Sept 97)

**MUSICAL FIDELITY X-RAY** £800
Gimmensence sturdy CD player of exceptional ability Clear and detailed with high quality internal processing system. The exellent LCD is inclined to show up poor recordings, but it's only doing its job! (Feb 99)

**REGA PLANAR 2** £214
Brilliant starter deck with extremely polished finish. Better built £274 Planar 3 is a great all-in-one package that eats mid-price CD players for breakfast.

**TEAC P-30** £2500
Cheap it isn't, but then it sounds like a million digital dollars. Nothing short of superb. (Jun 97)

**TEAC VRDS-T1** £600
Excellent mid-price silver disc spinner with a powerful, expansive and warm sound. Easily beats most sub-£1000 designs. A good choice for the budget conscious who want the best. (Feb 97)

**DACs**

**CAMBRIDGE AUDIO DDMAGIC 3** £99
Superb value for money with extensive facilities and solid, detailed sonics. Upgrades any sub-£300 player. (Aug 97)

**DCS ELGAR** £8500
Future-proof converter which will handle 24/96 and 24/192. Extremely open and natural performer. (Nov 97)

**DPA LITTLE BIT 3** £299
A taste of the high end on a budget. Rich, clean, punchy sound transforms budget CD players.

**HADCOCK 242 SE** £795
Excellent as a DAC and doubles as an ADC for archiving to CDR. (Jun 98) Great value, as is junior version Flying Calf at £109. (Feb 99)

**MUSICAL FIDELITY X-DAC** £100
A bargain for normal CDs and even better with HDCDs. (Sep 99)

**SONIC FRONTIERS PROCESSOR 3** £6999
Quality never comes cheap! This DAC boxes class and when matched with the Transport 3 is certainly up with the best. (Sep 99)

**TURNTABLES**

**LINN SONDEK LP 12 BASIK** £1100
Off the pace these days in many respects but still an extremely sweet and engaging listen with a quintessentially analogue sound.

**Prices shown are those at the time of the review**

**COMPACT DISC TRANSPORTS**

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A selection of our ever changing offers for sale
(all fully guaranteed)

**AMPLIFIERS**

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<th>Product</th>
<th>Equivalent New Price</th>
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<td>Rotel RX-965 (2-Channel Amplifier)</td>
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<td>Sony TCX-470 (Multi-Channel Amplifier)</td>
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**RECORDING EQUIPMENT**

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<td>A.V. 25000 MTP (EM Tuner)</td>
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<td>Technics ST-410L (Pre-Sets / Digital Display)</td>
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<td>Marantz ST-48 (R.O.S. Tuner) MINT</td>
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**SYSTEMS**

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<th>Sale Price</th>
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<tr>
<td>affordable-audio will happily &quot;build&quot; Systems to your individual requirements, and if you purchase three or more components, i.e. (C.D. Player, Amplifier, &amp; Loudspeakers), we will give you a *15% Discount on the total price! *Please enquire for further details. <strong>(Does Not Apply To Commission-Based Sales)</strong></td>
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MUSIC MAKER £375
When mated with a good quality arm, this hand finished high-output pick-up gives an ear-boggling account of itself. Very high compliance ensures maximum information retrieval. An absolute (gain orientated) gem. (Feb 99)

ORTOFON MC 7500 £2000
Conclusive proof that there’s hope for the world. It’s a long time ago now but this high-priced favourite still earns its niche - CD lovers would die if they heard it. (May 94)

ORTOFON MC 1S SUPER II £140
Not quite as good as the dearer Supremes but the Super II is a splendid introduction to the joys of moving-coil cartridges.

GOLDRING 1043 £120
One of the best Moving Magnet cartridges going, with beautiful treble and muscular bass. New low price makes it a bargain.

ORTOFON ROHMANn £1000
In a way it’s MC 2000 meets MC 7500 with great tonal strengths and a dynamo sound. (Apr ’96)

INTEGRATED AMPLIFIERS

AUDIO ANALOGUE PUCCINI SE £595
This superbly-built Italian integrated has a lucidity and control which leaves others nowhere. Sound stage a wow. (Dec 97)

AUDIOLAB 8000a £495
Well rounded integrated with smooth and detailed sound plus a huge feature count. Great build makes later versions a top used buy.

DENON PMA-250SE £160
It might not have bags of grunt but the Denon can sound exceedingly natural and open. (Feb 97)

McINTOSH MA6800** £3735
The MA6800 not so much plays music as takes control of it, with effortless bass drive. (Sep ’95)

MISSION CYRUS 2 £299
Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradable with PSX power supply.

MUSICAL FIDELITY X-CAHS2 £160
Warm, sumptuous, sweet sound ‘hypno’ amp. gives startling results with a decent set of headphones.

NAIM NAIT 3 £575
Superb rhythms and dynamics make for great music making, but tonally monochromatic. Super optional phono stage makes it ideal for vinyl junkies.

ROKSAN CASPIAN £695
Smooth, warm integrated with remote control that works happily into most ’speakers. (Dec ’97)

SONNETEER ALABASTER £995
Builds on the strengths of the Campon with ample control, colour and drive. (Oct ’97)

PHONO STAGES

CREEK OBH-SE £180
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile product.

LFD MISTRAL PHONO STAGE * £300
The Missile has a warmth and involvement that make many pricier stages sound overpriced.

MICHIEL DELPHINI MONOBLOCKS £1995
Analogue tour-de-force gives supremely clean, detailed and finely resolved sound with breathtaking dynamics. Great value, even at this price.

MUSICAL FIDELITY X-LP £125
One of the famous MF X series. Full marks throughout for clarity and detail. Switchable between MM and MC. Indestructible build! (May ’99)

PROJECT PHONO BOX £19
Not the last word in many respects but a thoroughly honest piece of work. Inexpensive introduction to all that vinyl has to offer: MM and MC provision plus choice of two impedances.

ROKSAN ARTAXERXES X £950
With the Attesa PSU the Artaxerxes X MM/MC stage still shines. Great stage depth, neutrality and tonal colour. (Oct ’97)

CARTRIDGES

AUDIOTECHNICA AT-110 £30
A down-market version of the IV and V with aluminium arm and desachable headshell. Tight, neutral sound with good tonality, but lacks the IV’s pace and precision. Like the older SME 3009 series, this arm is also available in 10" and 12" versions. (Jan ’93)

GOLDRING 1042 £130
Better Goldring’s 1042 and costs only £135.

DNM MICA £185
An accomplished MM with a solid bass, slightly forward midband and clean transient. Very reasonable price for such an able performer. (Jul ’93)

DYNAVECTOR DV20X-H £299
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SONNETEER SEDLEY £399
Combines transparency and fine dynamics with excellent rhythmic ability. (May 98)

PRE-AMPLIFIERS
AMC 1100 £150
Suffers from un-defeatable tone controls but an extremely good value piece of kit. Partners the similarly budget level AMC 2200 power amplifier, also at £150. Comfortable beginners’ choice. (Mar 99)

AUDIO ANALOGUE
BELLINI £475
Showcases AA’s characteristic mix of clarity and musicality and blasts the competition. (Apr 98)

CHORD CPA1800 £1800
Clarity, insight and control are second to none - an addictive mixture. (Mar 99)

CROFT VITALE
£350
A modestly priced valve preamp with exceptionally transparent performance. MM phono stage plus three line stages are standard. Volume controls are separate for each channel, thus giving balance adjustment. A remarkable item in all respects. (Feb 2000)

XTC PRE-1 * £1000
Almost valve-like in its smoothness, the line-level PRE-1 is warm and seductively clear. (Nov 96)

POWER AMPLIFIERS
ARCAM 9 * £400
With 70W on tap, the 9P will drive most loudspeakers with a spacious and detailed sound. Good bass welly too. (Dec 96)

CHORD SPM400 £1400
There’s a sense of effortless power to the Chord that gives music real scale and presence. (Mar 98)

MARANTZ MODEL 9 * £8000
Authentic reproduction monoblocs still more than cut the sonic mustard. Highly expensive and highly sought after. (Mar 97)

MICHELL ALECTO £1989
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this is a superb winning combo. (Oct 98)

MUSICAL FIDELITY X-A2006/1000/pair
200W of high-end monobloc power in a grooved tube. (Aug 98)

NAIM NAP 180 £1060
Partnered with a NAC82, this has classic Naim control, and a superbly rhythmic presentation. (May 98)

TUNERS
CAMBRIDGE T500 £180
An extremely engaging tuner with a performance at odds with its low price. Not exactly a Troufliner, but you may not notice… (Feb 99)

CREEK T43 £399
Excellent detail, separation and dynamics. A great little tuner and unbeatable at this price. (Mar 98)

MARANTZ ST 17 £600
A positive drenchdough of a tuner. Sweet and refined but with a heavy punch when needed. A tuner of this quality demands a decent aerial. (Jul 99)

MISSION CYRUS FM7* £500
A stable transport, superb head and Dolby S. (Apr 96)

SONY ST-SAJES* £250
Beguiling RDS tuner for the sonically discerning. Good ergonomics and sensitive touch. (Apr 97)

CASSETTE DECKS
AIWA AD-5750* £200
Sonically a very decent machine at the price. Comes fitted with Dolby B, C and the dead handy Dolby S. (Apr 96)

KENWOOD KX-3080* £160
A simple deck, but excellent-quality head and transport give top quality sound. (Oct 96)

PIONEER CT-5740S £430
A great piece of engineering from Pioneer, with first-rate sound. (Jun 96)

YAMAHA KS-5805E* £250
The ‘SE’ tag is more than a marketing gimmick. Sound is solid and clear with Dolby S. (Sep 97)

LOUDSPEAKERS
CASTLE EDEN £469
Impressively vice-free ‘Speakers that offer great transparency and involvement. One of a select band that simply makes music regardless. (Mar 97)

EPOS ES12 * £495
Strong, punchy bass is allied to finely detailed, articulate midrange and sparkling treble. (Oct 96)

KeF Cresta 1 loudspeakers
A very musical sound

KEF CRESTA 1 £100
Delightfully sophisticated presentation for the price. Won't blow the roof off, but will deliver a very musical sound. (April 2000)

KLIPSCH HERESY II £1100
An outstandingly high sensitivity loudspeaker with midrange and treble horns coupled with infinite baffle 12” bass driver. Effortless, fast and accurate. (May 99)

MISSION 752 * £170
Characteristically fast, punchy Mission sound from the Aerogel midbass and silk-dome tweeter. (Jul 98)
<table>
<thead>
<tr>
<th>Product Details</th>
<th>Price (£)</th>
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<tbody>
<tr>
<td>Lexicon MC1 Processor (2Yr Gtee)</td>
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<td>Linn Keltik Speakers Wal (2Yr Gtee)</td>
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**MINIDISC PLAYERS**

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**HEADPHONES**

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**INTERCONNECTS**

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**LOUDSPEAKER CABLE**

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**SAVING UP TO 50% ON EX-DISPLAY BARGAINS**

**SOUND SYSTEMS**

**BILLY VEE**

**HI-FI WORLD**

**World Radio History**

**HI-FI WORLD OCTOBER 2002**

**PAGE 91**
CASSSETTE

NAKAMICHI DR-2
A great machine with Nakamichi's legendary heads. The lowest cost 'true' Nakamichi at the time, retailing for £600.

