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APRIL 2006

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Tannoy's stunning Yorkminster reviewed

# BIG TIME!

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PMC IBI TRANSMISSION LINE  
FOCAL 918 FLOORSTANDER

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**QINPU A-8000MK 2 INTEGRATED AMPLIFIER**  
**GOLDSTER AUDIO CONCERTINO IPOD SYSTEM**  
**LUXMAN L-505F MONSTER INTEGRATED AMPLIFIER**  
**LINN EXOTIK/CHAKRA C2200 PRE-POWER AMPLIFIER**  
**PRIMA LUNA PROLOGUE 3/4 TUBE PRE-POWER AMPLIFIER**



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# welcome

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By and large, nineteen seventies speakers were better seen but not heard. Sporting vast cabinets, umpteen assorted drive units and with all the efficiency of British Leyland cars on a Friday afternoon, they were hardly a high watermark in hi-fi design.

Not surprising, then, that eighties loudspeakers went the other way. Suddenly, less was more, and the cabinets became postage stamp sized. What once passed for a midrange driver was now the bass unit, and the only way of getting any decent low frequencies from them was by hooking up an amplifier as powerful as the National Grid.

The nineties saw eighties speakers growing up – literally. Front baffles remained narrow, but they grew legs and became floorstanders. That single, pint-sized mid/bass unit became two or even three pint sized mid/bass drivers, and suddenly a generation of audio aficionados thought they had bass back. But if only they'd remembered the seventies...

This month's issue is devoted to 'big bangers'; seventies-sized loudspeakers in a modern context. Noel Keywood is bowled over by Tannoy's huge Yorkminster and Westminster Royal Dual Concentrics, and felled again by the mighty transmission line PMC IBIs. Yours truly is thrilled by the massive Martin Logan Summit electro-static hybrids. And suddenly, we're realising that – whatever speaker marketing men may say – you can't squeeze a quart from a pint pot. If you want a truly big sound, get a big speaker.

Just to confuse things however, this month I was lucky enough to get the world scoop on the brand new (old) Acoustic Energy AE1 Classic mini-monitor. This is a totally faithful recreation of an eighties legend, and a brave move on AE's part. Stood next to the Martin Logan Summits (some ten times as high!), the AE1s had their work cut out. Well, bass wasn't exactly prodigious, but they reminded me just what was good about eighties baby boxes; they sang for all their little life's worth.

April's *Hi-Fi World* is something of an exploration into size, then. We've tried a range of loudspeakers great and small, and found some tasty amplification to partner them - from Linn's Exotic/Chakra solid-state pre-power to PrimaLuna's Prologue 3/4 valve combo.

Writing this issue has been gruelling, and we've got the back pains to prove it. So we hope you get the message, which is that – if you're lucky enough to have the space-then large loudspeakers are big time fun.

## David Price, Editor

### verdicts



**OUTSTANDING**  
**EXCELLENT**  
**GOOD**  
**MEDIOCRE**  
**POOR**  
**VALUE**

simply the best  
extremely capable  
worth auditioning  
unremarkable  
seriously flawed  
keenly priced



## testing

*Hi-Fi World* has its own advanced test laboratory and acoustically treated listening room, and a dedicated team of experienced listeners. We review thoroughly by extensive auditioning, rather than by quick-fire group listening tests. Our engineering team designs a wide range of products in-house. No other hi-fi magazine is so expert and dedicated.



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RETAILERS WELCOME

# natural beauty

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# news

## SUPER, SMASHING

Modern mid-fi Marantz silver disc spinners are of the two-channel variety; a bold and unusual choice in the UK market, we think, but to date they've proved highly impressive on ye olde 16bit CD too. The newest in the range are the SA7001 and its enhanced SA7001K1 sibling. The SA7001 incorporates engineering lessons learnt during the construction of the company's flagship £2,500 SA-11 and £1,100 SA-15 components, plus the same 24-bit/192kHz, CS4397 'Super DAC', from respected

also dampens vibration, and solid metal casework - which is available in black or silver - takes in a thick anodised aluminium front panel, extensive bracing and shock-absorbing feet.

The SA7001K1 is said to be the first Super Audio CD player



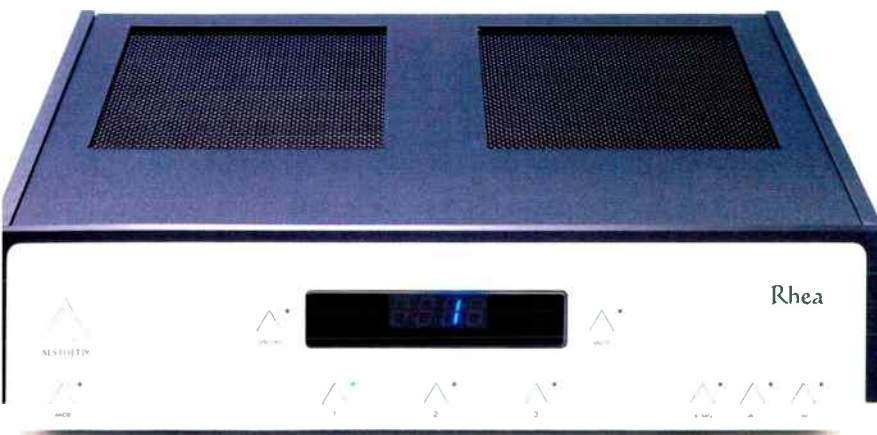
manufacturer Cirrus

Logic, as found in the Marantz SA-15. There's also a raft of customised components in the SA7001, despite its modest £430 price tag, including bespoke capacitors, Schottky diodes, and Marantz's Current Feedback HDAMs (High Definition Amplifier Modules).

All digital, analogue and control circuits are separated and shielded in their own enclosures to prevent crosstalk and other unwanted interference. Independent power supplies for each dedicated system block secure maximum separation, clarity and dynamics, and there's a copper-plated, zero impedance matching joint, which significantly improves signal to noise ratio, and an optional 'display off' function, which minimises high frequency noise interference. The transport's servo and decoder are mounted on a four-layer glass epoxy board for lower noise interference. The disc tray is finished with a coating that

to be fine-tuned by Ken

Ishiwata. Component embraces a special hand picked selection of enhanced components. The chassis has also been upgraded to a rigid, dual layer enforced design that virtually eliminates mechanical vibration. Moreover, the K1 version sees complete copper plating of the chassis and rear panel, significantly reducing signal-degrading electromagnetic radiation. Also offering extremely low electromagnetic radiation is a high-grade power supply centered on a toroidal transformer. This transformer has a much higher efficiency due to the very low impedance of the windings and has a fast, high current delivery capability for maximum separation, clarity and dynamics. For more information, click on [www.marantz.co.uk](http://www.marantz.co.uk).



## RHEA LIFE

Aesthetic designer Jim White has a new valve phono preamplifier for our delectation - the Rhea phonostage - along with the Calypso line stage and Janus preamp. The Rhea is a three input, high gain phono stage utilising 5 valves per channel. All gain is accomplished with valves with no solid state amplifying devices in the signal path whatsoever. Only the highest quality components are used in the Rhea, it is claimed, and all valves are tested, gain matched and then carefully selected for low noise and microphony. There are front panel controls for gain, loading, cartridge demagnetiser, input selection, mute, display brightness and standby. All functions can also be operated by the included remote control, which can also operate the other preamplifiers in the Saturn Series, the Calypso and Janus. Each input is fully disconnected from the audio circuit when not in use. Two pairs of Neutrik XLR and two pairs of gold plated RCA sockets are provided for audio output and three gold plated phono inputs. Size is 457x447x111mm, weight 17.5kg and price £2,995. For more information, call 01252 702705 or click on [www.audioreference.co.uk](http://www.audioreference.co.uk).



## HEAR TODAY!

NHT (Now Hear This) has a new 'Classic' range of loudspeakers out. Starting out is the petite (£345) Absolute Zero, said to be the newest and best NHT mini monitor ever, which combines NHT's new 5.25" woofer and 1" aluminium dome tweeter. The (£516.36) Classic Two is the Absolute Zero with deeper bass and higher power handling. Using a 6.5" woofer in a larger cabinet the Two produces room-filling sound with no loss of detail. The (£685.60) Three is said to be the best bookshelf speaker NHT have ever made; unusually, it's a three-way design featuring a newly developed 6.5" aluminium cone bass driver and NHT's aluminium dome midrange and tweeter array. The (£1,546) Four is an attractive and easily accommodated floor standing speaker that is basically the Three with the addition of a 10" side-firing subwoofer, and can be upgraded by bi-amping with NHT's X2 crossover and A1 amplifiers giving an active, fully adjustable bass. The Twelve's curved cabinet houses a massive 12" aluminium coned woofer [hurrah! – Fd.] and efficient 250 watt class G amplifier making it capable of filling the largest of rooms with deep powerful and clean bass. The Ten is a scaled-down Twelve with a 150W amplifier and 10" aluminium cone woofer. For more details, call 0151 236 1832.

## IN TUNE

Designed to match Denon's latest Advanced Evolution hi-fi range, the new £129.90 TU-1500AE replaces the classic TU-260II tuner, adding better sound, greater sensitivity, a better display, full remote control and sleeker styling, all for the same low price. Unlike most cheap tuners, the TU-1500AE is well built,

elegantly styled and uses highly refined FM circuitry to extract the best sound from FM broadcasts, says Denon. The company's tuner engineering team are said to have spent considerable time testing and refining both the FM/AM circuitry and the usability. The FM tuner is claimed to be very sensitive, with excellent sound. A two line display shows all RDS info with 100 memory presets available for AM/FM stations. The bundled remote control has all the main functions including direct preset access, tuning and memory functions. Vital statistics are 434x74x286mm and 3.6kgs. For more information, click on [www.denon.co.uk](http://www.denon.co.uk).



## FLAT EARTH

In the opinion of this magazine at least, one of hi-fi's greatest unsung bargains is the TDK S-80 2.1 multimedia loudspeaker system (pictured). A state of the art, in-house NXT design, it offers stunning sound (the equal or better of many £600 hi-fi loudspeaker systems) for around £60. Now, it has been updated; the new SP-XA80 Flat Panel 2.1ch multimedia speaker system is another great showcase for NXT technology. The compact size of the system makes it a space saving solution ideal for the demands of modern living. The subwoofer can be orientated horizontally or vertically and is small enough to hide whilst being smart enough to show. Easy to set up and simple to operate, a remote control and sensor adds to the convenience and flexibility of use. Other features include stereo min jack and two RCA inputs, and remote control of volume, balance and input. It's on sale in Japan from 10th of February, but we hope and expect it to reach Europe soon.

## MAGNA-IFICENT!

Singapore's new £1,800 Magna Acustica loudspeakers boast a full range 10" drive unit with a claimed 50-19,000Hz range from the resin coated paper cone with paper surround. MA's horn enclosures are hollow to create a baffle effect without the disadvantages of open baffle designs (room placement, size, lack of deep bass). In the future the customer can choose to open or close the top port, to run as either semi open baffle or infinite baffle, depending on taste and room parameters. Each speaker comprises two full range drive units, one front, one rear driver to create an open and realistic soundstage. Size is 1200x400x350mm, but a smaller version is expected soon. "We are proud to say that this is a fast, high efficiency speaker with a smooth sound and clean bass extension combined with an open and realistic soundstage" said Lothar Sander, designer and manufacturer of the Magna Acustica speaker. The MA speaker is available for demonstrate in Walrus Systems in London (tel: +44 (0)20 7724 7224, [www.walrus.co.uk](http://www.walrus.co.uk)). For general information about MA speakers, click on [www.magna-acustica-loudspeaker.com](http://www.magna-acustica-loudspeaker.com).



## HEAD START!

Goldring, who began manufacturing audio products in 1906, is very pleased to announce the release of a new range of high performance headphones. These are the first of a number of new Goldring products to be released this year to mark Goldring's centenary.

The company's last headphones were the Goldring-Lenco K105 model in the early 1970s, but the new range is considerably more advanced! All dynamic open back designs, the new cans all benefit from circum-aural ear cushions for maximum comfort, and boast a 3m detachable signal lead, which is 99.999% Pure Oxygen Free Copper on the DR50 and DR100 models, and silver plated 99.999% POFC on the DR150. Consistent throughout the range are 40mm drivers with neodymium magnets. On the DR50 and DR100, these are fitted with Mylar diaphragms, the latter incorporating superior damping and porting. The DR150 benefits from a titanium film diaphragm, which provides faster transients and a wider dynamic range. The impedance for all models is 32 ohms. Goldring says there are very distinct sonic improvements as you progress up the range, with each model delivering a more detailed, open, and dynamic sound with lower distortion than the next model down. Retail prices are £29.95, £39.95 and £69.95 for the DR50, 100 and 150 respectively. For more information, click on [www.goldring.co.uk](http://www.goldring.co.uk).



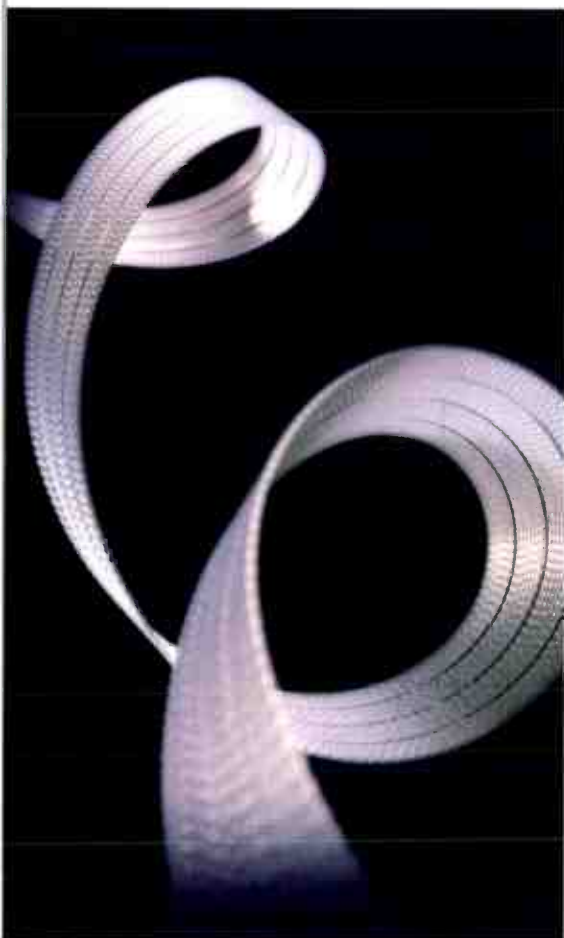
## SPOTTED

Could it be that famed hi-fi public relations supremo Henry Griffiths, renowned ex-What Hi-Fi staffer and ex-Cambridge Audio 'bon viveur', has undergone something of a career change...?



## FREY NOW!

Nordost's new Frey interconnect uses six "Micro Mono-Filament" conductors, each of which is made of solid oxygen-free copper with an extruded and highly polished silver surface. Each of these is then helically wrapped in an FEP "Micro Mono Filament" thread and has an FEP tube extruded around it to reduce insulation contact by more than 80% and provide mechanical stability. This design means that signals are transferred more efficiently and at extremely high speeds. As standard FREY interconnect cable is terminated with high quality WBT NextGen gold plated copper connectors, which provide the perfect low mass connection between the cables and the equipment. Frey is also available with balanced XLR as well as 5 pin DIN terminations. Frey tonearm cable is dual shielded with dedicated drain wires for grounding and uses six Nordost Mono-Filament conductors for superb musical fidelity. The cable is terminated a high-grade 90 degree mini din tone arm connector and either Neutrik professional grade RCA or XLR connectors. Frey loudspeaker cable consists of 28 solid OFC conductors with an extruded and highly polished silver surface. Nordost's state of the art Micro Mono Filament technology reduces insulation contact by more than 80% allowing information to travel along the surface of the conductor virtually unimpeded by the insulation material. The extremely low effective dielectric constant of 1.12 allows musical signals to be transferred efficiently. Retail prices range from £1,509.55 for a 2m terminated pair of the loudspeaker cable to £489.95 for 0.6m of Frey interconnect cable, to £349.95 for a 1.25m tonearm cable. For details, contact Activ Distribution on 01635 291357.



# Big Time

Noel Keywood reviews one of Tannoy's finest ever loudspeakers, the Yorkminster...



**T**ake a deep breath, pick up the telephone and say "Hello Tannoy, please can I review your lovely Yorkminsters?". They said "yes!". Oh Lord. We were now committed to reviewing one of the world's largest domestic loudspeakers, with all that entails. Not for nothing do Tannoy use those fetchingly trad names for the unarguably large, immovable parts of British history. Now we were faced with moving the immovable...

Why bother? A lot of readers well remember the awesome

potential of a good big 'un and wistfully imagine what it might be like to own one or - worse - two! That includes us. Big loudspeakers properly engineered give a sound that is unmatched. In the UK only Tannoy continue to develop loudspeakers like this. Like its namesake, this Yorkminster is in touch with today as well as yesterday; under the traditional exterior lies a panoply of modern technology. Tannoy have taken the best of the past and added all we know today, to come up with a loudspeaker that is both unique and very special, as well as true high

fidelity. Yorkminsters also cost £9,000 per pair and weigh 68kgs apiece packed, or in old measure, 150lbs. Out of their packing they come in at 61.5kgs and with heavy front baffles removed around 58kgs at a guess.

Before lifting the telephone I had done some vital homework. Measuring 620mm wide and 447mm deep Yorkminsters don't consume impossible amounts of floor space, I reasoned. We could accommodate them with ease, my foray with a tape measure indicated. At 1080mm tall they weren't even so much taller than your average floorstander either,

which comes in at around 1 metre. All the same, in the flesh people do react to a loudspeaker this size - in the way they might if you had an elephant parked in your lounge. You won't get away with arguments like "you'll get used to them dear, honest!". Yet at the same time I shoehorned them into my own 16ft x 14ft lounge and ended up with a surprisingly harmonious fit, with more floor space available because of the positioning I used, and a smooth visual transition between polished wood floor and the teak finish of the cabinets. The Tygan grill cloth is a 1960s hangover I can do without, but the front grille panel comes off, taking a large expanse of Tygan with it. Underneath lies a broad veneered front baffle with its single Dual Concentric drive unit and a brass adjustment panel that, if unlikely to be an award winner in Home & Garden, is going to look good to anyone impressed by a big banger.

Tannoy have always said that the Prestige range, as they call it, sells best in Japan, and the Japanese value authenticity as well as performance, hence the Tygan. What I didn't know, when picking up the phone, was that they are expanding this range and preparing literature aimed at the UK market, which is barely served. Only one dealer in Britain stocks Prestige loudspeakers, Heatherdale of Worthing, Sussex, meaning northern France is closer than northern Britain - and if Heatherdale turn the volume up they could probably sell half a dozen pairs there without further demonstration. For the time being, Brits must travel to listen.

Whilst Westminster and Yorkminsters border on immovable, they are the largest models within the Prestige range. Below them lie more manageable constructions fitted out with Tannoy's unique, if under appreciated Dual Concentric drive unit. And I can't help feeling there is a market for these in the UK. In spite of appearance they fit better into a spacious modern home than a surround sound system and, technologically, are easier to live with. Once positioned, Yorkminsters will work from any amplifier [see DRIVING YORKMINSTER], bringing the Royal Albert Hall into your home with a few watts or so. So they don't bring a host of problems with them; quite the reverse, they actually make hi-fi life very easy in many ways. That's the broad picture at least. There are no devils in the detail, but there is detail to consider when contemplating life with a Yorkminster, I found. But let me describe this loudspeaker in a little more detail before explaining its

## YORKMINSTER - MOVING THE IMMOVABLE



Moving a loudspeaker like a Yorkminster takes some planning - and the plan formed when I spotted a Taxi Van unloading on the street. Inside was its driver, a man who would be banned from The World's Strongest Man Contest on the basis that it would be unfair to other contestants if he applied. "I need to move two large boxes one mile and up two flights of stairs - and they weigh 68kgs each. Can you handle it?" He just granted. Problem solved, I thought.

Two days later the Taxi Van had driven past our large office building three times and still its driver couldn't find us. It was a bad start. "Its long and low, about the size of an ocean liner," I shouted down the mobile to him in exasperation, "you can't miss it". How wrong can you be. By jumping up and down in the middle of a busy London street, waving my arms around frantically, Luigi was eventually shepherd in from orbit. Climbing from the van I realised that my well laid plan was about to go wrong. This wasn't the man with a van that I had spoken to, but a mouse with a van. His mother had definitely fed him the wrong brand of cornflakes. No matter how much I tried to suggest to Luigi, without offending him, that he'd be better off ferrying around helium-filled balloons, he seemed determined to see this job through. As the Health and Safety Executive suggest around 25kgs is a maximum safe lift for one man and we could muster three, I reckoned we had some leeway and it was worth trying.

A loudspeaker as large as this is manageable if you plan in advance and are suitably equipped. The parcel van down from Tannoy was not, it had no power tail lift and each boxed Yorkminster threatened to flatten three of us as we tried to ease it off the lorry to the ground. Luigi's van came with power tail lift and this made all the difference. One man can handle a carton this size and weight with a strong sack truck, so I left Luigi to take the strain whilst I 'directed proceedings' and made sure he didn't slip and get flattened. It took three of us to push and shove each carton up two flights of stairs, but again the sack truck took most of the strain, and you can get stair climbers for this sort of work. In the end Paolo earned his £40 fee; all the same I hope he invests some of the £5 tip I gave him in some spinach.

Unpacking a Yorkminster is a two man operation, although one could just manage it. To move the loudspeakers in my home when unpacked I used a lightweight, collapsible sack truck of the sort you can buy at Homebase or B&Q for around £35. It was no problem at all.

So a big banger this size isn't an impossible domestic proposition with a little advance planning, a sack truck and some help when you need it.

foibles and how best to tackle them.

Conceptually, the Yorkminster is fairly straightforward. It uses a 12in bass unit in 200 litre bass reflex enclosure. The rear panel is home to two giant ports. The cabinet is cross braced and damped for rigidity, as large cabinets are notorious for introducing woody sounding box colouration, often heard to tinge male vocals. In a 28ft long office I sat

behind the Yorkminsters for a few weeks and heard noticeably less from the ports in terms of box whoomph and colouration than with smaller cabinets. They were surprisingly uncoloured here, which was encouraging because box problems are most audible from the ports. But a huge reflex enclosure like this works an octave or so lower than usual, down to 23Hz (-6dB) Tannoy

*A van with a tail lift proved essential for moving Yorkminsters. A strong sack truck was also necessary - and it helps if you can get some muscular help.*

say, making low frequency blemishes that may exist less audible. Using teak veneered 12 ply Birch plywood, the cabinets are rigid and sturdy. Rap them with your knuckles and they sound dead; move them on a sack truck - as I did - and they flex not one iota.

As you have every right to expect at the price, finish is superb. Whilst the veneering looks fairly standard, Tannoy put a lot of effort into ensuring this is a true audiophile loudspeaker. The crossover uses only the best components and is hard wired internally with Van den Hul cable. Massive connection terminals are used, which allow bi-wiring and there is an earth terminal which grounds the drive unit chassis. I used the Yorkminsters with Van den Hul loudspeaker cable and earthing.

The 12in bass unit is fed by a 2nd order low pass section, and the central horn is fed from a 2nd order high pass for good phase matching. The horn works from 1.1kHz

this size up to 1.1kHz without colouration, or coarseness from breakup at high volume, problems I was on the watch for.

The front panel adjustment unit alters the output level of this horn, or 'energy' as Tannoy put it, so it can be made louder or softer. Its high frequency response can also be adjusted, to roll up - sound brighter - or roll down - sound softer. There is an intermediate or reference flat position. I found it very useful. I set high frequency response first, preferring -2dB when listening close, within 10ft. Out at 16ft the zero position was acceptable to my ears. There is a +2dB boost, conceivably useful listening at a distance in a really big room. The -4dB and -6dB settings are obviously soft to dull.

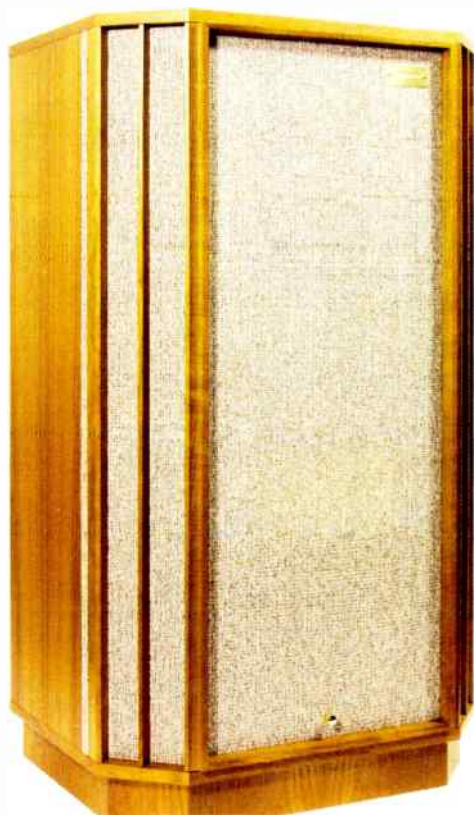
After setting high frequency roll off I found I preferred a little midrange boost in the horn, by increasing energy to +1.5, improving midband vocal articulation and projection.



**Two large rear ports signify this is a reflex cabinet. Tannoy fit a large bi-wire terminal set, able to accept very heavy cables and 4mm banana plugs. There is a terminal for an earth wire too.**

"few loudspeakers can match the Yorkminsters. They exist in a world of their own."

upward, a relatively low crossover frequency - but then it isn't easy to get a treated paper bass cone



**The Tygan grille is attached to a thick and heavy removable baffle that must be removed if the speaker's imaging is to be appreciated.**

Tannoy's Dual Concentric drive unit places a compression horn handling high frequencies within a bass unit, in order to ensure the listener receives a hemispherical wavefront from a notional 'point source'. In theory this gives focussed, dense sounding (embodied) stereo images, and good image stability as you move around the room. And the Yorkminsters achieve this feat with more than a little ability. Their stereo staging is impressively solid and well defined at ordinary levels, or as volume goes up - frightening. The horn plays a part in this I suspect, as there are some qualities not common in other loudspeakers.

As expected the Yorkminsters give a cohesive sound stage (grille off) whether you stand and walk around the room, or sit in front. Seating height makes little difference. However, I did notice that when toed in to point at me, as I stood up there was a slight change in image intensity and - like KEF's coaxial Q Series loudspeakers - the Tannoy drivers sound best off-axis. Tannoy suggest 15 degrees off axis and suggest they are toed in so the loudspeaker's axis intersects "at a point slightly in front of the listening position". This is quite heavy toe in which, with such a large cabinet, looked visually extreme to me. I got an even image,

from standing to sitting positions - and a very firm one - with the loudspeakers facing straight ahead. They fire more energy at side walls like this, but in both rooms I ran them, there was plenty of side wall absorption to cope. This was best with the speakers 15ft distant, as they were in my lounge. Then they set up a solid sound stage with intense central images when no less than 7ft apart, either side of a chimney breast, which works out as 13degrees off axis.

In all my efforts at working with these monsters in two rooms I became aware of certain properties that set them apart from the herd, but then that's much as you'd expect from their dimensions. Let's get straight to the biggest difference: bass performance. It isn't that you get bigger bass than a good, conventional floorstander; it's the quality of it that is so striking. In the large room, 28ft square, they delivered a dry punch that literally hit my stomach and physically shook the sofa. As well as hearing bass I felt pressure waves and their sense of grip and control was amazing, quite beyond the norm. The sense of physical power comes from their easy delivery of very low bass, below 40Hz. In this room they were driving down to 25Hz or so, but in a way that caused kettle drums to pulse the air and bass guitar to stride up and down the scale with

a casual ease that eludes a normal loudspeaker. For the first time for a long, long time I became aware that drums took up a distinct position on the sound stage; the Yorkminsters show that even bass seemingly comes from a point in space, rather than being felt as an amorphous rumble, such as you get from subwoofers for example. Along with drums endowed with extraordinary power and razor sharp positioning on the sound stage came a fascinating sense of control that caused low frequency events to stop as fast and completely as they had started. Take Steve Earle's 'Copperhead Road', an old favourite of mine for judging bass balance and cabinet behavior. The first drum strike is suddenly gated off as it decays, an effect the Yorkminsters portrayed clearly, where others loudspeakers had simply rumbled on. The reason for this is, I suspect, that most loudspeakers roll off at 40Hz or so and are resonant in this region; this is how they develop strong bass, but it is relatively uncontrolled bass, this being the nature of a resonant system.

The Yorkminsters reach down to a much lower limit, so in this vital region they are not resonant, meaning they possess far greater control. This control is also imposed back on the air load, the two being more tightly linked through big cones, which are a better acoustic impedance match. So the subjective impression of enormous power and control isn't illusory, nor is it a magic that can be conjured up by a smaller loudspeaker, no matter how cleverly devised. This is what you get from a good big'un and only from such a loudspeaker. There is no substitute for size; smaller boxes manage a passable impression, but no more. They just don't have the same physics.

However, one surprise was that bass isn't always "larger". With 'Copperhead Road' those opening drum strikes were tighter and better elaborated so I could hear into the nature of the original performance and recording, but they were not bigger than I have heard them. Also, they clearly rolled across the sound stage, right to left, an effect I hadn't readily appreciated before. Ah, stereophonic bass - a wonderful thing! But then I have never used loudspeakers this large in my lounge. The reason is simple: it took three men, one pulling and two pushing an industrial duty sack truck to get them up two flights of stairs. You need the right sort of home before considering Yorkminsters! And without the right home you'll reach

## DRIVING YORKMINSTER



It might be the size of a cathedral, but fortunately Tannoy's Yorkminster doesn't need the power it takes to move one. For once the laws of physics are on our side, as the bigger a loudspeaker drive unit gets the more efficient it becomes in turning electrical power into acoustic output. In most homes you need no more than 20W or so to get vast output from this loudspeaker, potentially opening up massive choice. There are subtleties to be aware of here though.

Think of this loudspeaker as a magnifying glass held up to the amplifier, as it works with the first watt or two of output, and with solid state amps these are the noisiest and, at high frequencies, often the most distorted. So high power solid-staters, especially those with sensitive inputs, are not ideal. The Tannoys ruthlessly reveal solid-state hardness, flatness of imaging and the constrained sound stage and sense of dynamic that results from high levels of negative feedback. So choice of conventional amplifier needs to be made with care, after audition, and preferably after hearing what a good valve amplifier can do, because you will barely believe the differences on a 'speaker such as the Yorkminster. Both Tannoy and Dave at Heatherdale, who demos Westminsters, agree with this view. As a yardstick of goodness, Quad's II-forty power amplifier and matching preamp is as good as it gets and seems ideal in every respect. Sweet, smooth, clear as a bell, yet quite tight in the bass region and with lovely dynamism, this is a partnership made in heaven.