NAKAMICHI CR-7
The last of the great ones, and definitely the best Nakamichi ever (yes, better than a Dragon).

YAMAHA TC-800G
Early classic in serious casette; its size looks got it a cult following once it had ceased to be simply ugly.

CD PLAYERS

MERIDIAN 207
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bisteam gear. No digital output.

PIONEER PD-91
Built-to-last player with easy upgrade routes for modifiers. Not knock-out as it stands but get one cheap and have a go!

CAMBRIDGE CD1
The first two box player with weighted mechanics and even an optional Dropout/error counter. Radical and effective at the time - a classic.

AMPLIFIERS

LEAK POINT ONE, TL12 & TL10
Ancestors of hi-fi, consequently expensive nowdays. As with all vintage valve stuff, overhauling is de rigueur before use, using original parts if possible.

LEAK STEREO 20
Excellent workaday classic valve amp. In good order the 20 will not disgrace itself. Various upgrades are available from specialist repairers.

LEAK TL12+

NAD 3020
You can't argue with success! NAD's budget transistor integrator gave thousands their first taste of hi-fi and remains great value.

QUAD 33/303 PRE/POWER
Great style and construction, also bullet proof. Warm and wooly sound, but easy going. A good introduction to early transistor audio classics.

LOUDSPEAKERS

OM-5: Omnipolar Speakers - Pair (Piano Black) Ex.Demo/Mint £1800 £900

OM-112: Rear Speakers - Pair (Piano Black) Ex.Demo/Mint £3300 £1650

HT-3: Spec.Stands for AVS-200 Satellites (Black) Ex.Demo/Mint £50 £25

KOMP: Omnipolar Speakers - Pair (Plastic Black) Ex.Demo/Mint £60 £30

OGM-R2: Rear Speakers - Pair (Plastic Black) Ex.Demo/Mint £8700 £4350

ND 3: Spec.Stands for AVS-200 Satellites (Black) Ex.Demo/Mint £50 £25

P4L: Floorstanding Speakers. Pair (Aluminium) Ex.Demo/Mint £5000 £2500

MIRAGE

HT-1: Spec.Stands for AVS-200 Satellite (Black) Ex.Demo/Mint £100 £40

HT-3: Spec.Stands for AVS-200 Satellite (Black) Ex.Demo/Mint £50 £25

OMG-5: Omnipolar Speakers - Pair (Plastic Black) Ex.Demo/Mint £3300 £1650

PIEGA

P4L: Floorstanding Speakers. Pair (Aluminium) Ex.Demo/Mint £1100 £549

AERIAL ACOUSTICS

acurus: TRICHORD
Mirage: Barclay: AVM
CHORD: MICHEL
PIEGA: Acoustic Signature

There are too many items to list, including Turntables, Electronics, Speakers - give us a call to see what else is available...

MIRAGE

HALF PRICE OR LESS!!!!

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2 mins. June 5 off the M4

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www.audioillusion.co.uk
mailto:audioillusion@internet.com

http://www.audioillusion.co.uk
LEAK SANDWICH
Rather warm sounding big infinite baffle but cheap with it. Wish a reasonably powerful amp could sound quite satisfying.

LOWTHER PM6A
High quality full-range driver; still manufactured. High sensitivity as fitted to many classic horn designs.

MAGNEPLANAR SMGs
Touch dry in the bass but a technological loudspeaker with genuinely musical abilities.

MISSION 770
Father of the 77 range which continues to this day. Well mannered with a warm sound and a kind head to amplifiers.

QUAD ESL57
Uninstalled. Properly serviced there is nothing like them. Their natural presentation may make them caviar to the general.

YAMAHA NS1000M
Hi-tech favourites of the Japanese and Americans. Viewed more warily in the UK but can give excellent results.

TANNOY GRF & AUTOGRAPH
Folded horn monsters which certainly sound fantastic - 14,000 Gauss magnet and extended frequency range. Inexpensive too!

TANNOY GRF & AUTOGRAPH
Many similar models of infinite baffle or retie: fold horn monsters which certainly sound fantastic - 14,000 Gauss magnet and extended frequency range. Inexpensive too!

THORENS TD150
Mid-price deck with a keen following. No real difficulty with servicing - novices may find the suspension system unnerving.

THORENS TD150
Mid-price deck with a keen following. No real difficulty with servicing - novices may find the suspension system unnerving.

TUNERS
LEAK TROUGHLINE (ORIGINAL)
Interesting ornament but no longer hits the price of a good cassette deck.

LEAK TROUGHLINE II & III MONO
Arguably the best-sounding turners ever made for the money. Adaptation for stereo easy via phono multiplex socket.

LEAK TROUGHLINE III STEREO
Excellent turner with indifferent stereo decoding circuit. Best when adapted to use modern outboard decoder.

MARANTZ ST-8
Possibly the ultimate Tardis console, including an oscilloscope for checking the strength of signal. Expensive even now.

ALPHASON HR100S
First classic arm, up to present-day standards. Buy carefully, though, as there's no service available now.

ARISTON RD11
A one-time king of turntables very similar to the Linn LP12. Now depowered but worth a look at the right price.

LINN AXIS
Uncomplicated, lower-price version of the famous Sondek. Less expensive than some of its stablemates.

GARRARD 301 & 401
Legenday turntables, once fairly plentiful. Excellent back-up available, many different custom plinths available. High quality.

GOLDRING Lenco 88 & 99
Great deck for the kitchen table enthusiast. Garrard fans won't look at 'em but cheap and capable. Servicing available.

HADCOCK 22B
Recently out-classed by Hadcock's updated 228 Special Edition but a proper hi-fi arm for all that. Makers still service.

MICHIEL FOCUS ONE
20 years and still going strong. Early runner in the 'modern' turntable cycle with a first class arm. Factory servicing available.

SHURE M150
Recently out-classed by Hadcock's updated 228 Special Edition but a proper hi-fi arm for all that. Makers still service.

SHURE M75
Everlasting classic tone-arm. Spares needles make it a handy tool.

THORENS TD124
Best classic deck ever! Judging by the prices they fetch it's possible - 78rpm too!

THORENS TD150
Mid-price deck with a keen following. No real difficulty with servicing - novices may find the suspension system unnerving.

HI-FI WORLD OCTOBER 2002 PAGE 93

LEAK TROUGHLINE II Mono
Arguably the best sounding turner ever
Choice hi-fi makes it easy for you to fulfill your sonic dreams. Quality hi-fi is not just about expensive brandnames. It's about aspiring to the very highest standards in a unique no-pressure environment.

Your Choice

- Acoustic Energy
- Advance
- ATC
- Audible Illusions
- Audio Physic
- B.A.
- Boulder
- Bryston
- Cary
- C.A.T.
- Chord
- Clear Audio
- Denon
- DNM
- Egglaston Works
- Electrogaph Delphi
- Genelec
- Gryphon
- Gram
- Integrate
- J.M Lab
- Krell
- Lexicon
- Linn
- Loewe
- Lutron
- Lyra
- Mark Levinson
- Michell Eng
- Musical Fidelity
- Naim
- NED
- Nordost
- Oracle
- Ortofon
- Plinius
- P.M.C.
- Primare
- Project
- Quadraspire
- REL
- Rockport
- Rosenak
- Rotel
- Ruark
- Seleco
- SME
- Straight Wire
- Sugden
- Tara Labs
- Teac
- Totem
- Transfiguration
- Trichord
- Trilogy
- Valhalla
- VPI
- Wilson Audio
- Wilson Research
- YBA

"The Best in New, Second Hand and X-Dem Equipment"
DIY NEWS

BUILDING ADIRE AUDIO’S HE10 ‘SPEAKER KIT’
Good, high efficiency ‘speakers don’t come cheap, unless you fancy a bit of DIY. By Clive Meakins

BOOK REVIEW
Glass Audio Projects - reviewed by Nick Lucas

DIY LETTERS
PRODUCTS INCLUDE:- Power Amplifiers 30-250W, Preamplifiers, Phono stages, Active Crossovers, Power Supplies, Buffer Amplifiers, Balanced line drivers / receivers, Stepped attenuators, Gold plated connectors, Cables, Capacitors, Resistors, Semiconductors, Transformers, Subwoofers, Loudspeaker drive units

WHITE NOISE II STATION ROAD BEARSDEN GLASGOW G61-4AW

http://homepage.niltworld.com/david.white38
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Tel:- 0114-942-2460 (until 9pm)
Fax:- 0114-587-7377

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TECHNICAL & GENERAL

SOME NECESSITIES - FROM THE ORIGINAL CLASSIC TURNTABLE SPECIALISTS

CONNISSEUR

P&P

BD1/2 Drive belt £12.60 £1.90
BD1/2 Motor Suspension kit £15.50 £2.50
SAU 2 Heatsheet £18.60 £2.90
SAU 2 Connecting Lead £16.50 £2.30

GARRARD STANDARD MODELS

Replacement 301 control knobs On-Off/Speed select £21.50 £2.90
Replacement 301 suppression unit £7.20 £1.90
Replacement 301 motor pulley L-12, (1/16), (1/8), (5/32) each £16.50 £2.50
Replacement 301 Sleeve mounting bolts nuts, washers set £7.85 £1.90
Recommended lubrication set - early 301 or 301A01 (specify) £7.20 £1.90