All the same, valve amps come in great variety nowadays and those from Audionote suggest themselves as eminently suitable for driving a loudspeaker such as this. A silky smooth midrange, sweet, sonorous treble and capacious imaging are all strengths of the breed that suit Yorkminsters down to the ground. As the Yorkminster is a near perfect 8ohm load, use the 8ohm tap of a valve amp, although the 4ohm tap should also provide good results, as a load higher than intended is more acceptable than vice-versa.

I used both the Quad and my own World Audio Design 300B push-pull, with feedback switched on. It needed this to pull the Tannoys into line a little at low frequencies, improve the midrange dynamic and sense of speed, at a small cost to image size and freedom of the sound stage to spread out into the room. The Tannoys project strongly in any case, a feature of horns (mid-range horn in this case), so there was little loss overall.

Happily, although the loudspeaker is large the amplifier needed to drive it does not have to be. The issue isn't one of power with this loudspeaker, so much as quality. I'm not saying solid-state amplifiers won't work, but if ever there was a loudspeaker that's ruthlessly revealing of amplifiers, this is it.

the wrong conclusions I was to find.

I was hoping the Yorkminsters would reward all this effort with a similar performance in my 16ft lounge, but they didn't. I was disappointed to find they actually sounded bass light when placed in the normal position reserved for floor standers - it was difficult to believe in view of their size. The reason is that Yorkminsters have no

artificial bass lift to add warmth and body, and to give just that little bit of boost to bass that also provides a bit of bounce, some call it dynamism. These are accurate loudspeakers, a reflection of their studio monitor pedigree. In my case there were two solutions. To get enough energy into the room's lowest resonant mode I would have to push them back against the far wall; the other was

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that a tall bookcase full of LPs in a corner behind was over-damping the room. This suspicion had grown from the behaviour of other loudspeakers.

Moving the Yorkminsters back to either side of a 6ft wide chimney breast freed up floor space and restored bass balance. Ironic then that in spite of their size they were a better fit than smaller loudspeakers. In this position there was no boom as expected, likely due to the 'speaker's control of the room. Moving the bookcase forward out of the corner a few feet added a little bass strength, but softened it a tad too. But this is a room effect. The midrange horns firing through shallow bass cones display enormous projection and with the baffles ahead of the chimney breast imaging was unaffected by this position, even though Tannoy suggest otherwise. The Yorkminsters projected a wide and densely populated sound stage, delightfully obvious with the New Year's Day concert on BBC2 by the Vienna Philharmonic, playing Strauss' Quick Waltz, followed by Blue Danube. Timpani thundered cleanly in front of me, the brass section rasped and strings were vivid and well laid out section by section. The line of double basses could be heard underpinning the orchestra, adding some weight to the performance. It was like having a front seat in the audience. And that was my first impression of Yorkminsters: imagine sitting in the front row of the Royal Albert Hall, or Austria's Musikverein if it comes to that, and you get the gist of the experience.

A loudspeaker this big needs a large room to release its full potential. A minimum of 18ft is needed I'd suggest in excess of 20ft is ideal if you want to feel the real bass power of a loudspeaker as large as the Yorkminster. All the same they still exhibited wonderfully tight and controlled bass in my room, with an easy dynamic that was wholly convincing. Their acoustic control imposed a dryness to the sound of an orchestra, for example, until bassoons and kettle drum set about their business, when the room suddenly became alive at low frequencies. When the instruments stopped, so did the bass, unlike conventional sized loudspeakers. This gave a whole different feel to the presentation, a strong sense of contrast imposing sudden and alarming changes. I was learning that Yorkminsters do things differently - and there was more to come.

Fascinated at what the Yorkminsters were doing, I couldn't help but try and put some figures

on my subjective experience. So I trundled in a spectrum analyser and Bruel & Kjaer SPL meter with measuring microphone to make some measurements. In view of the fact that they seemed relatively docile in my home compared with their frightening delivery in our larger office, I was amazed at the figures that came up on meter and screen.

On the matter of amplifier power, a managed to record 4V peaks one Christmas evening, a time when all my neighbours are away - that's 2W! I was playing the delightful Insane Clown Posse's 'Murder Rap', from their Wraith DVD-A disc. From just 2W a low frequency effect that underpins this track shook the room at 30Hz, peaking at 99dB. That's a frequency lower than the lowest bass strings, one you both hear and feel in roughly equal proportion - and at 99dB my room was shaking. I checked the Yorkminster's cones and I could barely detect movement; I'd guess they were actually moving 1-2mm or thereabouts. My measurements confirmed the Yorkminsters manage an unfeasible performance compared to what we are used to. They play music at frightening power and scale from one watt or so; any more is deafening.

Much of the projection displayed by this loudspeaker comes from the horn nestling in the centre of the big bass cone. Horns aren't common in high fidelity, but they are in Public Address, or PA, and in professional music systems, where their ability to project strong midrange and treble energy over a defined area is valued. Tannoy's horn does a lot of work in this loudspeaker, contributing strongly to the Yorkminsters character. It was responsible for piercingly intense stabs from synthesiser in Billy Idol's 'Don't Need a Gun', making me aware that I don't usually sit in front of horns and should watch out! The sense of midrange intensity and projective power this horn possesses was always impressive: 'Goodbye My Lover' put James Blunt solid and clear in front of me, in full body and voice, every fine intonation and vocal push within his lilting vocal style made very obvious by the Yorkminster's horn. Piano was sparse, dry and yet convincingly strong, always with that great sense of control these 'speakers impose.

The only reservation I could have about this unique and wonderful loudspeaker is the horn though. Initially, sitting 10ft distant, I heard its unforgiving and slightly brutal nature, as well as a hard tonality. Further away, out at 15ft, this is less apparent as the perturbations in response we

measured tend to smooth out. The horn is also relentlessly revealing, so it helps to use an amplifier that is in itself smooth sounding and free from hardness or grain. Had this horn been too hard I couldn't have enjoyed Nigel Kennedy's strenuous bow work in Vivaldi's 'Four Seasons' as much as I did; the Yorkminsters handle intense classical performances with gusto. The same gusto and intensity translates into Rock just



*Tucked in either side of a chimney breast, the Yorkminster intrudes little into a room!*

as successfully, the rhythmic chordal sequences of the electronic piano from Scissor Sister's 'Laura' holding me captive, with little change as the CD fell into 'Take Your Mama' - great performances from a band that remind me of the New York Dolls, fronted by singer that sounds eerily like Lou Reed at times. Yorkminsters rolled out big performances with the verve and energy that they demand. These loudspeakers bring an intensity to music in which the almost invisible midrange horn has plays a very conspicuous part.

Studio monitors must be accurate as well as revealing and our measurements clearly show that although the Yorkminster is meant to be a domestic loudspeaker, Tannoy have made little concession to this role. What I enjoyed was their levity, coupled with tremendous dynamics. I know from experience when designing loudspeakers that

# Walrus



11 New Quebec St, London W1

Have we got turntables? Do bears... no, forget that. Of course we have!



We don't have a problem with turntables at all (some shops seem to have - how much choice do you see in your local hi-fi store, that is if they even sell proper hi-fi any more). This venerable way to reproduce music in your home still happens to offer the most realistic sound quality of anything available today. You can spend a fortune on the latest digital components to still only get a fraction of what even a relatively modest cost vinyl front end has to offer. You probably already have the "software" for it tucked away in a corner somewhere, assuming you're not a vinyl user already. And, the best thing is, it's not going to become obsolete - you won't have to worry like the digital aficionados do about the next miracle format and having to repurchase everything again! Provided you look after them, those vinyl discs contain an almost unlimited amount of information, and as you gradually upgrade your front end, you get to hear ever more of it.

Our advice on turntable/arm/cartridge matching is second to none (provided, obviously, you purchase from us!) and our subsequent building of your turntable will ensure you get the full performance from it (we see quite a few turntables purchased elsewhere or second-hand which aren't working properly). We also don't forget about you after you walk out the door, it remains important to us to keep your deck working to your satisfaction over the years. Just thought we'd remind you that vinyl playing is still our priority!

## However...

Even we have to face the fact that more and more of (to us) people tell us they visit us for digital for analogue. Er, yes. So, we have to be very making some absolutely superb digital products example. Consonance also make some wonder- (pictured) is the latest wonder from this company, also a complete departure for this price range (the upsampling DAC and a valve output stage, all in a



you want decent digital disc spinners, and ironically players specifically because of our enthusiasm careful what we choose. The Chinese have been lately, you've all seen the success of Shanling, for ful products, and the Consonance Droplet 5.0 Not only does it sound excellent, the styling is Droplet costs £1995). You get a 24 bit / 192k unit which weighs just under an astonishing 30 Kg.

But it's not only the Chinese who're making digital waves, as it were. Our own home-grown favourite, Musical Fidelity, have come out with an astonishing two box player, a new model in their acclaimed KW series, the DM 25 transport and DAC. The digital and analogue sections are both effectively "dual mono", and although you can buy the units separately, there are very few other makes you can use them with because they connect using the esoteric dual



mono twin cable system, a method only one or two far more expensive units use. The outcome is sound quality well ahead of what you might expect of the price tag - both units together cost £3995. And, in case you were wondering, those things sticking out the top of the transport are levelling adjusters for the unique isolating feet, nothing more sinister!

And, just a little reminder about the superb Stirling Broadcast LS 3/5a loudspeakers. Now, we know these are about as unfashionable as it gets. Modern speakers are supposed to be big, bold, full of high-tech drivers, and with a multi hundred watt power handling tag. And indeed, most modern designs are just fine for purely electronic music, where tonal accuracy, subtlety, and even soundstaging take second place to sheer grunt. For acoustic music and spoken voice, though, these BBC designed mini monitors are absolutely unparalleled.

Even when you hear them playing full orchestral music, or even rock, they are very special. Instruments sound as they were meant to, voices are utterly natural. These are a must hear design if you are a "serious" listener.



Finally, we now have the fantastic Hyperion HPS-938 loudspeakers on demo - sorry, no room for a piccie - book now for a listen.

air tangent amazon amplifon apollo furniture argento audible illusions audio aero audio physic black rhodium breuer dynamic brinkmann cartridge man cawsey clearaudio consonance decca london duevel dynavector ear yoshino final lab goldring graham (tonearms) graham slee hadcock heart heed audio hyperion (loudspeakers) incognito isolda jadis kr electronics klimo koetsu lavardin lyra magneplanar mcintosh michell engineering morch musical fidelity nordost nottingham analogue opus 3 origin live ortofon pro-ject rega (turntables) revolver ringmat roksan shunmook shanling shelter sme something solid sonneteer spendor stax stirling broadcast sugden sumiko tannoy tci cables tom evans townshend audio transfiguration trichord trigon van den hul voodoo wireworld xlo

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it's best to 'tiddle' output from a small box with a bit of bass lift to add body to the sound, as well as a sense of bass dynamic - and that's how most loudspeakers are today. It isn't impossible to design and make a 'flat', totally accurate loudspeaker, but it doesn't sound right in the average home.

The Yorkminster is flat - and it does work, subjectively as well as objectively. It delivers an unusually dry, tight sound that is supremely fast and controlled from the high treble down to lowest bass. Sometimes this turns up some interesting features. 'Full range' CDs I often turn to for stressing loudspeakers under test - like Steve Earle's 'Guitar Town' - sounded a little contrived through the Yorkminsters, as if the studio engineer had tweaked things up a bit to make it sound that way (which he probably had!). However, DVD-As suddenly sounded as full range as they are meant to be, 'Guitar Town' sounding dated and contrived against 'Riding With The King', from B.B. King, with the able assistance of Eric Clapton. Needless to say, with these two together another big performance is on the cards and the Yorkminsters delivered it, with steel guitar strings resonating sharply against a clean, clear background, cutting through my room as if newly fettled by Wilkinson Sword. Both Clapton and King sang with the easy confidence of a couple of pros in the studio - but in this case the studio was my room. The Yorkminsters were acting more like a studio monitor here than a grand cabinet fit for an English country home, as Tannoy's latest literature portrays them. This is where reality parts from the picture, to paraphrase Noel Coward; to most people Yorkminsters look like an anachronism, when in truth they are a modern loudspeaker more capable than most.

Whilst the horn isn't the

smoothest - literally - drive unit available to us today, it still has unique strengths that act as a balance. Take dynamic range again: whilst

the opening sequence of 'O Fortuna', from Orff's *Carmina Burana*, thundered through my room convincingly, it was the way following hushed choral sequences were so well conveyed, with clear enunciation of lyric, that was a delight. Sensitive loudspeakers are known for this ability to work at low levels as well as high ones and here the Yorkminsters are supreme, the horn taking much credit. Happily, it's a talent that suits Rock as much as Classical, bringing life and dynamism to both.

Few loudspeakers can match the Yorkminsters. They exist in a world of their own. Nowadays, manufacturers cannot, or are not prepared to make loudspeakers like this, so their talents these days are little appreciated. Hardly surprising, you might say, when they can't be heard. True, Tannoy do need to make sure Brits can get to listen to this loudspeaker, or those below it. Size acts against big Tannoys here, as much as it acts in favour when it comes to sound quality. There are significant practical difficulties in holding such large loudspeakers on demo. That is why I went out of my way to see how they performed

in medium and large rooms and found that whilst the Yorkminster is wonderful in a medium sized room like my own lounge it is a frightening experience in a large room - and quite unmatched. No doubt that £9,000 is a lot of money for a loudspeaker but this one is built for lifetime, to be treated as a family heirloom rather than a disposable piece of CE junk.

For those with large homes and matching incomes it's a wonderful choice of loudspeaker. There's little that can match a good, big loudspeaker - and this is one of the best. I'm glad Tannoy said "yes" after I picked up the telephone because the Yorkminster was one of the most accomplished loudspeakers I have heard for a long time - and it stands amongst the great loudspeakers of today.

#### VERDICT

A vast sound, strongly projected. Clean, tight and dynamic, with endless bass. One of the best.

#### YORKMINSTER £9000

Tannoy Ltd

+44 (0)1236 420199

www.tannoy.com

#### FOR

- Solid imaging
- Clean and fast
- Deep and tight bass

#### AGAINST

- Midrange coarseness
- Size and appearance

## MEASURED PERFORMANCE

Our frequency response analysis shows quite clearly the big 12in treated paper cone bass unit runs very smoothly from 40Hz up to 1kHz, within 2dB or so variation but absolutely no tilt around nominal 0dB, so it is totally flat. This is quite unusual and shows clearly that it's a highly effective drive unit in itself, with little colouration. Tannoy quote a -6dB lower limit of 23Hz and our measurement comes close enough, recording 25Hz at -8dB from the forward response. The port peaks narrowly at 27Hz and there is no cabinet colouration from the port, which is rare.

In a room the ports, aided by room gain, kept the Yorkminster operating down to a low 20Hz, where it was only -3dB down. The -6dB point was 12Hz. Putting all this together shows the Yorkminster really does control and drive the air load of a room very effectively to produce deep bass of high quality, with little of the peaking and boominess normally heard.

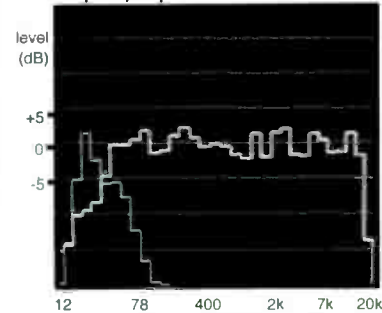
The cut-in point of the horn is quite obvious at 1kHz, as it exhibits regular +/-2dB variation about the horizontal axis all the way up to 16kHz, rolling down sharply above this frequency. Closer analysis showed the usual variable response of a symmetric horn, with notable peaks at 2kHz and 5kHz. Moving off axis smooths the response considerably, with some upper treble roll down as a trade off, and this is why Tannoy recommend an off axis listening position. All the same, this isn't a ruler flat ribbon tweeter by any means and it does have some perceivable raggedness and hardness of sound in use, due to

these effects.

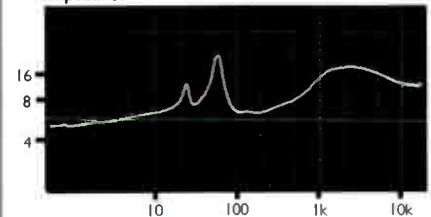
With the horn unit presenting a resistive load of 10ohms or so and the bass unit a resistive load of 6ohms, our analysis shows, the Yorkminster is a perfect 8ohm nominal load, largely resistive. We measured 93dB from one nominal watt; Tannoy claim 94dB - close enough. The loudspeaker is an almost ideal 8ohm load, with no reactive energy storage and of little current draw. So as far as amplifiers are concerned it is a feather to drive in comparison with typical loudspeakers.

The Yorkminster is an unusually accurate loudspeaker by any standards, but there's some treble raggedness, common with high frequency horns. As a load it is almost ideal, placing no strain on an amplifier, transistor or valve. This is an impressive loudspeaker under measurement. NK

Frequency response



Impedance



# High Life

**David Price finds Martin Logan's Summit loudspeakers a truly uplifting experience...**

**I** don't think Martin Logan – the man or the company – will be best pleased by me beginning my review of his (their) new Summit loudspeakers with a long preamble about a rival's product, but so be it. I shall start with a paean of praise to the mighty Quad 989 electrostatic.

These vast, swingeing, behemoths are one of the most musical loudspeakers I've yet heard, in their way. They are brilliantly capable, supremely endearing, visually arresting and obviously charismatic. Unfortunately, true to the best traditions of British design (Lotus cars, Norton motorcycles, Millennium Bridges, et al.), the 989 is obviously flawed. Not to put too fine a point on it, it embodies brilliant thinking yet displays rank amateurism too.

Now, I have a feeling that Quad won't be too offended by this, as they are a company peopled by extremely able folk, and – basically – they know. Off the record, in the lobby of the Marco Polo Metropole Hong Kong last year, a certain Quad man admitted to me that, "the mechanical engineering of the 989 is less than ideal"...

In a sense, it's all the more impressive that the 989s sound as good as they do, considering they sway like a hi-fi PR guy in the hospitality lounge of an international airline. Their wobbly wooden frames are not in the 'hewn from granite' category; in fact, if you stand on the base and gently push the speakers to and fro, you'll find that – in the immortal words of The Smiths, they "Oscillate Wildly"...

Well, we know that, and they know that (and their replacements, just about to arrive, are dramatically better in this respect). My point is that the 989s, bless them, stand in dramatic counterpoint to the MartinLogan Summits. The latter – a direct price rival – are built a hundred times better, with all the right things in the right places, stunning aesthetics and a sound to match. Are they comprehensively better than the Quads? Not really, but they're certainly superior in some respects, and inferior in others, and in this review I'm going to try to explain the pros and cons for you.

The Summits are, as the name suggests, quite large. At 1500x320x520mm, they're pretty much as tall as the Quad 989s, but they're only about one third as wide. The electrostatic treble and midrange panels are naked and semi-translucent, which makes them look magnificent. Quad, by contrast, cover theirs in cloth – which is terribly English, I suppose, but not exactly sexy. At the base, the MLs feature boxes with two active 10" bass drivers (one forward firing, one downward firing), and on the back are level and crossover frequency controls offering  $\pm 10$ dB trim at 25Hz & 50Hz points.

This, in case you hadn't guessed, makes the Summits 'hybrids'; they are not 'pure' electrostatics like the 989s, and this is for the better, and the worse. Electrostatic panels are great in some ways; fast and with excellent dispersion (vastly better than a



standard speaker with conventional drive units), they're like listening to a Phil Spector-like 'wall of sound'. They're also very smooth and couth at most levels, until they're overdriven when (without the help of protection circuitry), sparks start to fly. They're delicate, and subtle, and so much more consistent than moving coil drivers, all of which seem to want to do their own things, and what the midrange driver wants to do is invariably different to that of the bass unit and/or tweeter...

Trouble is, electrostatic panels have about as much puff as forty Woodbine-per-day asthmatic – they're not exactly barrel-chested, physical, fire breathing monsters. A good, large (i.e. 12") lightweight paper or carbon fibre moving coil bass unit can flap your flares and 'thwack' you in the back (which is why PA stacks use them), but electrostatic panels can't. The reason Martin Logans are hybrids, then, is to give the best of both worlds – the physicality of moving coil bass drivers allied to the delicacy and intricacy and subtlety of an electrostatic.

For sure, this is a great idea in principle, but in practice it's easier said than done. Given that moving coil drivers and electrostatics have such different physical properties, whenever the twain shall meet, they sound like, erm..., two different types of drivers in a sort of 'sonic marriage of convenience'.

Let me give you an example – Andy Rourke's bass solo on the (aforementioned) Smiths' live standard, 'Barbarism Begins at Home'. At the top of the bass guitar fretboard, an electrostatic will be fast, lithe, snappy, rhythmically tight and tonally dry. Then, as Rourke goes down the fretboard, and the hybrid starts feeding in its moving coil bass unit(s), things get boomy, plummy and ponderous. Essentially, it can be like listening to two speakers in one. This is the bane of hybrids, and just what you don't want. The test of the Martin Logans, then, is whether those bass drivers integrate seamlessly with their very lovely electrostatic mid and treble panels...

## SOUND QUALITY

My first impressions of the Summits weren't good. It's true to say that they take lots of running in, and have to be powered up all the time. From new, they're thin sounding and rhythmically ponderous, with an overblown and semi-detached bass. Indeed, I spent an inordinate amount of time getting these right, and it took lots of experimentation with cables and positioning. I have

say though, in the end, they came on song with aplomb...

In my room, which is middle-to-large by UK standards, the biggest problem was indeed that bass. It's active, and there are two of the blighters in each speaker; one forward firing 10" cone and one downward firing 10" cone. In my room, it was totally overpowering. I couldn't move the speakers out into the room too far, because of the way my room is shaped, so I had to settle with 20cm from the rear walls, toed in at around 12 degrees. In this position, the treble/mid panels sounded sublime, but I couldn't say the same for the bass units.

I took the bass down as much as I could, using the rear mounted level and crossover frequency controls, but still I had the feeling that the bass was just too dominant, and boomy too. Now, I can appreciate that in other, larger, US-style listening rooms, the speakers a good 80cm (or more)

that a truly high end speaker such as this should require 'physical intervention'... There is obviously an issue here with over prominent bass.

Tweaks done, plus about three weeks of constant use, allowed the Summits to blossom. By the end of the review period, this loudspeaker was consistently turning in heart-stopping performances, and I was no longer missing my reference Quad 989s (now unceremoniously standing in the hall, like two large radiation shields from the outside world).

The key to the Summits is their midband clarity, subtlety and finesse. There is a delicacy from these speakers that not even the Quads possess; it's genuinely pulse-raising stuff. But the trouble is that they're, ahem, rather revealing of their source material. Put some Nick Drake (on CD) on, and they tell you that here's a mediocre remaster of what was once a sublime sounding analogue recording. They're two

"these loudspeakers take you disarmingly close to the recording..."

out from the rear walls, it would integrate far better. Still, I had to work with what I had, and so a bit of serious tuning was required.

First, the bass units got their own runs of Supra Sword loudspeaker cables; this is very upfront, crisp and engaging, and so much more suited to the bass units than the Townshend Isolda DCT I'd been using. This, by the way, went to drive the electrostatic panels, and the combination of the two worked a treat. The Townshend, I think, is super smooth and tonally a little warm (at least, on the warm side of neutral), and it really matched the high frequencies, letting the tight, spry Supra to grapple with the bass drivers.

Second, and rather dramatically, I ended up putting something under the downward firing bass drivers! This may sound a little odd, but it damped the bass in my room better than any amount of level control knob twiddling or speaker repositioning could. A single large wool motorcycle sock (but not the matching Derri boot!) took the level down a tad, and the result was that the active drivers no longer excited my room's resonant mode(s). This may seem 'Heath Robinson', but it was necessary in this case, and actually worked very well. In large rooms, drastic action such as this shouldn't be necessary, but still I have to say that I think it's unfortunate

dimensional, thin, anaemic. Put Kate Bush's 'Moving' on, from 'The Kick Inside', on an original first generation Japanese vinyl pressing, and they're massively expansive and immediate,



like a ten foot Kate is singing right between your eyes.

Put Kraftwerk's 'Minimum Maximum' DVD (16bit, 48kHz PCM audio stream) on, and you're lamenting the mastering, thinking this is weedy and thin; switch to the original 1981 vinyl pressing of 'Computerwelt' and it's massive, heart stopping, breathtaking and

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towering before you. Across most of the audio spectrum, the Summits are truly neutral, and – despite an ever so slight treble roll off (to my ears, at least), they're smooth and even and virtually flawless from the high treble to the upper bass.

I'm happy to say that my bass 'tweaks' proved remarkably effective, with the lows integrating with the rest of the frequency spectrum surprisingly well. There's always the sense that, ever so slightly, there's moving coil bass coupled to electrostatic mid, but after all those hours of fettling, it really was so subtle that I simply didn't dwell on it. The other side of this is that there's serious

Patrick Cleasby was spinning LPs *chez moi* (a rare sight, with his digital predilections) and suddenly there was a ring at the door. The neighbours had come complain about the volume; this was simply not physically possible with the Quads, and so never happened. At genuinely high listening levels, the MLs 'perked up' a bit, and became a tad less smooth, but at the same levels the Quads would be 'silent running', their panels' protection circuits having called 'time' early on the proceedings...



**THE DESIGN**

The 34kg Summit is a powered electrostatic with active bass drive. The company says that its 'PoweredForce' bass technology results in usable bass extension down to 24Hz [see MEASURED PERFORMANCE] from an enclosure not much larger than a case of wine. A 2x200W (into 4 ohms, claimed) amplifier drives two 10" (254mm) cast basket, high excursion, aluminium coned drivers per speaker. Above this, a rigid, billet and extruded aluminium (1500x320x520mm) 'AirFrame' houses the electrostatic mid and treble panels. MartinLogan claims that its 'XStat transducer' gives unparalleled performance from extremely compact panels which boast a playable area equal to that of a traditional electrostatic transducer nearly twice its size. Each Summit crossover uses precision point-to-point wiring, audiophile-grade polypropylene capacitors and massive air-core coils. The speaker comes in a variety of standard hand rubbed wood and aluminium finishes, and so can be customised to match any décor.

power and punch; this makes the 989s look positively limp-wristed. The beautiful bass playing on 'The Kick Inside', for example, came over in an utterly convincing way; poignant, well articulated, emotionally engaging and absolutely 'all of a piece' with the rest of the recorded acoustic.

Thanks to that wonderful subtlety, the Summits are fantastic with micro dynamics. Few designs at any price come close to the way they convey tiny nuances of playing, minute elements of complex mixes, or simply the power of musical understatement. Piano playing in particular is a joy. They have natural tonality as you'd expect from any fine electrostatic, with sparkling harmonics and fantastic timbral reproduction, yet this takes a back seat to the sheer dynamic expressivity. Hearing crashing piano cadences is something else through these speakers...

Better still, I was able to get massive volumes out of my reference World Audio K5881 valve power amp. Where it would be wheezing and sneezing and straining with the Quads (with all those reluctant electrostatic bass panels to marshal into action), the MartinLogans make high levels a stroll in the park for my poor twenty watt tubular belle. One evening, our very own

Here then, we have an extremely detailed and delicate sounding pair of monitor loudspeakers, with a vast soundstage (given the right source and/or software), wonderful air and space and real hair raising level capability. Perfect, then? Well, no. I still like the sheer scale and physicality of the Quads (they really are big, in the simplest sense; they fill rooms with utter ease, whereas the MLs, with the wrong source, can sound smaller in scale). I also like the Quads' bass; it's tighter and tauter than the MLs (as you'd expect), better integrated with the midband (i.e. almost perfectly so) and tighter and tauter too, at least at sub-100Hz frequencies. By comparison, the MLs sound just a little bit lighter, brighter and less well integrated.

Treble quality from the MLs is better than the Quads; it's smooth, silky and sounds very classy. Still, there's just a smidgen of air and space missing – like that last

'nth' degree of atmosphere has been sucked out. Switch to, say, the Yamaha NS1000M's Beryllium dome and you realise how both ML and Quad electrostatic treble panels don't quite get it completely right.

**CONCLUSION**

I've yet to hear the perfect loudspeaker (sure I never will), but MartinLogan's Summit is a brilliantly accomplished product. It certainly isn't flawless (what is!), yet it takes you disarmingly close to the recording with all the electricity and excitement it entails. Bass matching problems aside, it goes truly loud and delivers 'knock out' performances, day in day out. I loved it, and I think it's one of the world's truly great loudspeakers, just make sure you match it properly.

**VERDICT** ●●●●●

Outstandingly powerful, detailed and musical performers, but bass makes room matching critical.

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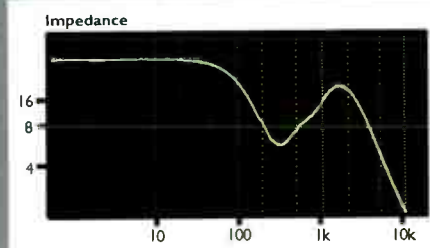
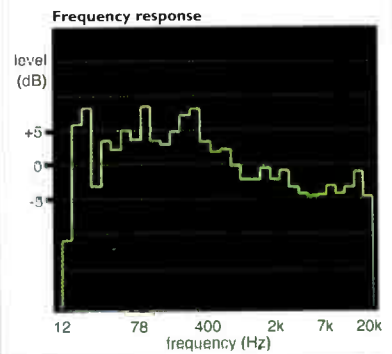
**MEASURED PERFORMANCE**

The electrostatic panel of the Summit works from 270Hz upward; below this frequency an active woofer / subwoofer combination operates, the woofer facing forward, the subwoofer downward. There was peaking at the crossover frequency, due to forward summing, so integration needs to be improved. The LF assembly provides +6dB or so more output than the electrostatic panel and there's no gain adjustment, so this bass bias - which is excessive - cannot be lessened. Otherwise, the electrostatic panel runs smoothly enough up to 20kHz, in the best tradition of a good electrostatic. The subwoofer gets the speaker flat down to 20Hz, so it too works well.

Impedance of the electrostatic panel plummets above 2kHz, to below 1ohm above 10kHz our analysis shows. This could well draw substantial current on some programme, so a sturdy amplifier is best. Impedance measured 3.8ohms with pink noise. Sensitivity was set by the powered subwoofer, measuring a massive 93dB.

The components of the

Summit work well in themselves, but integration needs to be improved. A potentiometer in front of the subwoofer to reduce output would help. Then the Summit would answer many people's dreams I suspect. NK



# Westminster

Noel Keywood visits Heatherdale to listen to one of the largest domestic loudspeakers available, Tannoy's magnificent Westminster Royal HE Dual Concentric...