GOLDRING/LENCO

Idler wheel (lock nut or clip fixing) £22.50 £2.90
Tension spring £3.85 £1.90
Arm pivot bearings - with fitting instructions £6.85 £1.90
Spindle/Main bearing assembly GL.69f72 £21.00 £3.90
Chassis suspension springs (set of 4) £22.50 £3.90
Suspension rubbers ('mushrooms') £3.90 £2.90

THORENS

TD.124 series £10.50 £1.90
Idler wheel original £20.50 £2.90
Idler wheel re designed replacement £16.50 £2.90
Drive belt £24.65 £1.90
Suspension rubbers (mushrooms) £17.50 £2.90
TD.150/160 £14.50 £2.90
Drive Belt £19.35 £1.90
Suspension springs (1/16), (5/32), (1/8) (set of 3) set £14.50 £2.90
Suspension - main bushing (set of 3) set £14.50 £2.90
Armboards TD.150 blank £12.50 £2.90

CECIL WATTS

Dustbags & spares - incl. Preener wicks £10.20 £1.90

Cartridges and stylus for 78s and Mono LPs in addition to current Stereo LPs

TECHNICAL & GENERAL

PO BOX 53, CROWBOROUGH, EAST SUSSEX, TN6 2BY
TELEPHONE: 01892 654 534

THE ORIGINAL 78s, STEREO & MONO LPs...
**"A" IS FOR DIY!**

New on the scene are "A" Audiosolutions, that specialise in audio grade components. Firstly, the Kiwame silicon coated carbon film resistors, available in 2w and 5w, have the low noise of metal film with the sweet sound of carbon. They are manufactured in Japan specifically for audio use. I am hoping to feature these in the next World Audio Design upgrade kit.

The company also sell Bartolucci transformers made in San Marino (independent state on the Italian mainland). They use double C-cores for all types including mains, chokes, interstage and outputs transformers. Prices are reasonable. A C-core 300B output transformer, for example, of spec. 130mA/ 30W/10Hz-65kHz, costs £175.00 apiece.

Also available are Goldpoint stepped attenuators, discreet resistor attenuators of 24 steps, including true ladder types with only two resistors in any one position, and JJ-power supply caps of 500v including a direct replacement for the Leak Stereo 20 of 32uf+32uf.

"A" Audiosolutions 01977 798844

**SCHOOL OF SOLDERING**

Try this one for size. It's a beautifully animated site on "how to solder". The first lesson to be learnt in DIY is soldering and how to make a good join - after all this is the proverbial glue that sticks the components together. Unfortunately, the art of soldering is often overlooked, a reason why a lot of hobbyists run into trouble. I have seen a few kits that simply did not work because they were full of dry solder joints, with too much solder used. The only way to sort out such problems is to remove all traces of the defective joint and resolder - a time consuming job. The site discusses the soldering iron, solder, whetting the iron tip, tinning, making the connection, desoldering and cleaning. A 'must view' site for the beginner, before picking up the iron.

http://home.att.net/~joemacr/diyproject/soldering.html

**A SITE FOR SINGLES**

http://melhuish.org/audio - Here's a great website dedicated to single full-range driver loudspeakers. The site is full of news, articles, software downloads for calculations and analysis, write-ups of past shows, a chatroom and lots of tweek write ups. Definitely one for the purists.

**GET IT TOGETHER**

If you have ever been undecided how to store your record collection then think no more. Aphelion A.V. Concepts have devised the Format, a storage cube that you can easily fit together, no tools, no glue required. Each one is capable of storing 90 LPs or 200CDs. The Format is stackable so if you have a few hundred LPs lying around you can rack them up to make an attractive furniture piece. At £34.99 excluding carriage for the natural birch finish they are a good price. Other finishes are available at a slightly higher price. Aphelion also sell other storage solutions as well as plinths for Garrard 301 and 401 turntables, so take a look.

Aphelion A.V. Concepts
Tel/Fax: 01604 409300
aphelionAVConcepts@msn.com

**HAGERMAN BLOW THEIR OWN BUGLE**

The Bugle is a low cost, solid-state phono preamplifier, using a split, passive RC-type equalization network. The circuit is not the typical "feedback" type commonly used, but rather uses opamps as pure frequency-independent gain stages. Two of these gain stages drive the equalization networks, followed by a third gain/buffer stage to provide a low output impedance. The overall gain is thus optimally split between the three stages. The Bugle can be purchased as either a printed circuit board with full plans, so you will need to source the components or you can buy the PCB fully assembled and tested. For both kits you will need to house the PCB. The phono stage is battery powered, but you could easily make your own power supply. The device has a alternative gains of 40dB, 50dB and 60dB, input impedance of 47k ohm, output impedance 330 ohms, bandwidth (3dB) 15Hz to over 150kHz, distortion 0.05% @1kHz. Well worth a look.

www.anyeq.com
Good, high efficiency ‘speakers don’t come cheap, unless you fancy a bit of DIY. Clive Meakins builds the Adire Audio HE10.1 High Efficiency Speaker.

Low powered valve amps thrive on efficient, easy to drive speakers. This is particularly true of zero feedback Single-ended Triode (SET) and Parallel Single-ended (PSE) amplifiers. An SET or PSE sounds better the less is asked of it, there is a general rule that says the best sound is from the first watt. Without doubt, you don’t want to be regularly listening the last watt of an SET or PSE, distortion will be high.

Those who have genuinely low power amps, 1W or 2W will need to be looking at speakers that are rated at 104dB+ efficiency. These will usually have horn enclosures and may use a single full-range driver often from Lowther or Fostex. There are those who say you’ve not experienced dynamics until you’ve heard a 100dB+ speaker but unfortunately such speakers tend to have a large footprint, finicky placement and reveal the beast itself: hum.

The 9W Billie 300B SETs from www.diyhifisupply.com that I reviewed in February 2002 work very well indeed with my relatively typical “audiophile” 90db speakers. My Mordaunt Short Performance 860 speakers are no longer made but are a good example of a £2,000 floorstander. Efficiency is just acceptable at 90db, ease of drive whilst not arduous is not ideal, even so they proved a good match for the Billies.

THE CHOICE
I just had to find out what the Billies would do when coupled with a more ideal speaker. The Adire Audio HE10.1 speaker looked to be promising. It has a quoted 95.5dB sensitivity, bass extends down to around 50Hz and impedance is a genuine 8 ohm that doesn’t dip lower than 6.5 ohms.

Adire Audio trade via the internet at www.adireaudio.com. They are based in Seattle, the home of Grunge music and, of course, Boeing. As your speaker kit will need to make use of a Boeing or similar to get to you, this inevitably puts the price up.

Fortunately Adire Audio sell the HE10.1 as a kit minus the wood. The kit costs $299, shipping should be around $110 and there will also be local duty to pay. All this is admittedly a little expensive, but not so bad as to make the speakers a poor proposition. There is little competition to the HE10.1 and all-in they cannot be described as expensive. Expect to pay around £150 for custom made stands that suit these speakers, if you should so desire.

So, what do you get for your money? The bass/mid driver is a ten inch paper cone Eminence Beta 1CX with a 90 degree conical horn through the middle of the voice coil. The tweeter is a one-inch compression driver built to Adire Audio specifications; it is made to be mounted coaxially in the bass/mid. In addition to the drivers you get the reflex ports and all crossover components. Non-polar capacitors are from Solen, as are the inductors. The crossover frequency is set to 2.4kHz and is 6th order Linkwitz Riley. The crossover network is not bi-wired. Dan Wiggins at Adire told me they found no benefit from bi-wiring - good news as this keeps your speaker cable costs down. You also receive Polyfill stuffing, internal wire, nuts and bolts. Everything is present except the wood and tools. The cabinet size will be 17.5” high x 12” wide x 13.5” deep and the reflex port is located at the front, so placement nearer a rear wall is a possibility.

What specialist tools do you need? I used an inexpensive electric router, jigsaw and detail sander. You’ll need a small workbench with clamps. Also, a virtual necessity are about 6 clamps to hold everything in place while the glue dries during final assembly. Maybe you can get away with using masking tape to hold the wood in place but it’s not going to give the best result. If you simply must buy finished speakers or a flat pack kit, then these are available from www.diycable.com. Shipping MDF from the US will be expensive so check the freight rates. I elected to build the cabinets from scratch. The best results could be had from using Baltic birch ply and this should not require a veneer finish. The alternative is MDF. This is more forgiving to work with and with these being my first scratch build speakers for over 30 years 1 took the MDF route.

DOWN TO WORK
The assembly instructions can be downloaded from www.adireaudio.com. They give cabinet dimensions (in inches) but no advice on the
Adire's compression tweeter techniques to build them. Instructions on building the crossovers are much more detailed. I got my local timber merchant to cut the panels to size for me. If you use my construction method this is what you'll need for a stereo pair:

Top/Bottom (4)
- 305mm x 343mm (12" x 13.5")

Sides (4)
- 343mm x 425mm (13.5" x 16.75")

Front/Back (4)
- 285mm x 425mm (11.25" x 16.75")

To ensure the cabinets are rigid it is necessary to use a router to create simple joints in the MDF (bought as 18 or 19mm). I set the router for a 9mm deep cut that was 18mm across. Cuts were made around the four inside edges on the tops and bottoms. The sides were cut along the inside edge of the verticals. I used the router outside wearing a mask. The dust was unbelievable, be prepared for it.

Next I glued and clamped the cabinets. After a day for the glue to dry I used a detail sander to smooth off the joints, which were pretty accurate in the first place. Rapping the cabinets with my knuckles showed them to be reasonably dead sounding. You could add an internal brace, though I don't think it's strictly necessary, and you'll need to increase the cabinet volume by the volume of the brace. The instructions say there is no need to recess the main driver so you just need to cut a round hole for this and the reflex port and, finally, a rectangle for the binding posts cup. You need to drill the bass/mid driver mounting holes for the hex bolts and the special "T" nut for inside the speaker. This nut skewers itself into the MDF.

Last of all comes the crossover. You'll need a piece of MDF or similar for the circuit board. The instructions are very cautious, recommending wire wrapping the components and only soldering after testing it. Whilst I applaud caution, the crossovers will offer little challenge to those who have built their hardwired SET amps to drive these speakers. I simply soldered the connections then tested the crossover with an old, full range, car speaker using a solid-state amp. There's no point risking destroying the HE10.1 drive units or taking out an exotic valve amp. I decided to veneer the speakers later because, as must happen to most people, I couldn't wait to use them. Again, I used a solid-state amp to test them and initially run them in. Valve amps don't like running without a load so if something did go wrong the consequences could be dire.

SATISFACTION GUARANTEED

For the first 3 minutes the HE10.1s sounded dreadful. Then they started to sound OK so I left them running for a couple of hours, had dinner went back to listen with a Meridian 588 CD player, Michell Orca preamp and Billie 300B SETs. Initially I had to use 40cm stands, but these were far too low. The HE10.1s were placed in my normal speaker position, Tweeter coaxially mounted in the woofer.
feature

80cm from the rear wall and 70cm from the sides. This position worked fine. Results were pretty good with the non-ideal stands. Two weeks later my custom made stands arrived from Atacama. These are a 4 pillar design, with a top plate 300mm x 355mm and a base plate 350mm x 400mm. Overall height is 55cm. I strongly recommend mass loading the pillars; otherwise they sing along with the music. I used sand. The stand and speaker combination is impressive looking and will be improved once I get around to veneering the cabinets.

Before I describe the sound of the HE10.1s, I'd better list some of the changes to the Billie 300B SETs since I reviewed them. The SRPP driver has been reconfigured to be a Mu Stage, the last power supply capacitor has been changed from an electrolytic to a lower value ICW polypropylene. There is a 20uF capacitor connected in Ultrapath mode; that is from B+ to the top of the cathode resistor. The 300B grid leak resistor has been replaced by a grid choke from Stevens & Billington. This has also allowed me to delete the gridstopper. The capacitor across 300B cathode resistor is now made up from paralleled Mylar capacitors and finally the 300B dc heater now uses Schottky diodes with a CRC stage to compensate for the lower voltage drop of schottskys.

DIYing your SET means you can really individualise it, great fun! The greatest improvement was the grid choke followed by the Mu Stage and Schottky heaters. Most of these upgrades and others are available from www.diyhillsupply.com.

Listening to the HE10.1s, four areas impressed immediately in my 10ft x 15ft room: bass, soundstage, treble quality and integration. Whilst these are not full range speakers, many will be perfectly happy to use them without a subwoofer. I found the bass went down relatively low, albeit at a much reduced level. Talking to Dan Wiggins about this he said they used an over-damped alignment that results in a gentle roll-off.

**Soundstage?** Simply magnificent. This is a combination of the speaker itself and the benign load the speaker places on the Billies. This combination of the speaker and amps is wonderful. I've heard some say that they like SETs because they make music sound as though it is "lit from within". This is a good description of the HE10.1 plus Billies.

The compression tweeter sounds quite unlike any dome tweeter I've ever heard. It has bell-like clarity with no smearing or tizzyness, hi-hats take on a different quality entirely when compared to my Mordaunt Short 860s.

Using an Assemblage DAC 2.6 Signature wasn't as successful. Much the same qualities were there but the soundstaging and treble were clearly being held back. Feed these speakers with a top quality source such as the Meridian 588 and they will reward you. I would not say they are especially unforgiving but to sound really special they need a well sorted front-end. The speakers are slightly sweet sounding without any mushiness. As you would hope from coaxial drivers, spatial integration is ideal. It is also hard to pick any holes in the sonic integration between the drivers so, top marks here too.

Back to using the 588, the system has so much life and clarity with very good macro dynamics and fantastic micro dynamics. Vocal intonation and subtle interplays between instruments are beautifully reproduced. The sweet spot for the ideal listening position is wide. Turning to the bottom-end, to extract the last octave of bass I connected my two REL Storm subwoofers. I found them very easy to integrate, probably due to the gently rolling-off bass. The subs settings were not far away from the settings I use for the Mordaunt Shorts which are supposed to go much lower than the HE10.1, reinforcing my view that the HE10.1 bass goes lower than at first appears.

With the Mordaunt-Shorts, the Billies sounded great with most music but Pink Floyd is an example that didn't quite work. Bring on the HE10.1 and the problem is solved and I now hear much more deeply into the mix.

I'm not suggesting that orchestral music played in a large room will work with 9W. There still are limits but these won't apply for most people. So, how loud is 9W with a 95.5db speaker? Enough to make my ears ring after listening for a few minutes at high volume. You'll either be trying to go deaf or have a large room if you find there's not enough horsepower here.

I had to find out to what extent the SETs were responsible for the sound I was hearing so, I connected up my Michell Alecto 100W solidstate monoblocks. The results were in line with what you might expect. The Alectos had greater authority in the

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**MDF cabinet ready for crossover and driver mounting**

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I had to find out to what extent the SETs were responsible for the sound I was hearing so, I connected up my Michell Alecto 100W solidstate monoblocks. The results were in line with what you might expect. The Alectos had greater authority in the
bass, the Billies showed greater alacrity in the mid and top-end. The Billies had the better separated and defined soundstage. The "lit from within" characteristic to music was somewhat dimmer with the Alectos with less emotion being reproduced. I would describe the Alectos with the HE10.1 as impressive; with the Billies I'd use the word magical. Choose the seasoning (amplifier) to match your taste.

I found that I could hear much larger differences in recording quaky than I'm used to and the same is true for different makes of valves. Indeed I could have written my May 2002 review of 300Bs much more quickly with the HE10.1s. The results would have been the same but the revealing nature of the speakers would have made for much more rapid auditioning.

**TWEAK-TASTIC**

Finally, I couldn't resist trying some even better parts in the crossover. It would be possible to replace every component in the crossover with expensive parts but it wouldn't make sense to spend so much given the original cost of the HE10.1s. I discussed the options with Audiocom and decided to change the Solen capacitor and inductor that are in series with the tweeter along with the internal wiring for both drivers. In went a 0.39mH Corobac Iron Dust Core inductor (£13.70 per pair), resulting in greater clarity and improved soundstage. There was generally more bite to strings and instruments that go "ding"; vocals seemed unchanged.

Next in went Teflon insulated, silver clad OFC wire. There are two sizes. I used thin (0.25) for the tweeter and thick (0.45) for the bass, 4 x 0.8m per cabinet (£22 for both speakers, 8 x 1m). This gave a sweeter and more refined sound. There was also a touch more authority and depth to the bass. Lastly I swapped the Solen 1.8uF capacitor for a better polypropylene, an Audyn KP SN (£14.80 per pair). This gave a more open and detailed sound, coupled with a lack of harshness. Strangely, bass seems to have better definition too. Improving one end of the frequency spectrum sometimes changes the perception of the other end. I'd rate the wire and capacitor changes of equal importance with the inductor in 3rd place. Whilst these changes are not night and day, the speakers are great as standard anyway; they do add that little bit extra. Music was sweeter sounding with more detail and a little snappier too; it timed better.

There is no question that the combination of the HE10.1 and a 9W SET amplifier shows great synergy. A 2A3 SET should work well too with a reduced maximum sound level. Mind you, the WAD 2A3 PSE should be a similar league to a 300B SET. By the time you read this, Adire Audio should have released their HE8.1 and HE12.1 to give you more options on efficiency, size and bass extension. The HE10.1 is great value and shows what we are missing with less efficient speakers. Lower power amplification generally offers more immediacy and delicacy; if you value these qualities then the HE10.1s make going this route a breeze.

**Hey presto - the finished item, hopefully!**
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logue. Page 102 OCTOBER 2002 16 HI-FI WORLD 00 SUPPLEMENT
Glass Audio is a long running US publication of some 15 years standing, a periodical for valve lovers with a serious DIY streak. In 2001, Glass Audio merged with two other titles to form AudioXpress. So, lifted from the massive resources of Glass Audio magazine is a collection of seventeen vacuum tube designs that have come together to create Glass Audio Projects.

Over the years Glass Audio have collected a good stable of authors/designers and many are featured within this book, such as Joseph Norwood Still, John Stewart and Satoru Kobayashi of MJ Audio Technology fame. All the projects contained have been thoroughly tried and tested; these guys do not do things by half. All the articles have a very logical layout and go into great detail, beginning with an outline of the design brief and an introduction to the valves being used and the configurations adopted.

We then move onto a break down of the designs along with circuit diagrams, measured performance traces, valve characteristics curves and a full parts list. In some articles, small experiments are carried out to determine the difference between different valves or a slight change in the circuit design - very tweak stuff.

On the physical front some of the prototypes look a bit Heath Robinson but others are properly built and look very professional. Details are given for all important physical positioning of the transformers and valves. Some designs give full chassis dimensions including all the cutouts, even the screw holes. For those of you who like to mess around with the math of amplifier design, some of the projects list equations in great detail, but for those of you who are more practically minded, the maths is more of a sideline issue and is not vital to emulate one of these designs.

Assembly is usually outlined and last but not least there is a listening test.

If you are interested in constructing any of the designs written about within this book, kits are not available, it would be a matter of buying in all the parts yourself. This is a very labour intensive exercise and one for the expert builder.

Being an American publication most of the components are sourced States side but all ces go specifications are given. Mains transformers have their current and voltage rating noted for all secondaries windings, output transformers have their primary-secondary impedance ratios detailed, so any competent transformer manufacturer will have no problem making these up. In fact you may be able to buy some of the output transformers off the shelf within the UK. Also, you could ship the parts in from the States but note that the US mains voltage runs at 120Vac so avoid these transformers.

Some of the projects use very exotic components. A 300B Parallel single-ended amplifier by Andrea Ciuffoli has no fewer than nine Lundahl transformers, a Swedish company that specialises in very high-end audio C-core transformers. These parts alone would cost a small fortune. The SV300B push-pull amplifier by Satoru Kobayashi uses a Plitron toroidal transformer designed by Menno van der Veen. These output transformers are said to reach up to 150kHz.