*Heatherdale's Westminster Royal HE, with AudioNote Keron valve mono-blocks nestling behind.*

One of the world's biggest bangers, intended for domestic use, is Tannoy's Westminster Royal HE. We're not talking broom cupboard here, so much as barn. This loudspeaker is improbably large, so much so that it causes hi-fi dealers to break out into a sweat. Not all of them though. One dealer - Heatherdale Audio - not only sells Tannoy's Prestige loudspeakers, they even have a Westminster Royal HE on demo. Although I have heard the Westminster at Tannoy's Glasgow

factory, that was some time ago. For this issue's look at big bangers I decided it would be interesting to try out The Highway Agency's latest bit of handiwork, six newly tarmaced

lanes of M25, and thereafter the A24 to sunny Hove, to reacquaint myself with Tannoy's finest.

The Westminster isn't in their shop, located on the outskirts of Worthing, Sussex, but in a special room built to spec. Yes, this monster needs a special home, unless you already own a castle that is. At nearly 1m wide and 1.4m high the Westminster would suit a banqueting hall perhaps, but little smaller. It weighs 130kgs and needs at least three men to lift it. That could be why most dealers would rather sell Matsui than a true Brit of outstanding pedigree; the Westminster doesn't just overwhelm competitors, it jostles them out like a cuckoo taking over their nest. The sheer immovability of this loudspeaker makes it difficult to be seen as anything less than in architectural terms - like a roof for example.

Whilst the Yorkminster is a fairly simple bass reflex design, the Westminster is an altogether more complex device, as the cutaway diagram shows. It uses a 15in Dual Concentric drive unit loaded by a compound horn. This means the driver is loaded by a horn at both front and rear. The front horn has a short flare and serves to direct upper bass/ lower midrange frequencies into the room. It's clearly visible in the pictures. By narrowing the dispersion it channels forward energy and in so doing improves efficiency. A horn directs sound at you and couples the drive unit into the room better.

At rear a huge folded horn provides low frequency loading. Its

*"If Yorkminster reproduces music with the relaxed ease of a V8, then Westminster adds to it the extra power of a V12..."*

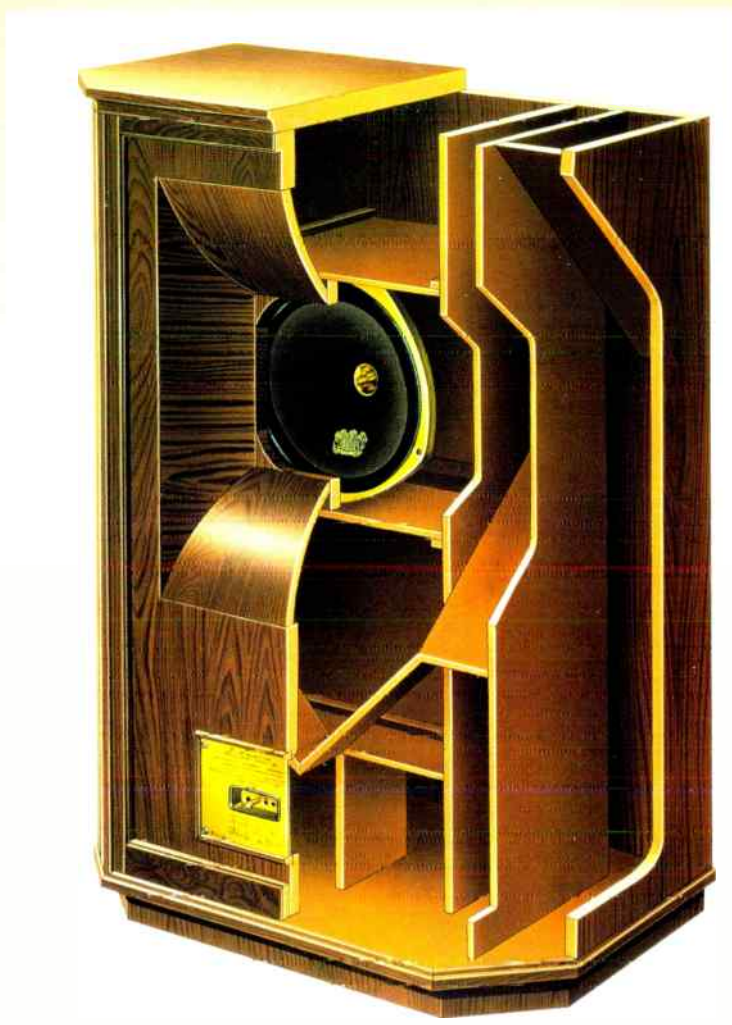
# Live!

complex structure explains why the cabinet is so large and heavy, for this is a full size horn, not a truncated one. Inside the Westminster lies a labyrinth of passageways that couple the rear of the drive unit cone to the outside air via vents that lie behind those, tall slim Tygan panels, angled at 45 degrees, that sit at either side of the main baffle.

Horn loudspeakers are very efficient, the Westminster astonishingly so. It produces 99dB SPL from one watt - enough to blow you across the room. Dave at Heatherdale was driving the Tannoy's with an AudioNote Keron, an ideal choice in my view. These loudspeakers, like the Yorkminsters, need a super smooth amplifier and will not suit much solid-state, except a few of the best. The Keron was an impressive match.

Part of the stunning dynamic range of Westminsters comes from the seemingly dark silence from which huge events suddenly emerge: this is the inter-transient silence that's important in delineating notes and establishing a well defined sense of pace and rhythm. The Keron was a delightful partner for the Westminster, because Tannoy's big Duals listen right into an amplifier - and the Keron showed it could withstand such close inspection, establishing deep silences free from the subliminal mush and ringing so much solid-state suffers. AudioNote told me that Keron uses special nickel-iron transformer laminations free from memory effects, and top quality components in order to achieve this, by the way. It is a parallel single-ended amplifier, meaning pure Class A, with twin 300Bs per monoblock to produce 18W per channel.

The Westminster offers an even stronger sense of dynamic than the Yorkminster due, I suspect, to that lower midrange front horn. This brought to vocalists an unusually strong sense of living embodiment, images being not only bolted into position on the sound stage, but also able to impose their vocal efforts on me in a way that was all but physical. Yorkminster offers extraordinary bass and great imaging, whilst Westminster fleshes out singers into live form with almost



**Internal view of the Westminster, showing its folded horn, which vents out of the front, at either side. This is one of the biggest bangers available today, yours for £15,000.**

implausible solidity. As a psycho-acoustic contrivance, it's supreme. And if Yorkminster reproduces music with the relaxed ease a V8 brings to motoring, then Westminster adds to it the extra power of a V12.

Tannoy claim Westminster reaches down to 18Hz (-6dB) and, knowing their serious approach to engineering, I believe them: my own measurements on Yorkminster correlated almost perfectly with theirs after all. This suggests a 30ft long room would be ideal, whereas Yorkminsters 24Hz limit suggests a 22ft room is optimal. I deliberately moved Yorkminster from a 28ft room to my 16ft lounge to subjectively assess the affect upon bass quality and it was fascinating. The speaker still went low, but it lost its sledgehammer punch. Heatherdale's room,

although acoustically treated to give great results, wasn't large enough to allow the Westminster to realise its full potential in terms of bass depth. You can see why demo'ing a loudspeaker like this is no easy task. It gave wonderfully tight bass all the same, with extraordinary control and definition, displaying a quality quite beyond everyday expectations.

Photographically, there's no angle that flatters Westminster. In real life it's much the same: this loudspeaker is a cumbersome looking monster. But listening to it partnered with an Audionote valve amplifier is to fall in love. Supremely relaxed, improbably dynamic and totally in control, this is a loudspeaker to rearrange your perceptions about what is possible. It's one of the very best of the big guns, and gets my vote for sure!

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# Holding the line

**This monster standmounting loudspeaker is a Transmission Line design. Noel Keywood holds on to his hat when he listens to PMC's professional IB1...**

It isn't quite a broom cupboard, but then again PMC's IB1 isn't a dainty bookshelf design either; as we found out when trying to manoeuvre it. Weighing in at 36kgs apiece (80lbs) the IB1 is, like Tannoy's Westminster, a loudspeaker with more going on inside than it would appear on the outside, for this is a transmission line design. Inside there is a long labyrinth, requiring a lot of panelling. Driving it is a large 10in flat fronted bass unit. The idea is to provide "transmission line bass" which, when done properly, is impressive stuff. Here's a different form of big banger, one that sets out to produce a full scale performance without limitation.

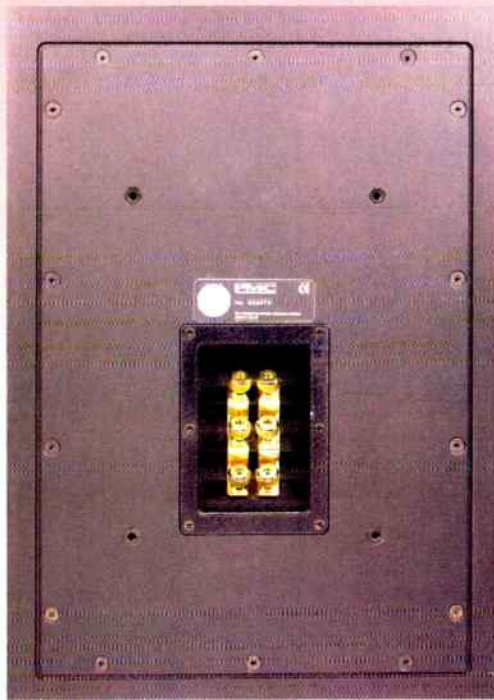
PMC stands for Professional Monitor Company, so here again - like Tannoy's big bangers - is a loudspeaker with a recording studio pedigree. We asked for - and got - a demo pair, well run in, and just back from a studio, who were impressed enough to place an order.

As a pro monitor the IB1 doesn't come in cheap, costing a mere £4,815, including stands and VAT, but if you want a but-kicking big banger this one is quite a proposition...

Technically, the IB1 has a mountain going for it. In addition to its unusual bass arrangement, this loudspeaker uses an item very much favoured in the studio world, a midrange dome drive unit. You can see this plainly as a large inverted saucer like object, between the bass unit and tweeter. Domes like this make a lot of sense. They better match dome tweeters, giving a smoother off-axis response that makes for a more cohesive sound. I don't want to get too technical about this, because a lot of obscure ideas and terms soon emerge, but the ear hears sound coming directly from a loudspeaker, as well as that reflected back from the room. With a midrange dome reflected sound better matches direct sound; there less of a discrepancy between the two compared to conventional two-way designs. This affects what you hear.

What a midrange dome potentially manages, then, is excellent integration with the tweeter and as well, if it goes low enough, the woofer too. There





**Rear view of IB1 showing tri-wire terminal panel. The pillars accept 4mm banana plugs.**

are some difficulties, as always with loudspeakers. To go low the dome must be large, but the larger it gets, the more difficult it has in reaching up smoothly to meet the tweeter; there's a trade off here. As drive unit technology steadily moves ahead this difficulty is lessening.

Midrange domes have traditionally sounded a bit sharp and spitty as a result of nasty high frequency break up modes. Because they distribute a lot of energy it's a problem that, subjectively, is very obvious too. The trick is to engineer a decent dome. Then you get a very clean and open sounding midrange, albeit one without the darkness or smoothness of the more common cone driver.

A light, open and airy presentation, with good imaging is the trademark of this arrangement. Its revealing and unforgiving nature makes for a fairly challenging experience too. Dali use a midrange dome integrated with a ribbon tweeter in one assembly and it exhibits these properties in abundance. It has an almost glassy bright lucidity that is going to impress a lot of people, if not all. But in my experience that depends much upon fine tuning; basically it is a good idea. The much discussed Yamaha NS1000 is another loudspeaker that used a midrange dome, a beryllium jobby from Fostex I recall. PMC use a 75mm doped fabric midrange dome, from DST they told me, that works from 380Hz up to 3.8kHz. It is loaded by a sealed, stuffed rear tube that absorbs that cone's back wave.

Transmission line bass has always

been a rare experience. This form of loading is slowly gaining traction as it becomes better understood and there's no shortage of info on the Net nowadays, as well as computer design programmes. Early designs were largely empirical; it is said the first experimenter, Dr Bailey, used an electric train to carry a microphone down a tube in order to make

measurements. IMF loudspeakers emerged from Dr Bailey's work and his connection with Radford. John Wright was behind IMFs and subsequently started TDL to continue the line.

We reviewed giant TDLs Oct 94 and built a small pair of transmission lines, KLS5, in our Supplement of April 1995 (this is on the Net still: Google 'kls5'). Big TLs of that time had seemingly endlessly deep bass, that was even and well damped. It lacked the "bounce" of closed and vented boxes, but was more profound. Not everyone liked it: a criticism commonly made was that it was "slow". I suspect this is because a big TL put more low frequency energy into a room than most people were used to - and it decays slowly. Most people were impressed though, including Peter Thomas of PMC.

Recently TLs have received considerable attention and can now be modelled on a computer. All the same, their construction is complex and the final box very heavy, which

is why they remain rare commercially. I spoke to Peter Thomas, the IBI's designer, about Transmission Lines and he too had heard the big TDLs, having owned one. But whilst a Transmission Line is generally understood to be an infinitely long line that absorbs all rear energy, this is an unrealistic aim, as the line would be too large. In practical form, higher frequencies are absorbed, he told me, whilst lower ones are not.

Below the frequency where the line is a quarter wavelength, output from the line starts to augment forward radiation from the cone, improving lower bass and raising efficiency. This is how the IBI works, he said. The line exhausts on the front panel, below the bass unit. "A big advantage of a good Transmission Line is low distortion" Peter said. "This gives clean bass".

The 10in bass unit faces a stiff back load, I was told, so it is specially constructed to be exceptionally rigid. Two carbon fibre sheets sandwich a Nomex honeycomb and the panel is driven by a large 75mm (3in) voice coil.

Measuring 740mm high, 330mm wide and a considerable 465mm deep, the IBIs make their presence known wherever you put them. And they somehow feel heavier than the weight quoted. PMC's stands lift them 360mm. Construction is rock

"the most powerful bass slugger I've ever heard..."

solid, as you might expect from a box in which there are numerous baffles that brace the sides, as well as directing the bass driver's rear wave.

The rear panel carries a tri-wire connecting panel, so each drive unit can be fed by separate cables, or amplifiers. We used short single wire Van den Hul Jade cables.

## SOUND QUALITY

That these loudspeakers go low isn't in doubt. They are strong in upper bass though and it is this that catches the attention, as the ear is more sensitive to higher frequencies. There's a big bass presence from them that gives drums enormous weight and bass guitar real scale as notes stride clearly up and down, seemingly unfettered by earthly restraint. The IBIs deliver bass at a level that is prominent and forceful. These are not loudspeakers that leave you in any doubt about how large they may be, nor what they are capable of. The organ of Saint Sernin had the room gently moving

as Peter Hurford used the Grand Bombarde, and with this sort of programme the IB1 showed how a transmission line comes over as able to deliver monstrous bass with complacent ease.

The metronomic beat behind the Scissor Sisters' 'Filthy Gorgeous' fairly punned me on the sofa in an experience that was more physical than aural. The low bits were low enough and powerful enough to vibrate the cushions around me, and my body too. The delivery is on the soft side, but scale is in no doubt with these 'speakers.

Kettle drum thundered with power that was almost life threatening on Holt's Mars, the bringer of war, from The Planets. A lesser loudspeaker just could not muster the sheer sense of force that the IB1s possess, and this is where they distinguish themselves as big bangers. So big in fact I suspect only large, solidly built and fully detached homes could accommodate them without complaint.

And finally, with Goldfrapp's 'Ooh La La' and - especially - Lovely to CU, at even modest midband levels the synthesiser bass moved the sofa quite seriously it was almost too physical to tolerate. To play this CD loud I had to hang on and - er - grin! No doubt that the IB1s deliver bass that is simply humungous in degree. If you want bass then this is the place to start - and to end too.