With this publication you get real esoterica. It is a heady mix not easily found elsewhere. This book is available from World Library P68-P69 Code 1790 Paperback 73pp. 205mm x 270mm Price £8.00 + £1.50 UK P&P
**STANDARD TYPES**

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**SPECIAL QUALITY TYPES**

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**12BY7A**

GE     7.00
5687WB    6.00
5814A     5.00
6072A     10.00
6146B     15.00
6201      6.00
6336A     35.00
6922      10.00
7027A     25.00
7308      5.00

**E88CC**

TESLA  4.00
ECC81    3.00
ECC82    6.00
ECC83    8.00
EF86     4.00
EL84     3.00
EL34G    5.00
EL34     6.00
6L13GT   7.50
6SN7GT   7.50
Got a problem? Hi-Fi World's experts answer your DIY and kit queries

BEGINNER'S LUCK

I have been an avid reader of Hi-Fi World ever since its birth. I recall, way back in February 1993, when you released your first D.I.Y. Supplement banded to the main issue, featuring an Audax Pro 317 speaker kit, an article on how to use an oscilloscope, DIY book reviews and an Audio Synthesis D to A Convertor kit. I must admit I was a touch sceptical, being a non-DIYer. Now many supplements later, I feel I must eat my words. Your supplement must have featured over 20 projects with accompanying kits, numerous articles and the pages are full of adverts of DIY Hi-Fi related companies selling audio grade components, kits, repair services and build services from all over the world.

Now, as I approach retirement with the prospect of time on my hands (hopefully), I want to start building. However I must confess I have little experience other than reading your articles and a few physics lessons 40 years ago. What would be your advised path to get me on the correct road to building valve amps?

Mr N E Hibbert
Gloucestershire

It brings it all home Mr. Hibbert. Nine years - and I remember the first issue! Our first Mullard 5-20 kit was contracted out to a company in the South of England, it didn’t go well, so WAD was created so that a closer eye could be kept on everything, to keep readers happy. The rest, as they say, is history.

The best way to learn about electronics is to get your hands dirty. For this you need the tools of the trade, a soldering iron, solder, pliers, cutters, and a multimeter. The soldering iron and solder have to match, i.e. the iron tip needs to get hot enough to melt the solder. In the past 10 years I have used mains powered Antex 25 watt irons - they are cheap and reliable. These can be purchased from Maplin Electronics (tel. 0870 264 6000 or see www.maplin.co.uk, order code FR21N) or from Rapid Electronics (tel. 01206 751166, order code 85-1140). A solder ideal for the 25 watt iron is available from Maplin code No FR21X.

For the pliers, cutters and desolder pump both companies sell numerous types. Go for the snipe nose pliers, side cutters and the cheapest pump as they are much the same.

For the multimeter, if you are working on valves you really need one that can read up to 1000Vdc. Try Rapid’s, 318 Digital Multimeter at £18.50 exc. VAT. I use one and it is superb. Antex (www.antex.co.uk) have the complete package in a nice plastic case at £52.00 exc. VAT. But watch out for the meter, it is a basic one.

Now you have the tools you need to practice with and what better way than on a little kit? Maplin do numerous cheap kits at around £10.00, varying from a 2.5W mono transistor amplifier at £9.99 to a mains detector kit. These are excellent for cutting your teeth on and Maplin also provide a little booklet on soldering. The first thing I built was Maplin’s stroboscope which I fitted into the headlight from a Renault 5 that I purchased from a scrap yard! With these kits you get to solder and you can experiment with your meter.

There are a lot of books on the market. The first book I would go for is Ian Sinclair’s ‘Electronics Made Simple’. This gives a brilliant introduction to basic theory and components. It doesn’t mention valves but it is good for everything else.

Next is the Beginners Guide to Tube Audio. This is a great for valve theory and all aspects of design. All these books are available from World Audio Design on-line (www.worldaudiodesign.co.uk).

Once you have a good understanding of basic electronics and feel confident with your soldering you are ready for bigger items, like valve amps. An aside here worth mentioning is something I did once is to pick up a cheap valve amp from a car boot sale and mess around with it. The only problem here is that the amp might not work and you really wouldn’t be experienced enough to fix it.

Small kits are very different to valve amps. The latter operate at much higher voltages and care must be taken, but the technology is simpler, there are fewer components and they are a lot more rugged.

There are plenty of kits around. A printed circuit board based kit is usually easier to construct than a hard-wired kit, but sonically hard wiring is better. Our KEL84, for example, is aimed at the beginner and has been well received. It combines ease of construction with a fine, sweet, audiophile sound. The number one trick of advice is, take your time and check, check and recheck. Happy building.

NL

Electricity made Simple is a good starting point for budding valve enthusiasts
In - Perspective Audio

New and Ex-Dem and Pre-Owned Equipment

Pre Amps

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<th>Equipment</th>
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<td>Jeff Rowland Comsumate inc. Phono</td>
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<td>Modulus 3A Mk II S/H mint</td>
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<td>RockPort System II</td>
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AUTUMN ARRIVALS

Not much new has appeared during the summer, but no doubt all will be revealed at the Heathrow Hi-Fi Show on Sept 13/15. I am already very excited about the new integrated amplifier from AVI, which I should have received by the time you read this. As regulars will know the original AVI integrated is one of my favourites, my only real complaint being no phono stage, no pre-out and not as much bass as the monoblocks. With 180w/ch (8ohm) I’m sure the latter problem will have gone, and the phono stage (optional) can be tailored by AVI to any cartridge. Price to be confirmed, but will be great value! Also due is a matching 180w/ch stereo power amp, plus 300 watt (8ohm) monoblocks. On the speaker front there is a Pro-Nine Plus, basically a Pro-Nine in a 12 litre box instead of 9, giving better bass extension for free standing use, as opposed to corner/shelf mounting. At substantially more (£9k) I am evaluating the Infinity Prelude MTS, consisting of a tower (6 drivers) plus 850watt subwoofer, which can be split, so you can use none, one or two sub-woofers. With R.A.B.O.S. (Room Adaptive Bass Optimization System), they can be tailored to any room, and have huge scale. Very sensitive to amps/cables but for anyone prepared to pay, have huge potential; great for home cinema as well. Do ring.

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**Audiolab 8000C (Pre)**

**Harmon Kardon Citation 17 pre**

**Exposure 7/8 Pre + Power Amplifier**

**Wilson Benesch Acton I Tonearm**

**Tuners**

**Cassettes & Tape**

**Speakers**

**Valve Amplifiers**

**Price List**

**World Radio History**
### S/Hand and ex-demo clearance items - October 2002

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<td>Air Pod size 1 x 3 S/H</td>
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| **Amplifiers**                     |       |       | Transparent Music Link Ultra Balanced 7.26m S/H|
|-----------------------------------|-------|-------|Transparent Music Link Ultra XLS Balanced 1m S/H|
| ATC SIA-2 150 Integrated S/H      | 2495  | 1799  | Transparent Music Wave Ultra Bi Cable 2.5m S/H|
| Audio Research CA50 Valve Integrated S/H | 3495  | 1999  | Transparent The Wave 2X7m S/H            |
| Audio Analogue Donezeft Power Amplifier x-demo | 599   | 245   | Transparent The Wave 2X7m S/H            |
| Bow Technologies Wazzo X Amplifier x-demo | 2495  | 1950  | Transparent The Wave 2X7m S/H            |
| Electrocompaniet EC1-3 x-demo     | 1095  | 695   | Transparent The Wave 2X7m S/H            |
| Electrocompaniet EC1-4 x-demo     | 1900  | 1299  | Transparent The Wave 2X7m S/H            |
| Electrocompaniet AW180 Mono Amplifiers x-demo | 4000  | 2999  | Transparent The Wave 2X7m S/H            |
| Graaf GM20 OTL Stereo Valve Amplifier S/H | 3295  | 1956  | Transparent The Wave 2X7m S/H            |
| Mark Levinson No334 Power amplifier x-demo | 5495  | 4499  | Transparent The Wave 2X7m S/H            |
| Roksan Rok S1.5 Power Amplifier S/H| 1499  | 945   | Transparent The Wave 2X7m S/H            |
| Union Research S8 Valve integrated S/H | 1600  | 1200  | Transparent The Wave 2X7m S/H            |

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<td>RUARK TALISMAN MKI BLACK ASH VGC</td>
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<td>ROKSAN DP I/DAI/DS4 BOXED SUPERB CONDITION</td>
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SUGDEN AUSIC/AU51P pre/power excellent 2700 1500
SUGDEN AUSIC/AU51P SE CELTIC SOUNDBOARD quality 858565
MARANTZ sound system with monoblock and cassette deck, silver finish 2500 1250
SPECIAL SYSTEM 250 watt professional power amp, all new channel and heavy with grab handles and nu romens 2500 1250
SPECIAL SYSTEM 250 watt professional power amp, all new channel and heavy with grab handles and nu romens 2500 1250
3500 1995
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PHONE FOR LATEST LIST
NEW, EX-DEM AND CLEARANCE ITEMS

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<th>RRP</th>
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<td>Linn Kebos</td>
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<td>£699.00</td>
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- Aretha Franklin: Soul 69 £15.90
- Dusty Springfield: Dusty In Memphis £15.90
- Handsome Family: Twilight £13.90
- Led Zeppelin: Songs Remains The Same 2LP £41.90
- Jackson C Frank: Blues Ran The Game 15/8 £14.90
- Toploader: Magic Hotel 15/8 £TBC
- UB40: The Fathers Album 15/8 £TBC
- Supergrass: Life On Other Planets £TBC
- The Music: The Music £15.90
- Peter Gabriel: 1 (Classic Records) £26.90

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COLDPLAY "A RUSH OF BLOOD TO THE HEAD"