The midrange dome makes its own case, placing vocalists nicely on the sound stage, positioned steadily, neither far forward, nor too far back. There's the clear, open presentation that a mid dome has by its very nature, one that is always a delight. That the tweeter continues dome energy upward enthusiastically was obvious to my ears; the IB1 is bright and was a little edgy too I felt, but it delivers both speed and detail in abundance.

In a nutshell PMC's IB1 is the most frighteningly powerful bass slugger I've ever heard. Its bass isn't just deep, it carries so much acoustic power that all in its path is threatened with obliteration. Adding what's at the back of a cone to what's at front could be banned by the E.U. if they ever get to hear it.



**A TDL Reference transmission line from 1994. It was massive, designed to reach down really low. The bass units are KEF B139s, positioned either side of the central baffle. Few manufacturers have chosen to follow TDL's lead in this field, but PMC are enthusiastic about this bass loading principle.**

## MEASURED PERFORMANCE

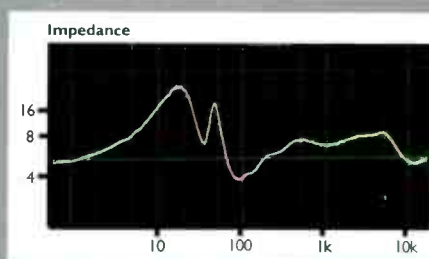
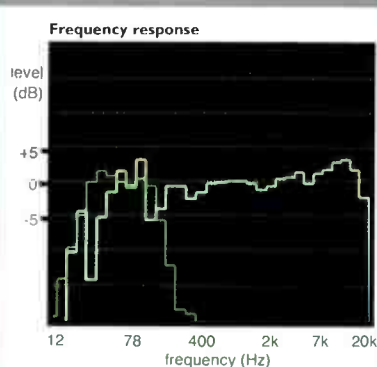
The large 10in flat bass unit within the IB1, loaded at rear by a transmission line, certainly goes low, measurement shows. Our analysis shows a lower limit of 25Hz (-6dB), in line with PMC's own specification. There is output at 20Hz and lower too, which in a large room will make itself felt.

The lower port is very broadly tuned and did appear to augment forward output (i.e. its output was in-phase), producing some peaking in the 60-100Hz region. This should enhance the sense of "speed". Overall, there is likely to be prodigious bass from this loudspeaker, as you might expect and hope. It looks well controlled though and not resonant.

The dome midrange is very smooth in output, but output from the tweeter rises quite noticeably, enough to ensure the IB1 will sound quite bright, unless heard a little off axis.

The impedance curve shows the cabinet doesn't impose an acoustically resistive load as a transmission line should; there's as much reactance here as an IB or Reflex. Sensitivity was high at 89dB from one nominal watt.

The IB1 is essentially an accurate loudspeaker, likely to have a very smooth, open and clean sounding midrange, plenty of deep bass and obvious treble. It is well engineered, in a highly specific manner. NK



VERDICT ●●●●£

A heavyweight slugger that delivers death by bass. Awesome!

PMC LTD £4,815

PMC IB1

+44 (0)870 444 1044

www.pmccloudspeaker.com

FOR

- massive bass  
- clear midband

AGAINST

- bright sound  
- tubby

# SEVENOAKS

## SOUND & VISION

With over 30 years experience, **SEVENOAKS SOUND & VISION** is one of the largest and most respected Audio/Visual retailers in the country.

Each Sevenoaks Sound & Vision store stocks a wide range of quality products, covering all categories of specialist home entertainment, from Hi-Fi separates and systems to DVD recorders, widescreen plasma televisions and projection systems.

Our fully trained installation experts can neatly and seamlessly integrate a home cinema or hi-fi system into your home. All electronics can be hidden away, speakers discreetly mounted either in the wall or ceiling and the complete system operated via remote control.

Whatever your requirements, Sevenoaks Sound & Vision has a diverse range of products and the expertise to advise, demonstrate and guide you through the home entertainment jungle.



### Specialist hi-fi & home cinema

**Contemporary hi-fi** is constantly setting new standards in sound reproduction and design. Whatever you listen to, Sevenoaks can recommend separate components that will bring your music collection to life and complement your home. We're enthusiasts and experts, passionate about helping you build (or upgrade) a system that will delight for years to come.

**The recent growth of DVD** has led to a huge rise in demand for home cinema equipment - DVD players, AV receivers, projectors and plasma screens but, with so many options, it's not easy to know which ones will suit your needs. Indeed, in the face of this quickly evolving and often bemusing array of products, we aim to assist you in assembling a home cinema system to be proud of - one that achieves outstanding picture and sound quality.

### NEW STORES

#### LOUGHTON & YEOVIL

We are pleased to announce that these new stores are now open -

##### LOUGHTON

7-9 GOLDINGS HILL • 020 8532 0770

##### YEOVIL

14 SILVER STREET • 01935 700078



### Audiolab

Audiolab's new 8000 series offers a definitive and genuine hi-fidelity performance from a no-nonsense approach to engineering. These famous products have all been re-engineered to create a complete two channel range, including the 8000S, 8000O, 8000M and 8000P models plus a all new CD player. A 7.1 channel pre and power amplifier completes the range.



### Project

Project is currently one of the world's leading suppliers of turntables, with a range of models designed to satisfy all levels of expectation and budget. The range includes the Award-winning Debut (pictured above), Xpression II, Perspective and RPM Series.

### Roksan

Roksan designs and manufactures some of the most acclaimed hi-fi equipment currently available. All Roksan products are carefully evaluated by experienced engineers at every stage of the design process with the emphasis on performance and build quality.



### B&W

The focus of Bowers and Wilkins Loudspeakers has always been to offer the best possible musical experience. With a combination of the latest R&D techniques and a passion for music, B&W produces a diverse range of products befitting the largest audio manufacturer in the UK.

The New XT Series delivers audiophile performance from beautiful and slender cabinets and feature B&W's Nautilus™ Tapering Tude aluminium dome tweeters and bass/midrange units woven from ochre-coloured Kevlar®.



NEW XT4

Award-winning MT30 Speaker System



### Cyrus

If you've enjoyed listening to music before, try listening to it through a Cyrus system. With every product tuned by ear, Cyrus represents a quality of sound, which is rare at any price. Invest in a Cyrus system and you'll be rewarded with a wealth of sound you wouldn't have thought possible.



## Quad

Founded in 1938, Quad's history is one of audio excellence. Today's range includes both electronics and speaker systems.



## NEW Monitor Audio Gold Signature

This exciting new range of high quality speakers is now available from selected Sevenoaks stores

## Monitor Audio

Since 1972 Monitor Audio has been developing and perfecting the implementation of metal drivers, innovative crossovers, and exemplary speaker cabinet construction and finish to further the ideal of achieving sound which is to the original "as close as it gets". The range includes - **GOLD SIGNATURE, SILVER RS, BRONZE** and **RADIUS** speakers, plus the exciting new **I-Deck** docking station, an excellent any-room companion for your iPod.

## Digital Radio

With Digital Audio Broadcasting (DAB) capability, these high-quality tuners deliver more stations and offers pure, distortion-free, CD-like sound, while providing useful radio and data services.



Pure DRX702ES & NEW Denon TU-1800DAB

## Wharfedale

### Diamond 9.1

"Wharfedale has been updating and tweaking its Diamonds for 20 years - and rough they're not! Tight bass, clear midband, and sparkling treble for not a lot of cash."



### Diamond SW150

"Considering the price, the detail and definition to the bass are controlled and cohesive - equally adept with movies and music."



## KEF

Replacing the highly successful Q Series, KEF's New IQ line-up comprises eight models from the entry-level IQ1 bookshelf to the impressive IQ9 floorstander. All models incorporate KEF's Uni-Q driver technology and are available in a variety of finishes.

Other KEF ranges include XQ, KHT, the Award-winning KIT100 and eye-catching New KH13000 Series



NEW KHT3000 SERIES



## Acoustic Energy

Established in 1987, Acoustic Energy is one of Britain's premier loudspeaker manufacturers offering one of the most targeted range of hi-fi and home cinema loudspeaker systems on the market today.

"The legendary AE1 lives on in this groundbreaking new version... It sets a new standard for small speakers."



### KEF IQ5

"The IQ5s are little stars, providing stunning scale and authority from discreetly sized towers..."

The IQ5s are fully deserving Products of the Year."



### KEF KHT1005

"The KHT1005 is an ideal first-time buy, and will suit those looking to 'downsize' to a more living-room friendly style of speaker."



"Arcam has hit the jackpot with the Solo, offering simplicity, style and performance."

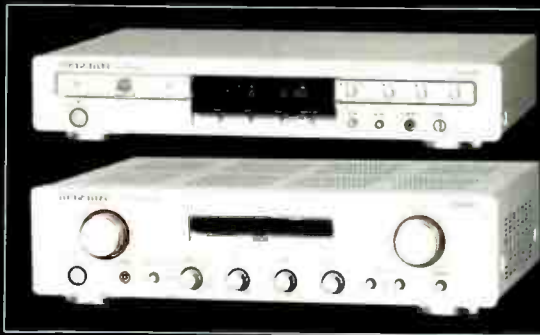
## Arcam

Arcam has spent more than a generation building some of the finest high-fidelity products the world has ever seen. The range includes two-channel hi-fi, complete multi-channel AV and the Solo all-in-one music system.



## ESSENTIAL ACCESSORIES

The right accessories can make or break your system. Our carefully selected range, including QED, SOUNDSTYLE and GRADO, will ensure you get the very best performance from your system.



## Marantz

Marantz is introducing a host of new products ranging from high-end hi-fi to HD-ready DVD players and AV receivers. The two main products groups are the 'premium' and 'range' series.

Latest additions to its hi-fi range include the CD5001 OSE CD player and PM4001 OSE amplifier offering a taste of high-end audio at an incredibly competitive price.



## Teac

TEAC's all-new Reference Series offers Innovation In audio-visual technology. The CR-250 DAB CD Receiver is a superb one-box unit which, when linked to a pair of speakers, makes for a cracking music system. While the Reference 300 Series T-H300DAB Mk II DAB/AM/FM tuner, when matched with the new 300 Series Mk II amplifier and CD player, forms another outstanding system.



PLEASE NOTE Some products/brands are not available at all stores. Please call to confirm or visit our website before travelling. \*Added Value Offers - From range available in-store. Not in conjunction with any other offer. ADVERT VALID UNTIL AT LEAST 06/04/2006, E&OE.

# Denon

Denon, Japan's oldest audio company, has established an enviable reputation for the performance of both its hi-fi and home cinema products, winning numerous awards and accolades over the years. Its stylish systems have succeeded in becoming the benchmark by which all other are judged.



**WHAT HI-FI? AWARDS 2005**  
BEST DVD PLAYER  
BEST AV RECEIVER



**WHAT HI-FI? AWARDS 2005**  
BEST DVD PLAYER  
BEST AV RECEIVER

Denon's range includes the award-winning DVD-1920 DVD player and AVR-1905 AV receiver (pictured above) and Smart Life S-301 all-in-one home cinema system.



**DVD-A1XV & AVC-A1XV**  
Award-winning DVD player and AV Amplifier.



Smart Life S-301

**WHAT HI-FI? AWARDS 2005**  
BEST DVD PLAYER  
BEST AV RECEIVER

**WHAT HI-FI? AWARDS 2005**  
PRODUCT OF THE YEAR



# Yamaha

Yamaha is recognised as a world leader in the fields of musical instruments and audio equipment, and in more recent years, home cinema. Products include AV receivers, amplifiers, and DVD players plus the innovative Digital Sound Projector speaker systems.



**WHAT HI-FI? AWARDS 2005**  
BEST DVD PLAYER



**WHAT HI-FI? AWARDS 2005**  
PRODUCT OF THE YEAR



**YAMAHA'S DVD-S2500, DSP-AX757SE & RX-V2600**



Harman/Kardon products delight both the audio purist and the film lover around the world. We invite you to experience the unique combination of artistry and engineering that is Harman/Kardon.

# Harman Kardon

Harman/Kardon's high quality audio, audio/visual and multi-room products are more than just boxes with knobs on, they are declarations of passion for music and movies. Producing pure, realistic sound with ever smarter engineering and simpler design,



# REL

In a market packed with subwoofers claiming to deliver the ultimate bass experience, only one brand of sub-bass system can prove its supremacy. With a record of review success stretching back over a decade, REL is acknowledged as the leading provider of deep, clean bass frequencies.



Arcam offers the movie and music lover the most complete range of high-performance home entertainment solutions from any specialist manufacturer.

# Arcam



**Onkyo DS-A1 iPod Connector Dock**

**WHAT HI-FI? AWARDS 2005**  
BEST IPOD CONNECTOR DOCK

# Onkyo

"A Dinky design that offers a vigorous listen, plus reassuringly solid build... Onkyo's CR-50SDAB is a fab buy."



**WHAT HI-FI? AWARDS 2005**  
BEST AV RECEIVER

# Pioneer

Pioneer's AV amplifiers and receivers are sound-tuned by the world-famous Air Studios to perfectly recreate the natural sound and energy of the original performance. The result is powerful, pure and crisp. Coupled with HDMI and iLink digital connectivity, as well as a connection for your iPod and PC, the audio adventure is even more absolute.



# DVD Recorders

Although making digital recordings of TV broadcasts isn't new, the choice, versatility and quality of recorders keep getting better. Our product selection includes DVD only, hybrid DVD/hard-disk and multi-format models.



**WHAT HI-FI? AWARDS 2005**  
BEST DVD RECORDER

# ESSENTIAL ACCESSORIES

The right accessories can make or break your system. Our carefully selected range, including QED, SOUNDSTYLE and GRADO, will ensure you get the very best performance from your system.



**WHAT HI-FI? AWARDS 2005**  
BEST AUDIO CABLE

**WHAT HI-FI? AWARDS 2005**  
PRODUCT OF THE YEAR

**WHAT HI-FI? AWARDS 2005**  
BEST AUDIO CABLE

# £ PRICING POLICY

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.

# FLEXIBLE FINANCE OPTIONS\*

Spread the cost of buying. Flexible finance options are available on the majority of products we stock. \*Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

# PLEASE NOTE

Some products/brands are not available in all stores. Please call to confirm or visit our website before traveling. Special Offers and Sale Offers - Not in conjunction with any other offer. Admin valid until at least 06/05/2006, E&OE.



## Specialist home cinema

At the heart of any home cinema is its screen: Sevenoaks Sound & Vision can put you in the picture with a selection of flat-panel displays and projection systems. LCD and plasma screens are just a few centimetres thick and come in sizes from a 13inch portable to over 60inches.



## Sharp Aquos

Only Sharp Aquos LCD TV offers so much perfection. With supreme styling, the appeal of the Aquos range is obvious. The Titanium Series combines Sharp's sixth-generation LCD panel with stunning, angular-styling, titanium colour-finish and superb build quality to produce a premium class of LCD idTVs.

### TITANIUM SERIES LC-45GD1E LCD TV with integrated FREEVIEW

"Sharp's mammoth 45in LCD TV is a testament to the growing viability and performance of large-scale LCD. Its 1,920 x1,080 resolution panel allows high-definition pictures to be viewed without compromise and when exploited to its full potential, the results could see this screen hung in a gallery. Images are so crisp and sharp, it almost makes reality look dull. We think it's inspirational. Go pay homage." HOME CINEMA CHOICE • AWARDS 2005

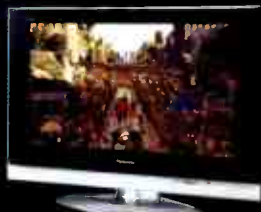
FREEVIEW channel and service subject to coverage. Aerial upgrade may be required.

## Panasonic Viera

There seems little doubt that the future of television is flat, and the future of flat is the award-winning VIERA range from the world leaders in screen technology, Panasonic. The VIERA range consists of both LCD and Plasma televisions. New additions to the range include 37, 42 & 50in PV500 models with support for both high-definition and MPEG-4 recording.

### TH-42PV500 PLASMA TV

"All told, Panasonic's new TH42PV500 is a stunning set that's clearly the new class leader."



### TX-32LXD500 LCD TV

"A classy performer that excels in almost every area and restores Panasonic to LCD's top table."

WHAT VIDEO • ISSUE 269



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# SEVENOAKS

SOUND & VISION



## Pioneer

Following its highly successful 'S' series, Pioneer has unveiled its sixth generation of plasma TVs. The 43" PDP-436XDE and 50" PDP-506XDE models include built-in digital tuner plus dual HDMI inputs.

### PDP-436XDE PLASMA TV

"Pioneer's latest is also its greatest: this is a truly wonderful HD-Ready TV."



## Samsung

### Milano LE40M61B 40" LCD TV

Samsung's New 40" LCD TV (LE40M61B) was honored with an EISA award for its premium display technology in terms of contrast ratio (5000:1), color expression (6.44 billion colors, 92% color gamut for NTSC), viewing angle (178°) and response time (8 ms). Also the model's simple body design focuses the viewer's attention on the screen. On the front of the minimalist design, the speakers are hidden from view in the bottom bezel and nothing distracts from the superb image quality.



## Toshiba LCD TV

These super-slim screens will take your breath away. Each model has been moulded from a stunning blend of cutting-edge design and state-of-the-art technology to create the ultimate audio-visual sensation. The collection comprises LCD screen technology, offering unrivalled combinations of image quality and sophistication and a variety of screen sizes and options, including integrated digital tuner.



### 32WLT58 LCD TV

"All in all, this is a great set. The twin HDMI inputs lift it a step above the current competition, while the performance could easily grace something far costlier. The Toshiba 32WLT58 has everything you need at an incredibly reasonable price: can anyone trump that?"

WHAT VIDEO • XMAS 2005 #301





## Projection

If you'd prefer to measure your screen-size in feet, how about one of the new generation of projectors? The latest designs are delivering superb results at increasingly affordable prices - and they're more home friendly than previous projectors, too.



**SP7210**

"The new projector's picture is just phenomenal... Looks like ScreenPlay's success story is set to continue."

## ScreenPlay

From the worldwide leader in digital projection technology and solutions, InFocus® ScreenPlay® DLP™ projectors are changing the face of home cinema offering market-beating performance, specification and value at every price point.



## InFocus NEW

The New InFocus IN/2 projector fills your screen with bright, vivid and crisp images, capturing every detail. This affordable 480p resolution projector brings the big picture experience to home entertainment and gaming.

## Sim2

Sim2 Multimedia is a world-leading manufacturer at the forefront of home cinema technology and a name synonymous with high-end home cinema projection.



**SIM2 C3X LITE**  
"The biggest leap forward in home cinema projection since the birth of DLP technology."  
WHAT HI-FI SOUND AND VISION NOVEMBER 2005

**HT300E** "Spectacular, in a word... Another terrific projector from Italy's finest."  
WHAT VIDEO • ISSUE 292



## Themescene

Since its launch, the multi-award winning ThemeScene™ brand has rapidly established a five-star reputation for uncompromised image quality.



**HT9** "Excellent image quality: strong specification and easy to use - a terrific projector... You must check this one out!"

## £ PRICING POLICY

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.

## FLEXIBLE FINANCE OPTIONS\*

Spread the cost of buying. Flexible finance options are available on the majority of products we stock. \*Written details on request. Licensed credit agreement. Minimum balance £400. Subject to status.

## PLEASE NOTE

Some products/brands are not available at all stores. Please call to confirm or visit our website before travelling. \*Added Value Offers - from range available in-store. Not in conjunction with any other offer. ADVERT VALID UNTIL AT LEAST ENDING DATE.

## Product Selection

Listed below is a small selection of our extensive product range. **Please note:** Some products/brands are not available at all stores. Please call or check your local store's details on our new website for a list of brands that are currently stocked before travelling. [www.ssav.com](http://www.ssav.com)

### TURNTABLES

Linn RANGE  
Michell RANGE  
Project RANGE  
Roksan Radius 5

### TUNERS

Arcam RANGE  
Cyrus FM X  
Denon RANGE  
Harman Kardon RANGE  
Linn RANGE  
Marantz RANGE  
Pure DRX-701ES DAB  
Pure DRX-702ES DAB/FM  
Rotel RANGE

### CD PLAYERS

Arcam RANGE  
Audiolab RANGE  
Cyrus RANGE  
Denon RANGE  
Linn RANGE  
Marantz RANGE  
Meridian RANGE  
Musical Fidelity RANGE  
NAD RANGE  
Quad RANGE  
Roksan RANGE  
Rotel RANGE

### CD RECORDERS

Yamaha CDR-HD1500

### AMPLIFIERS

Arcam RANGE  
Audiolab RANGE  
Cyrus RANGE  
Denon RANGE  
Linn RANGE  
Marantz RANGE  
Meridian RANGE  
Musical Fidelity RANGE  
NAD RANGE  
Quad RANGE  
Roksan RANGE  
Rotel RANGE

### HI-FI SPEAKERS

Acoustic Energy Aegis Evo One  
Acoustic Energy Aegis Evo Three  
Acoustic Energy Aelite RANGE  
Acoustic Energy AE1 MKIII  
AVI Neutron IV  
B&W RANGE  
KEF RANGE  
Linn RANGE  
Meridian RANGE  
Mission RANGE  
Monitor Audio RANGE  
Quad RANGE  
Quark RANGE  
Wharfedale RANGE

### HI-FI SYSTEMS

Arcam Solo  
Denon RANGE  
Linn Klassik Music  
Monitor Audio i-Deck  
Onkyo CR505DAB  
Teac RANGE  
Yamaha CRX-M170

### DVD SYSTEMS

Denon RANGE  
KEF KIT100  
KEF KIT200  
Teac RANGE

### MULTI-ROOM AUDIO

Cyrus Link RANGE  
Living Control RANGE  
Yamaha MusicCast RANGE

### DVD PLAYERS

REGION 2 & MULTI REGION  
Arcam RANGE  
Cyrus RANGE  
Denon RANGE  
Denon DVD-A1XV  
Harman Kardon RANGE

Marantz RANGE  
Meridian RANGE  
Panasonic RANGE  
Pioneer RANGE  
Samsung DVD-HD950  
Toshiba SD350  
Yamaha RANGE

### DVD RECORDERS

REGION 2 & MULTI REGION  
Panasonic RANGE  
Pioneer RANGE

### AV AMPLIFIERS & RECEIVERS

Arcam RANGE  
Audiolab RANGE  
Cyrus RANGE  
Denon AVC-A1XV A/V Amplifier  
Denon RANGE  
Harman Kardon RANGE  
Lexicon RANGE  
Marantz RANGE  
Onkyo RANGE  
Pioneer VSX-AX2AVi A/V Receiver  
Pioneer VSX-AX4AVi A/V Receiver  
Pioneer VSA-AX10Ai A/V Amplifier  
Rotel RANGE  
Yamaha DSP-AX757SE A/V Amplifier  
Yamaha RX-V357 A/V Receiver  
Yamaha RX-V557 A/V Receiver  
Yamaha RX-V657 A/V Receiver  
Yamaha RX-V1600 A/V Receiver  
Yamaha RX-V2600 A/V Receiver  
Yamaha RX-V4600 A/V Receiver

### A/V SPEAKERS & PACKAGES

Acoustic Energy Evo 3B  
Artcoustic RANGE  
Audica RANGE  
B&W RANGE  
B&W Mini Theatre RANGE  
KEF KHT1005  
KEF KHT2005.2  
KEF Q7 AV  
M&K RANGE  
Monitor Audio RANGE  
Quad L-Series  
Wharfedale Diamond 9 HCP  
Yamaha YSP RANGE

### SUBWOOFERS

B&W RANGE  
M&K RANGE  
MJ Acoustics RANGE  
Monitor Audio RANGE  
Quad L Series  
REL RANGE  
Wharfedale Diamond SW150

### PLASMA

Fujitsu RANGE  
Hitachi RANGE  
LG RANGE  
Loewe RANGE  
Panasonic RANGE  
Pioneer PDP43XDE 43"  
Pioneer PDP50XDE 50"  
Samsung RANGE

### LCD TV

Hitachi RANGE  
LG RANGE  
Loewe RANGE  
Panasonic RANGE  
Philips RANGE  
Samsung RANGE  
Sharp Aquos RANGE  
Toshiba RANGE

### PROJECTORS

Optoma RANGE  
Screenplay RANGE  
ScreenPlay SP5700 (REFURBISHED, LAST FEW)  
Sharp RANGE  
Sim 2 RANGE  
Sim 2 C3X  
ThemeScene RANGE

### ACCESSORIES

We have a wide range of Accessories from QED, Soundstyle, Grado, Goldring and more...



# Who are Sevenoaks?

Established as Sevenoaks Hi-Fi in 1972, we have grown steadily onto one of the leading independent home entertainment specialists in the UK, earning a reputation for outstanding service, choice and value for money. In 1995, reflecting our commitment to the emergent new technologies in home cinema, our name was changed to Sevenoaks Sound & Vision. We now have 49 stores across the land stocking a broad range of exceptional equipment and accessories.

## How to shop at Sevenoaks

When it comes to making big decisions about what to buy, there's no substitute for actually road-testing your prospective purchases - seeing, hearing and experiencing the products in action, with the benefit of our expert knowledge and guidance to help you choose.

## Hi-Fi & Home Cinema Guide New 2006 Edition

Pick-up a copy of our new **68 Page Guide** at your nearest Sevenoaks Sound & Vision store or order a copy via our Website. The brochure will be posted to you (UK mainland addresses only) **FREE OF CHARGE**.



## New Sevenoaks Website

The fully re-designed Sevenoaks Sound & Vision website has news and information on the Sevenoaks group and detailed pages to help you locate your nearest store. You will find information on our comprehensive product range plus hundreds of stock clearance items available from our stores nationwide.

To find out more, just click on [www.ssav.com](http://www.ssav.com)

## Custom Install **A Vision for Every Home**

Many people would love to have the latest cutting edge home entertainment technology - but they don't want it at the expense of their living space. Home cinema, high quality hi-fi, DVD recorders and High-Definition TV make viewing and listening a pleasure, but the more kit added to a home, the more cluttered it can become.

The Sevenoaks Sound & Vision **CUSTOM INSTALL SERVICE** can solve such problems. By working with customers to design their ideal home entertainment set-up, we can hide all the wires and help make the most of any space with a bespoke solution which complements the home rather than fighting against it.

Our service ranges from the most simple, affordable solutions to the most extravagant. We can transform every room and every home, whatever the needs and whatever the budget.

At Sevenoaks, we create bespoke home entertainment systems of the highest quality. We work with individual customers, architects, developers and interior designers to bring you the best in home entertainment. With 49 stores and over 30 years of experience, Sevenoaks creates systems that can transform your life.

## New Custom Install Guide Guide 2006

Our new Custom Install Guide 2006 is now available. Pick-up a copy at your nearest Sevenoaks store **FREE OF CHARGE** or order via [ssav.com](http://ssav.com) (UK mainland addresses only).



# SEVENOAKS

SOUND & VISION

## NATIONWIDE STORE GUIDE

**ABERDEEN** 01224 252797  
● 57 CROWN STREET *OPEN SUNDAY*

**BEDFORD** 01234 272779  
● 29-31 ST PETERS STREET

**BRIGHTON** 01273 733338  
● 57 WESTERN ROAD, HOVE

**BRISTOL** 0117 974 3727  
● 92B WHITELADIES ROAD, CLIFTON

**BROMLEY** 020 8290 1988  
● 39A EAST STREET

**CAMBRIDGE** 01223 304770  
● 17 RIVER FISH STREET

**CARDIFF** 029 2047 2899  
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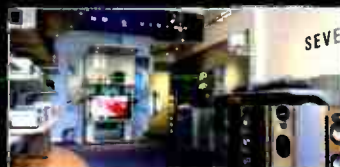
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# Focal Point

**Focal-JM Lab's Profile 918 is a stunning looking floorstanding loudspeaker, thinks Martin Wolszczak...**

**F**rance's most successful loudspeaker manufacturer has only been available in the UK for the last seven years, but has wasted no time in establishing itself as a major player at virtually all price levels. It began as Focal, which simply made 'original equipment' drivers to be incorporated into other manufacturers' speakers (e.g. Wilson Audio), then launched the JM Lab brand (named after founder and chief engineer Jacques Mahul) to market home-grown products. The Focal name used to be reserved only for car audio, and JM Lab for domestic products, but it now both employ the 'Focal' appellation.

The Profile range sits in the middle of the five groups of speakers, above the Chorus and Cobalt models, but beneath the Electras and Utopias. In fact they've actually taken over market slots that were previously occupied by the last series of Electra models, because the Electras have been completely redesigned and moved up market, reflecting fact that they are now equipped with a beryllium tweeter.

What you get with £1,990 Profile 918 is a



speaker that borrows some of the drive unit technology originally developed for the Electras, and combines this with a newly developed alloy dome tweeter and an impressively elegant cabinet. In configuration, it's a port-loaded two-and-a-half way design, based around two similar 165mm W sandwich-cone (two layers of woven glass fibre and structural foam between them) drivers, one working as a bass-mid, the other as a woofer. The tweeter is an inverse aluminium/magnesium metal dome. 25mm in diameter. The stunning looking 990x230x350mm cabinet has an elliptical base, but the top surface is just semi-ellipse – and is offered in 'Classic', 'Style' and 'Signature' finishes. Connection is made via a single pair of high quality WBT terminals. Focal don't believe in bi-wiring, saying the simpler the better!

**SOUND QUALITY**

Here's a genuinely capable big floorstander with a gutsy, clear and expansive sound – although it wasn't always that way! Brand new and out of the box, they were awfully hard and forward in the midband, but like all Focal designs they come together after around 100 hours of running in and have just kept getting better since. You're still slightly aware of the slightly glassy midband tonality (compared to a real smoothie, such as the Spondor S8e, say), but properly run in and matched with good, neutral speaker cables, you really have to try hard to hear it. Instead, as the drivers bed in, you become increasingly aware of the Profile 918's greatest strength, which is recreate the feeling of the original environment where the recording took place – be it a small acoustic studio performance or live outdoor rock concert.

I often start testing with vocal and light classical music. High-resolution recordings let 918s disappear, leaving the acoustic of the recording venue and the notes produced within it sounding live and vibrant in your living room.

A poem, 'Little Dog's Day' read by Kim Catrall (Red Rose Music SACD RPM01), sounded convincing, like she was standing in the room in front of me. From the same album, the voice of Shane Catrall in 'Twenty-Third Psalm' was distinctive and clear. Japanese temple bells tinkled and jingled believably, cutting the air in my room. Chico Freeman's tenor sax had rich texture and atmospheric presence, bringing me closer to the recordings and the music making.

Norah Jones's 'Come Away with Me' (Blue Note SACD7243) was up next. I didn't know what to expect, but soon found Norah's voice silky smooth, warm, sexy and intimate, like she was singing only for me. The secret was in the spatiality - the soundstage was wide open and three dimensional like few other floorstanders at the price.