- Alicia Keys: Songs In (Finally In Stock) 2LP £14.90
- Ben Kweller: Sha Sha £12.90
- Beth Orton: Daybreaker £15.90
- Bruce Springsteen: The Rising £14.90
- Dirty Vegas: Dirty Vegas £18.90
- Flaming Lips: Soft Bulletin (At Last On Vinyl!) £14.90
- Flaming Lips: Yoshimi Battles The Pink Robots £14.90
- Funkadelic: Uncle Jam Wants You £11.90
- Gentle Giant: Octopus £10.90
- Ideswild: The Remote Part £15.90
- India Arie: Acoustic Soul £14.90
- Lovin Spoonful: Do You Believe In Magic/Daydream £16.90
- Max Roach: Percussion Bitter Sweet £19.90
- MC5: High Time / Back In The USA £15.90
- N.E.R.D (Neptunes): In Search Of £18.90
- Ozzy Osbourne: Blizzard Of Oz (Simply Vinyl) £18.90
- Primal Scream: Evil Heat £14.90
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- Stooges: Stooges/Unfunhouse Each £15.90
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<th>Product Description</th>
<th>New Price</th>
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<td>BRYSTON 7BTHX MONO BLOCK POWER AMPLIFIER</td>
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<td>SAMANTHA SCOPE</td>
<td>SKIFF 301 loudspeakers 94dB floorstanders in light oak, absolutely superb sound. Mint. Cabasse lifetime guarantee. Boxed.</td>
<td><a href="mailto:samantha.scope@ntlworld.com">samantha.scope@ntlworld.com</a> or 0789 966 8945 or Email: small! Tel: 0115 972 617E.</td>
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<tr>
<td>NAIM CDS (1)</td>
<td>82 pre-amp Hi-Cap 250 power amp. New style Naim cable and interconnects. Can demonstrate £3950 ono.</td>
<td>Tel: 0114 2669726 (Sheffield) Email: <a href="mailto:sfsponder@hotmail.com">sfsponder@hotmail.com</a>. (Nov(1))</td>
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<tr>
<td>NAIM NAC 52</td>
<td>Original PSU matched 135's and Monitor Audio Studio 505 rosewood inc. 5m NAC A5 £6000. May split. Chord solid RCA Din 1m £60. Optima 44D stainless finish £200 Tel: 07968 998948 (Oct(I))</td>
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<td>EXPOSURE 18</td>
<td>Stereo power amp £440 or swap/part exchange for sub woofer. Tel: 01934 863621 or Email: <a href="mailto:cheri@offcampus.net">cheri@offcampus.net</a> (Bristol) (Oct(I))</td>
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<td>SONAS FABER</td>
<td>Guarneri 6 months £2300, boxed, immaculate, incredible. Linn Sara 9 black, new stands £450. Avordale RMS mini monitors, 1 year, £1200. Denon DCD5000 chipped £1000. Philips CDWR Writer £125. Broom cupboard forces sale. Consider px for anything valuable or small. Tel: 0115 972 6178 or 0789 966 8945 or Email: <a href="mailto:samantha.scope@ntlworld.com">samantha.scope@ntlworld.com</a> (Oct(I))</td>
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<tr>
<td>TUBE TECHNOLOGY</td>
<td>Genesis amplifiers 100wpc excellent condition £1300. Pair Musical Fidelity M3 Nu-Vista integrated amplifier 250 wpc, pristine as new condition £1475. Tel: 01494 873358 (Oct(I))</td>
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<tr>
<td>WANTED:</td>
<td>ROGERS, Harbeth or similar, one pair of LS35a speakers. Must be in excellent condition. Private buyer. Tel: 01394 388 399 (Oct(I))</td>
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<tr>
<td>NAIM GOOD</td>
<td>as new, very little used pair 315s monoblocks £2300, Hi-Cap £400. Tel: 01873 858 969 (Oct(I))</td>
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<tr>
<td>WORLD AUDIO KAT</td>
<td>6550 valve amp professionally built, hardly used £400. SME 3009i, immaculate, boxed, unused for last 20 years £80. Decca Gold, new stylus £100, Tel: 020 8393 4265 (daytime) (Oct(I))</td>
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<tr>
<td>PMC F81 speakers, brand new, in oak £900. Tel: 01206 298 836 or 07870 840 425 (Oct(I))</td>
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<tr>
<td>NAIM CDS</td>
<td>£1000. Naim Nait 5 £700, both brand new, boxed, with remote and interconnects. Unwanted prize. Will accept £1500 o.v.n.o. for both. Includes one years manufacturers warranty from date of purchase. Tel: Peter 01482 897 040 or Email: <a href="mailto:naim@thomas.karoo.co.uk">naim@thomas.karoo.co.uk</a> (Oct(I))</td>
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<td>MUSICAL FIDELITY A3Pre and A300Pwr, 3 months old, as new, box + receipt, £1600, MF NuVista speaker cable 4x3m, offers. Target R1 stands £145. Chario Academy 2 excellent condition, £95 Tel: 07866 434488 (Oct(I))</td>
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<tr>
<td>NAIM NAP 250, old style £700. Linn Sara 9s with Linn stands £350. Naim Naxo 2/3 way £250. Exposure active crossover for Isobarkies £250. Tel: 01245 283125 or 020 7774 6641 (Nov(I))</td>
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<td>NAIM NAP 250 £1200. Tel: 020 7774 6641 (Nov(I))</td>
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<td>RECORDS:</td>
<td>Puccini £300 ono. Tel: 01873 858 969 (Oct(I))</td>
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<tr>
<td>QUICKSILVER MONOBLOCK valve amps. Original condition, comes with spare matched valves £825. Tel: 01432 275203 (Oct(I))</td>
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<tr>
<td>DENSEN</td>
<td>CD player with remote power supply. True reference, very rare, immaculate. Price inc. Omega II 007 Ref Electrostatic Ear Speakers, fabulous sound, £3850. Tel: 01744 61 43963 or 07958 917576 (Staffordshire) (Oct(I))</td>
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<tr>
<td>KEF</td>
<td>103/3 rosewood, excellent condition £895 ono. Monitor Audio 50 SE cherry finish, excellent condition £1295 ono. Nakamichi 600 £80. Tel: 020 8942 6553 (Oct(I))</td>
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<td>LOGIC</td>
<td>DM101 with Syrinx LEI arm, Origin Live DC motor mod £250. Also Rega Planar3 with RB300 arm and Linn K9 £150. Tel: Archie 0131 661 5002 (Oct(I))</td>
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<td>QUICKSILVER</td>
<td>MONOBLOCK valve amps. Original condition, comes with spare matched valves £825. Tel: 01432 275203 (Oct(I))</td>
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<tr>
<td>SONY</td>
<td>TC525W tape recorder, inbuilt amplifier, lid speakers, handbook, box used tapes, £150. Garrard 401, clean £150. SME 3009 arm, MC10 Super, ADC headshell, clean £150. Tel: 07710 82 82 86 (Brighton) (Oct(I))</td>
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<tr>
<td>STAX SRM T2</td>
<td>vacuum tube driver unit with remote power supply. True reference, very rare, immaculate. Price inc. Omega II 007 Ref Electrostatic Ear Speakers, fabulous sound, £3850. Tel: 01744 61 43963 or 07958 917576 (Staffordshire) (Oct(I))</td>
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<td>REL</td>
<td>STORM 3 £600. Onkyo TXOS 939 £500. Celestion SL700SE including stands £500. Quad 2 monoblocks x4 including pre-amp, FM/FM radio £600. Meridian 561M months old £2250. Tel: Roger 020 8651 2929 or 0787 674 3720 (Oct(I))</td>
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<tr>
<td>REGA</td>
<td>ELICIT amp, mint condition, boxed, excellent phono £299. Tel: 01782 810 295 (Oct(I))</td>
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<tr>
<td>REL STORM 3 £600. Onkyo TXOS 939 £500. Celestion SL700SE including stands £500. Quad 2 monoblocks x4 including pre-amp, FM/FM radio £600. Meridian 561M months old £2250. Tel: Roger 020 8651 2929 or 0787 674 3720 (Oct(I))</td>
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Stax SRM T2 vacuum tube driver unit with remote power supply. True reference, very rare, immaculate. Price inc. Omega II 007 Ref Electrostatic Ear Speakers, fabulous sound, £3850. Tel: 01744 63 656 or 07765 808 374 (Oct(I)) |

DENSEN CD player with Grano remote control. Mint and boxed. Very light use, £625. Tel: 01923 224 404 or Mobile: 07790 524 246 (Oct(I)) |

LINN | (2001) GENKI £600, Kolkektor £300, Kudos £400, 2x LK 140 £500 ea., Katan £300, Aktiv boards £125 pr., or system £2250. Tel: 07796 001 072 6-7pm only. (East Kent) (Oct(I))
HEATHCOTE AUDIO

TEL: 01992 653999 MOBILE: 07860 511111 E-MAIL ADDRESS: HeathcoteAudio@Aol.com

www.soundexpensive.com

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MUSICAL FIDELITY P270.2 power amplifier, boxed £595.
Musical Fidelity MX pre-amp £350. Linn Keilidh with plinths, black ash £375. All items in excellent condition. Tel: 01904 763 157 or 07960 615 375 (York) (Oct(I)

MICROMEGA T-DRIVE. T-DAC, mint, boxed £900 ono. Pioneer PD-S707, mint £150 onvo. Kenwood DP-X9010 transport, vgc £160 onvo. Sony MDS-20ES, mint £200 onvo. Audio Alchemy V.A.C. In The Box, Power Station 3, mint £250 onvo. Audio Source Stratis III interconnects (3x1m) £50 each. Tel: 0118 9312290 or 07957 344541 or Email: srocha37@aol.com (Oct(I)

RUSS ANDREWS 8-Way Purifier block £400. Super Purifier add-on for block £250. Both mint. Yamaha KX480 cassette w/IR remote £70. Senheiser HD600 headphones, boxed, as new £110. Tel: Chris 020 8543 5531 evenings. (Oct(I)

ARCAM DIVA A85 amplifier, brand new, boxed, excellent condition £1750. LS50 slight humming from one bass unit £100. Tel: 07958 615817 or 01256 460 711 (Oct(I)

SKISLOPE VINTAGE cassette Aiwa 1250, unmarked but requires attention £35. Denon DCD890 20bit ASLC remote, boxed, UK model, immaculate £75. Pioneer PDS 703 stable platter, remote, boxed £70. Tel: 01453 546191 anytime (Oct(I)


MUSICAL FIDELITY XP100 pre amp PSU and remote, mint with warranty £475. Quad 34/306 with manuals as new £400. May split. Tel: 01484 423065 (Oct(I)

MARBLE PLINTH for Garrard 401, professionally made, white marble lined with perspex, drilled for Rega. Amazing sound! £150. Phy's/sand laminate plinth for Rega £60. 'Armony' armbase (Rega) £30. Tel: 01909 470 192 or Email: rayspinkle@supanet.com (Oct(I)


LINN KAIRN pre amplifier £450. Linn LX100 power amplifier £225. Linn Kaben £495. Linn Linto £375. Kaber Active cards £100. All excellent, as new condition, Tel: 01745 540 210 for details. Will negotiate (Oct(I)

NAIM AUDIO NAP180 (£1155) £650. CD 3.5 (£1070) £550. Flat Cap (£180) £175. All items 2-3 years old. Inc. manuals, boxes, as new, will swap all 3 items for Naim CDX CD player of similar age. Tel: 0121 385 0459, Mobile 07789 904 529 (Oct(I)

SUGDEN A219 with phono stage as new, few months old, £700. Tel: 01202 429 353

NAKAMICHI CR-4E audio cassette deck £300. Quad 405 £150. Sony DTC 750 digital audio tape deck £200. Sony CDP-555 ESD compact disc player £700. Sony PCM-Fi digital audio processor £150. Tel: 01443 813522 (Cardiff) (Oct(I)

AUDIO ANALOGUE Bellini pre, Donizetti power £500. Ecosse Reference MS 2.3 speaker cable 2x5m £100. Cable Talk Broadcast 3 interconnect 1m pair £50. Tel: 01526 861346 (Beds) (Oct(I)

IMPULSE H7 compact horn loudspeakers, silver-wired, black finish £450. Tel: 020 8572 2504 (Oct(I)

TUBE TECHNOLOGY valve amps. TT Prophet pre amp, £795. TT Unysis Signature power amp £795. TT Integrat-ed valve amp £795. Vibez stand £250. Tel: 01491 628 075 or 07736 808 828 (Oct(I)

TOTEM MODEL I Signature speakers £795. Boxed as new. 'Something Solid' speaker stands in black. 20 inches tall would suit small to medium sized speaker, ideal for Epos ES1. New £325 will accept £95. A complete bargain. Tel: 01636 830944 (Oct(I)

SME 20 fresh from full factory upgrade. Includes little used, gold plated Series V arm. OI'0 £400. Wanted: Quad 707. Tel: 01273 797674 or Email: bendonna@burrowes.freeseerve.co.uk (Brighton) (Oct(I)

AUDIO ANALOGUE PUC-CINN1 SE (black) as boxed, for new bargain £250. Tel: 0121 344 3598 (Birmingham) (Oct(I)

EAR 509 valve mono blocks 100 wpc £900. Audio Research SP9 valve pre amp £700. Linn Kaber speakers black £600. Mana Acoustics stands several from £30. Tel: Bob 01785 761295 (Oct(I)

MAGNUM REF125 monoblocks/pre £650. Crimson monoblocks £695. Cary valve pre amp £495. Audio Analogue Bellini Donazeti £650. Krell DSP top loading transport £11595. Tel: 01277 211685 or 07966 267404 or Email: com@binternet.com (Oct(I)

LEVINSON NO.39 £2995. Levinson LD27 £1895. Aragon 4004 £895. Threshold pre amp £250. Linn Pretek £195. M/Flidfen 3A pre £150. M/Flifiden Suphion pre/mono £545 AR Cambridge SA200 £250. Tel: 01277 211685 or 07966 267404 or Email: com@binternet.com (Oct(I)

MUSICAL FIDELITY Nu Vista 3D CD player £2250. Thiel CS3.6 loudspeakers. World Class leading speakers (£5495) £2600. Tel: 01508 499586 evenings or leave message by day (Oct(I)

LINN LP12, Lingo vgc £800. Linn LP12 Nirvana Valhalla Rega RB30, boxed, vgc £350 onvo. Rega RB250 modified counterweight (Martin Bastin) boxed £100 onvo. Cabletek 4.1 bi-wire 4.3m £30. Offers: Denon DL-304, AT-0CS, Linn Trak, Pickering V15, Shure: M75-65, M70B, Stanton 500MK2 + spare stylus, ADC headshells, SME flexible link and 5din to 2 phono. Tel: 01909 470 192 or Email: rayspinkle@supanet.com (Oct(I)

DENSEN B300 power £450. Sugden A21A £450. Blac 310 jet + stands £475. Sony SX940 SACD £125. Audio Synthesis PAS-02 pre amp £85. Quad 34 pre amp phonos £95. Tel: 01604 645590 (Nov(I)

NAIM CDS (176698) £695. NAC1i2 (175874) £395. NAP180 (174101) £725. AVI Pro-9 speakers inc. Target stands £500. All items mint. Contact Neil 0131 539 0198 or 07766 563247 or Email: nmason28@hotmail.com (Oct(I)

AUDIO LAB 8000A black late model boxed instructions £250 ono. Epos ESII silver wired polypropalene caps with Partington Dreadnought stands £275 ono. Tel: 01226 745126 ask for James. (Oct(I)

DESIGN CENTRE Classics, Armstrong 621 amplifier, 624 FM tuner wood sleeves, boxed, manuals, Keosonic Kub speakers, Walker GJ 55 deck all teak, offers for system. Tel: 01242 604060 (day) 01242 620437 (evening) or Email: lp.books@argonet.co.uk (Oct(I)

MARANTZ CD94 £300. Yamaha NS100M £120. Musical Fidelity The Preamp II MC/MM £100. AMC CVT3030 integrated valve amp £190. All in good working order. Tel: Brian 01272 814028 evenings (North Devon) (Oct)

NAIM 140 32.5 Snaps, black £450. Pure silver 4 din Naim cables £40. All mint. Yamaha 580 KX S.E. tape deck boxed (£250) £60 or swap for DAC. Tel: 0191 460 5251 (Oct(I)
Upgrade your turntable

“its value is nothing short of tremendous”
LISTENER MAGAZINE

“The single most important upgrade you can ever make to any record deck concerns the motor drive...nothing can compare you for the shock of going DC, in a word Gobsmacking”
COMMON GROUND MAGAZINE

“If you are thinking of upgrading your system.....the Origin Live dc-motor kit should be high on your list for consideration”
TNT AUDIO internet magazine April 2000.

Whatever your current turntable, the results in upgrading to the Origin Live dc motor and power supply are simply astounding. Designed as a drop in replacement for almost all turntables, the Origin Live upgrade kit provides vast improvements to all versions of Linn turntables, as well as Ariston, Rega, Systemdeck, Roksan, Rock, Oracle, Thorens, Well Tempered etc. With only a 12 Volt power supply and a full set of illustrated instructions our upgrade is both easy and safe to install. The upgrade is also offered with a full money back guarantee if you are not satisfied. The kit consists of a high grade dc motor, soldered regulator board and power supply at only £262. This provides an extremely cost effective route to truly high end audio and is significantly superior in performance to other power supply upgrades costing 4 times the price. A larger purpose made transformer is also available as an optional extra at £175.

New breakthrough design - Laminar flow interconnect

A high end sound with a sensible look and price tag
HI-FI WORLD July 2001

The Ultra’s are a deeply satisfying musical product and a supreme bargain
STEREO TIMES Aug 2001

“The reference interconnects are a must listen...highly recommended and another winner...”
STEREO TIMES Feb 2002

The new Laminar flow range of interconnects embody an all new ground-breaking design. The “Ultra” version is guaranteed to outperform all other interconnects up to 4 times it’s price and the “Reference” is a cable that reviewers use to judge other cables due to it’s incredible transparency and musicality.

Don’t purchase a more expensive interconnect until you have heard new laminar flow cable. With a full 3 week, cast iron money back guarantee if not satisfied, arrange an audition with your local Origin Live dealer or place an order with us directly.

Advanced interconnect: £45 per stereo pair
Laminar Flow Ultra Interconnect: £65 per stereo pair
Laminar Flow Reference Interconnect: £159 per stereo pair

Origin live turntables

In self assembly form

“this Vinyl front end had my jaw heading towards the floor with the solidity and transparency of the music it was making”...“the standard came up with crystal clear images set in a broad sound stage”...“with all these goodies in place the Standard would give turntables at the £1200 - £1400 mark a hard time”
HI FI WORLD SUPPLEMENT

“Overall a deeply impressive deck...Brilliant value for money...component quality is superb and the build process is a doddl”
HI FI WORLD March 2002

“The best sounding deck here...sounds fantastic”
(5 stars symbols) WHAT HI-FI MAGAZINE group comparison test of 8 leading turntables

Now you can own a professionally built, high performance turntable at a fraction of the normal cost. Origin Live turntable kits are supplied in 3 different specifications:

1. The complete standard kit offered with a non-suspended pre-drilled & finished plinth at £349.
2. The complete ultra kit offering a truly high end suspended sub-chassis turntable with beautifully finished solid cherry-wood plinth at £538
3. A standard kit of parts for a plinth of your own design at £282.

All kits are supplied with well illustrated instructions and are easier to assemble than many of today’s pre-built turntables.

Optional parts are also offered to allow flexibility and upgrading.

Turbocharging your Rega arm

“Nothing less than total dynamite ”
HI-FI WORLD

If you are the proud owner of any rega tonerarm, you are now in the enviable position to catapult it’s performance into the league of super arms with modifications offered by Origin Live - the structural modification at £75 will enable your Rega to perform at a level exceeding that of arms costing over £1200. High performance rewiring with high grade litz cable is also offered at an additional £70 and external rewiring is £70- this further increases the performance.

“I have to say the Rega modifications turn this humble arm into a real Giant killer. Gone is the rather grey, sterile sound of the cooking Rega. Instead, tonal colour is fresh, dynamics have great speed and impact, and the sound stage is huge.”

HI FI WORLD SUPPLEMENT NOV 97 (structural modification to an RB250)
WHAT HI-FI MAGAZINE gave this modification a 5 star rating.

For arm modifications we normally return your arm in 2 - 3 days

FOR FULL INFORMATION SEE WEB SITE OR CONTACT
Origin live, Unit 5, 362b Spring Road, Sholing, Southampton SO19 2PB
Tel: 023 80578777 / 80363249 Fax: 023 80398905 E MAIL: originlive@originlive.com
WEB SITE: http://www.originlive.com
MIRAGE M35i immaculate super high end speakers black finish can demonstrate £1500. Tel: 0781 3211891 or Email: anders-home@sebnini.com (Oct(I))

MICHELL GYRODEC, RB300, Sumiko Blue Point, QC supply. Ear B 34 (with Mullards). Some accessories and spares. No offers. No splits. Buyer collects. Tel: Rod 01223 290619 (Cambridge) (Oct(I))

ARCAM A85 amplifier Mission 774 arm, 733 cartridge. Quad 44, Quad 405-2 amps. Complete £1995 may split. Tel: Roger 01902 784508 after 6pm (Oct(I))

ARCAM ALPHA 9 amp (boxed) £320. Celestion SL600 speakers (boxed) £250. Rotel RB 850 pre-amp with two 850 amps. £200. Tel: Ron 01522 510653 (Lincoln) (Oct(I))

WANTED: PIONEER F 93 tuner must be in excellent mint condition with original box and operating instructions manual. Tel: 07931 463823 (Oct(I))

BILL BEARD BB100 Mk2 50/ch integrated valve amp £500. BC MM-ophile pre-amp (transistor) £120. Tel: 023 8073 5894 (Southampton) (Oct)

PROAC STUDIO 100 speakers mint boxed (£750) £375. Cyrus FM7 tuner (£300) £175. Cyrus power amp £225 Cyrus PSX-R power supply £195. Tel: 01296 420792 evenings (Aylesbury) (Nov(I))

ROKSAN D.S.P. home cinema (pre-amp & AV 4 channel amplifier mint condition, toning sound with leads & boxes £300ono. Tel: 07808 066742 (Midlands) (Oct(I))

IXOS 10050 Iiotica ‘Aptimus’ interconnect 1mtr £170 (£300). Chord Odyssey 2 bi-wire cable terminated 4mm banana plugs 3.5mtr pair £175 (£300). Ruark Solus speakers (cherry) boxed immaculate £799 (£1250). Tel: 023 8087 2620 (Oct(I))

IMPULSE H2 mahogany vgc £1050 (£2250). Tel: 01495 243258 anytime (Oct(I))

CYRUS 3Q 24bit CD player lyr boxed manual £579 (£900). Quad 33, 303, boxed manuals £185. Tel: 0141 337 2744 (Oct(I))

TRICHORD DINO mint/boxed £195 (£299). Reson Reca MM w/new stylus £100 (£275). World Audio valve headphone amp £120 (£195). Thorens 150 MkIII £50. Dual 505-3 £50. Tel: 01769 580182 (phone & fax) (Oct(I))

ACCUPHASE DP85 CD player built in digital pre-amp £950. Bel Canto Evo200.2 digital poweramp £1500. Sugden Bijou Headmaster preamp and matching power amp £800. Lowther PP12A pair units perfect £500. Tel: 01293 824667 (Oct(I))


KRELL KAV300i amplifier boxed vgc £1350. Apogee Stage ribbon speakers ananthrace £700. Wadia X322 DAC boxed £700. Assorted MIT cables speaker and interconnect all above ono. Tel: 01276 502823 (Oct(I))

CYRUS ONE amp brand new unused £120. Rogers Compact monitor speakers excellent £70. Leak Stereo 70 transistor amp excellent £50. NAD 3140 amp like new £60. Must collect. Tel: 01372 476274 (Oct(I))

CARY AEI line pre-amp £495. Audicam, Bell/Don £650. Crimsoon 610 monoblocks £650. Audio Innovations 300 integrated £325. Kreil DSP new transport £1595. Magnum monoblocks £650. Tel: 01277 211685 Mobile: 07966 267404 Email: coom@binternet.com (Oct(I))

QUAD ESL 57 speakers pair £400. FM4 tuner £145. 34 pre-amp £145, 405 Mk2 amp £220. Good condition serviced by Quad, manuals boxed. Plus Teci tape deck £35. Could split. Tel: 01522 752692 (Oct(I))

PROAC RESPONSE 4 loudspeakers, rosewood finish, mint condition, boxed with instructions, bargain at £5500 ono (£12,000). Tel: 023 860 1222 (Southampton) (Oct(I))

ATC SCM 20 5l speakers, black ash, excellent condition £795. Linn Karik Numic CD/DAC combo, excellent condition £650. Proac 3 speakers, rosewood, unmarked £290. Tel: 01923 224 404 or Mobile 07930 524 246 or 020 8908 4633 (Office) (Oct(I))

REVOX A77 1/2 track, NAB adaptors, acrylic lid, handbook, workshop manual, 7x10inch tapes, £350 lot. Maxell XLI 10inch new tapes £10 each. Akai GX260D auto reverse. Handbook, £150. Tel: 07710 82 82 86 (Brighton) (Oct(I))

RUARK EXCALIBERS (Black Piano Lacquer) £3995.00 cost £9,000.00 six months old, can deliver. Tel: 01622 844 556 or 07793 899651 (Dec(I))

LEAK STEREO 20, Varislope 2 Stereo, Troughline 3 Stereo, Sandwich speakers, 3001 turntable, all serviced, £800 complete. Tannoy 3.1Z £400. Cartridge Man Digital Stylus Gauge £100. Bush MTT 1 £25. All £1000. Tel: Mr Robinson 01834 813 199 (Oct(I))

RESTEK EXTENT monobloc amplifiers, 260 wpc, 8 ohms. balanced/unbalanced, volume controls, large VU meters, mint, see - www.restek.co.uk RRP £6000, accept £1750 or exchange for quality valve amplifiers. Tel: 01604 584 630 or 07808 096 684 (Oct(I))

LINN LP12, Cirkus, Armageddon, Arlo, recently serviced, £1250 ono. Arcam CD23 £749 ono. Shack Wire silver interconnect, 1.5m £100. Tel: 0161 428 1539 (Oct)
SILVER - SILVER
Both LAT and AUDUSA Eupen mains cable available with silver plated (heavy duty plating 5-8 microns, anti tarnish finish to BSI standard and treated with Pro-Gold) MK Tough plug and IEC connectors. Upgrade to the silver plated versions LATInternational add £6, AUDUSA Eupen add £6. Connectors with silver plated pins/contacts available seperately - MK Tough Plug £8, O Heil IEC £7, M Kayser IEC, male IEC, side entry, bottom entry - £6 ea

AUDUSA EUPEN CSA 2.5 MAINS CABLE - HI FI CHOICE SEPT 2001 BEST BUY AWARD

AUDUSA-Eupen CSA 2.5

£48 for 1.0m
£58 for 1.5m
£68 for 2.0m
off the reel £60 for 1st meter, £20 per m thereafter. Fitted with IEC (Martin Kayser) and MK Tough Plug. Figure of eight, 16 amp IEC, Bulgin etc also available as well as USA, European Schuko, and other mains plugs. Cable can be supplied fitted to our all steel 4, 6 and 8 way distribution blocks. We can rewire the distribution blocks with Eupen cable as an extra cost option. Refer to our web site for details.

LAT INTERNATIONAL NJ USA - all cables now with SILVERFUSE conductors

LAT AC-2 HI-FI CHOICE - SEPT 2001 - RECOMMENDED MAINS CABLE

LAT AC-2 Power cable. We have developed a cabling (weaving) pattern along with an unusual shielding/filtering system that gets rid of the garbage that contaminates your components. The difference you hear with our cord is astounding. Our power cord takes advantage of the silver in its design through use of our proprietary Silverfuse conductors. The conductors are 10 gauge and insulated with Teflon; the best insulation available. Fitted as standard with an IEC and MK Toughplug. Other connectors are available incl Schuko, 16 amp IEC, Figure of eight, Australian, Danish plugs etc. 60cm £52, 90cm £75, 1.2m £88, 1.5m £101, 1.8m £112 etc Other lengths available. Off the reel at £45 per meter. Add £6 for heavy duty silver plated contacts on IEC and MK Toughplug. 4,6 and 8 way all steel mains distribution blocks fitted with UK, Schuko or USA type sockets. CE tested and approved mains distribution units manufactured out of heavy gauge steel, finished in black and fitted with high quality Wadsworth 13amp sockets. It has no filters, circuit breakers, surge protection, transformers, resistors, capacitors, LED's, on/off switches, chokes, regulators, just fitted with 3ft of LAT AC-2 mains cable. From £166 for 4 way, £198 for 6 way £229 for 8 way

LAT INTERNATIONAL - Analogue, Digital and Video interconnects and Speaker cable - better than most other at double the price. Refer to www.audusa.com for further details or ask for reviews etc. www.audusa.com for list for ex-dem cable, sub-woofers, power amplifiers, pre-amp processor, SIEA 3D LAB 24/196 CD players etc or ask for listing

SUNFIRE CORPORATION - Snohomish USA
New for 2002 Sunfire True Sub Woofer MKIV - 11 inch cube. Signature True Sub Woofer 13 inch cube and Junior Sub Woofer 9 inch cube - all with two drivers, to as low as 16Hz, 116 SPL and 360 cu ins of air movement, 1200 or 2700 watt patented amp technology. Classic Tube Pre-amp, Solid state power amps 2 channel (300 x 2 or 600 x 2) and 5 channel (220 x 5 or 430 x 5 - yes total of 2150 watts into 8 ohms or 4300 watts into 4 ohms) patented amp technology (no heat sinks) and Theatre Grand II processor pre-amp.
Please write or type your advertisement copy in block capitals with one word per box. Please continue on a separate sheet if necessary. WE WILL ACCEPT PHOTOCOPIES OF THIS FORM.

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Unico Remote (line) £750. (line + phono) £800

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* Opera SP2 (mahogany), £1350/pair.
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Zerius 202

*Zerius 202, £995/pair

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After almost two years of design, prototypes, testing and listening, the stunning new Logos integrated amplifier is finally here. For the lucky few who will own one, it has been worth the wait. Logos is an object of rare bellezza - a swan in a world of ugly ducklings. A future classic. And as a machine for playing your favourite music. Logos is simply delizioso. Look, listen, and you will know exactly what we mean.

*Pathos Acoustics Logos. 110 Watts/channel. £2495

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