Frederic Chopin 'Reminiscences' (LINN SACD ckd248 ) was next in my player. I was impressed yet again by scale of grand piano and airy acoustics of studio. I could tell exactly how far the piano was from the walls, and was even getting information about ceiling. The Focal Profile 918 is a very informative and revealing speaker. Indeed, mainly

*"an intoxicating blend of sophisticated sound, build and uncompromising component quality..."*

thanks to its detailed, refined tweeter and transparent, free of coloration, neutral midband.

Highly demanding recordings like Eric Clapton's 'Unplugged' (Reprise CD 9362) sounded surprisingly good overall. I noticed that acoustic guitars were articulate and sensibly separated from the rest, giving real insight about the musicians' playing skills.

'BluesQuest' (Audioquest SACD1052) is another great sounding recording. 'One Good Woman' by Doug MacLeod has plenty of low, powerful bass. Playing this track several times via the Profile 918s, I found that these speakers aren't capable of truly low bass; they won't hit 30Hz with the power and authority of more expensive floorstanders. But what they do do, they do brilliantly – which is to go low enough with most audiophile recordings, and start and stop where and when they should.

**CONCLUSION**

I really enjoyed these loudspeakers; both for what they are and what they can be. Spend some time building your system around

them, cable matching and positioning carefully, and you have an extremely capable pair of large floorstanders. Trouble is, at this price, there's no shortage of rivals – not least Spondor's S8e (which are virtually the same price and size), and Mission's e82 (similar size, a few hundred quid cheaper). Sonically, the Spondors are super smooth, svelte and soft (in a pleasant way) and the Missions are grippy, upfront and engaging, while the Focal Profile 918 lies somewhere in-between – which will be an appealing mix for many.

I felt these are extremely capable loudspeakers which really reward effort on the listener's part. Driven by my own YBA Passion 300 amplification, with Townshend Isolda

DCT cables, I personally felt hard pressed to find a better box at the price, combining as they do such an intoxicating blend of sophisticated sound, build and uncompromising component quality. Power them from a smooth, high resolution source and you will be rewarded with a very classy sound indeed.

**VERDICT** ●●●●£

The seductive blend of powerful sound and sharp styling makes them an essential audition.

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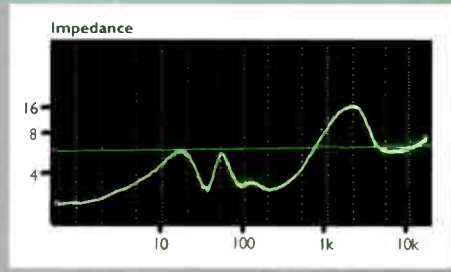
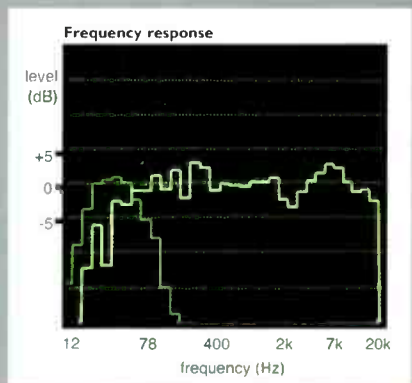
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**MEASURED PERFORMANCE**

The Profile 918 has an uneven frequency response across the audio band, for differing reasons. There's an effect at 300Hz that introduces a degree of peaking and unevenness, likely due to integration difficulties between the lower frequency drive units. Low frequency output below this level is a little depressed by a few dB, suggesting some midband forwardness. Output is smooth across the midband, but rises a little toward the upper limit of the bass/midrange unit then cuts off sharply at 2.5kHz. The cut off is too sharp and integration with the tweeter poor, producing an upper midrange dip in the response. The tweeter peaks at 6.3kHz and this is likely to be audible as brightness.

The loudspeaker's impedance at low frequencies hovers around a low value of 4ohms. The measured impedance was exactly 4ohms, but impedance rises steeply above 200Hz, where the load becomes reactive. As a load the Profile will be demanding as a result. Not unexpectedly, it hence has good voltage sensitivity of 89dB for one nominal watt (2.8V) of input.

The Profile has a somewhat ragged response and will have a characteristic sound. It does, however, possess a reasonably flat trend so should seem decently balanced. NK



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## David Price talks to Dominic Baker, Focal UK General Manager (and ex-Hi-Fi World editor) about the art of getting the best sound per pound from loudspeakers...

### DP: IS IT EASIER TO DESIGN 'STATEMENT' HIGH END PRODUCTS, OR 'AFFORDABLE' ONES?

DB: I wouldn't say that one was easier than the other, but you do approach them in completely different ways. A 'statement' product, such as the Focal Grande Utopia Be, is the result of many years of research into materials and technologies.

At the affordable end of the market things are quite different. It's about finding that perfect balance of the technologies and materials you have available to you to make the least compromise possible.

### HOW DO YOU COST THE COMPONENTS?

It's about keeping things in balance. Designing a product is basically navigating through a long chain of compromises. One badly chosen compromise at the beginning of the process will cost you all the way down the line and the result will be average, at best. I could use a fabulously expensive crossover capacitor that had ultimate sound, but if this meant making a compromise to the driver, then the extra detail the capacitor is supplying to the driver would be lost. Conversely, a high end driver fed by a crossover incapable of resolving the level of detail the driver is capable of would be equally wasteful.

Spend a little extra on a tweeter that has a better diaphragm material (lower colouration) and a lower resonant frequency. Used within the same loudspeaker as one using a lesser tweeter and the differences will be minimal. Now, re-tune the crossover frequency a little lower to make use of its wider bandwidth and beaming effects from the upper midrange will be reduced, increasing dispersion and giving a more open and natural midrange. To capitalise on the extra detail that the new tweeter is capable of, spend a little more on the crossover components and the cable and feed it more detail as well. The overall effect will be a dramatic improvement.

### HOW MUCH DOES LISTENING PLAY A PART?

We listen to absolutely everything that has an effect on the sound. This is where Focal's approach of building everything in-house is especially powerful. We're not captive to a drive unit supplier, so will devote as much

time listening to rubber compounds used in surrounds and the effects different glues have on the interface between the voice coil and cone as crossover components. Maybe there are loudspeaker manufacturers out there who actually listen to the types of metals they use for their spikes; I would suggest that buying in their drivers from 3rd parties has allowed them this luxury of this time.

As the product nears completion, selected world distributors who have what we consider to be an experienced ear as well as some trusted dealers and final customers will also be invited to listen. The difficult task for the engineer is to constantly analyse all of these opinions to evolve the product along the right direction until, hopefully, we strike a balance.

### WHY DO YOU USE PARTICULAR MATERIALS?

Sensible use of materials is key to loudspeaker design. The most important materials are those used for the diaphragms of the drive units, that's why we develop so many of them ourselves; glass and Kevlar sandwich cones, polyglass cones, AlMg tweeter diaphragms, Beryllium, etc. These diaphragm materials directly influence the sound and drive many of the engineering choices within a product. It's about picking the best material for the job, regardless of its label as a 'hi-tech' material or not. A good example of this is the paper cone, which we still use for our entry-level products, albeit with a fine coating of hollow glass spheres which produces a slightly brighter, clearer tone. Today paper cones are among the most expensive to make (labour intensive) and difficult to market; regarded as cheap and low tech. Yet paper has wonderful acoustic properties, being stiffer than plastics, aluminium, glass fibre and Kevlar cones of the same weight.

### WHY DO YOU STILL MANUFACTURE IN FRANCE?

It's not so much about the country where we are based, but the control that in-house manufacturing brings. I'll give you an example: if we outsourced drivers, I'd have to send a spec. to my supplier and wait around 3 weeks to see the samples. They wouldn't be perfect first time, so I'd have to send a list of modifications required and wait for a further 3 weeks. The product has to be finalised at some point and commer-

cialised, so perhaps I'd have time to repeat this process three times and then settle for what I had.

Compare this to our way of developing a driver using in-house design and build. I send the spec for a new cone to our cone plant (about 5kms from the main site) at the end of the day and the next morning stop by to pick them up. I arrive at the lab and after an hour or so, have assembled a pair of drivers. Before lunch, they will be measured and characterised. After lunch, they are screwed into the cabinet, measured and a crossover developed. Mid afternoon we are already listening, but decide that a change to the cone damping factor is required. I write up the new specs and send it through to the cone plant and the process repeats. In the nine weeks I would have spent to get just 3 sample steps with an outside supplier, I would have been able to build 45 in-house drivers, therefore fine tuning them to a degree simply not possible due to the time factor of the other route. This is key to loudspeakers; the difference between an average loudspeaker and one that is truly exceptional is all in those last few percent.





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# Sizing Up

**Where did all the big bangers go? And will they ever return? Perhaps, think Noel Keywood.**

**"M**ost of all I want good, tight bass that I can feel", or words to that affect. It's a common wish expressed by *Hi-Fi World* readers, but it isn't a common experience - in the home at least. And it isn't easy to produce either. In fact, reading about deep bass reproduction there's quite a lot of confusion about what is even needed to achieve good bass quality. The common view that there's nothing like a good big loudspeaker for proper bass is very true, yet these days an unobtrusive subwoofer coupled with tiny satellites appears to be able to do a very similar job, suggesting this old adage is out of date, overtaken by modern technology. So is a subwoofer really as good as two big boxes? Are big bangers part of a bygone era, rendered obsolete by today's design techniques and technologies?

In outline it would seem so. Musical instruments reach down to 40Hz, yet these days there is plenty of information lower down the frequency range. Our analysis of a modern CDs shows this clearly. It comes from closely miked percussion, such as kick drum, kettle drum and such like. Synthesisers play a big part too, especially when used to generate 'events', such as you get on *Dark Side of the Moon*. All this produces copious amounts of low frequency energy on many CDs, that in spectral content can reach down to 20Hz or lower.

There's little to prevent any subwoofer from producing

frequencies this low. Bass unit cones have no difficulty in cycling in and out at 5Hz, 10Hz or 20Hz, and modern solid-state amplifiers commonly work down to 3Hz or thereabouts. No problems here then. Digitally coding a low frequency signal is a doddle; CD has always reached down to 5Hz and our tests show that nowadays players often get down to 2Hz.

So we have the technology to go low, right down to earthquake frequencies where items physically start to shake and move in fact. Why then is it so difficult to get good bass from a loudspeaker?

Both the ear and most listening rooms present difficulties. In the case of the ear, it gets progressively less able to discern low frequencies as sound, instead starting to perceive them as vibration. The break point is around 20Hz. Much below this you feel bass, rather than hear it. There's no shortage of research on this, as it was once thought low frequency sound could be used as a weapon against enemy troops. Lining up Tannoy Westminsters to saturate enemy positions would have been an interesting idea. The body's internal organs start to vibrate at 5Hz or

so. Happily hi-fi isn't known to be life threatening in spite of this. But because the ear is insensitive at low frequencies large amounts of acoustic power must be produced if bass is to be perceived either as sound or vibration. That's one reason why really small subwoofers don't exist.

The other reason is the average listening room. It too progressively attenuates deep bass, meaning more and more power must be put in if powerful bass events such as a



**JBL's flagship loudspeaker, the K2. Beneath treble and midrange horns, sits a massive 15in bass driver, to give demolition bass.**

kettle drum strike, are to be heard in their full glory. A 15ft-long room - and by this I mean the greatest dimension is 15ft - reaches down to 36Hz, for example. This is pretty convenient, because it means most rooms reach down low enough to reproduce the bottom end of the musical spectrum. Below this frequency sound will suffer progressive attenuation, meaning power must be pumped in if bass level is to be maintained.

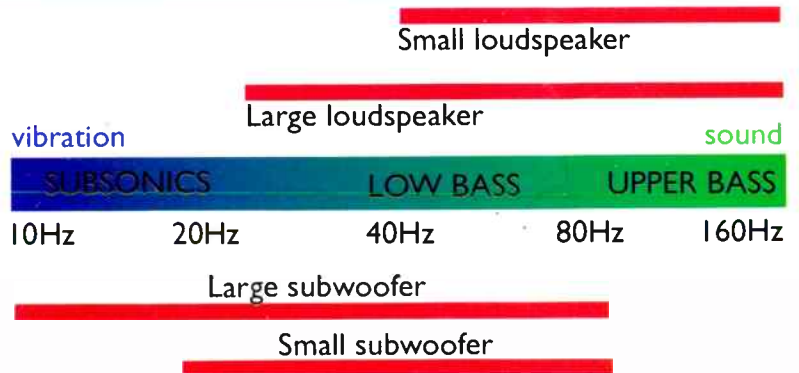
Because of these factors energising the average room below 30Hz or thereabouts, according to room size, requires large amounts of power. A typical subwoofer as a result uses a purpose built bass driver with a long throw (cone travel), so it can move a large volume of air. The whole assembly must be rugged if it isn't to burn out or blow up.



**A typical music energy spectrum on CD. This analysis runs from 6Hz up to 10kHz. There is strong energy down to 20Hz.**

This approach does produce deep bass, often of considerable strength. However, a single high power 8in subwoofer drive unit must work hard if it is to make itself heard, as it has half the cone area of two 8in bass units, assuming it is used to extend the bass of two conventional hi-fi loudspeakers. At any one frequency, if it is to move the same volume of air, it must travel twice as far, being forced to do so by the driving amplifier. This generates distortion, resulting in an effect termed "bass doubling" where energy in the fundamental is transferred to the second harmonic at twice the frequency. A 40Hz note then loses some of its power into an 80Hz note. This saps bass power, as the ear perceives it, and lightens timbre.

A big banger might seem both simple and clumsy by way of contrast,



**How low they go. Our chart shows how the differing bass performances of large and small loudspeakers, as well as subwoofers. The latter usually have a fixed upper limit of 100Hz.**

a domestic eyesore that yields no better result. After all, Tannoy tell us the Yorkminster reaches down to 23Hz and the Westminster down to 18Hz. Yet REL specify their compact Storm subwoofer as able to reach 18Hz (-3dB), whilst the Studio III reaches down to 9Hz. If ever there was evidence to show a big banger is technologically outdated this is surely it. But the case against them isn't so simple.

The ability of a bass unit to effectively couple into the air load and drive it with minimal distortion is related to cone surface area - and here the picture starts to change. A classic 12in bass unit boasts no less 452 square inches of cone area against 201 square inches of a single 8in subwoofer. To the eye, it may look 50% larger, but to the air it is 125% larger. With two of them you have over 900 square inches, or 4.5 times as much surface area. To move the same volume of air at any frequency their cones will move one quarter the distance of an 8in subwoofer. Because the conversion efficiency of a large drive unit is high, less power is required to do this as well. Result? Much lower distortion and more control of the air load in a room so, subjectively, when the cone stops, the air in the room stops. This is how it sounds with a well designed big loudspeaker and the Westminster, with its large horn mouth, is a prime example.

The feeling that a large loudspeaker is controlling the room, rather than the other way around, isn't mistaken. Imagine that a whole wall of your listening room moved in and out pistonically, to drive the air in the room. The air would have no choice but to follow. Surface area is the key to good bass quality and this is why big bangers deliver a bass quality that all other techniques, to date, cannot match. The 12in or 15in

bass units in a big banger might not be as large as a wall that moves, but they are a lot larger than the average 8in bass unit - and subjectively the difference is heard as taut sounding bass.

So why aren't big loudspeakers more common? Most obviously size, as big loudspeakers are, these days, perceived to be intrusive visually and physically. Then there's cost of course. And there are some technical drawbacks. Wide front baffles support surface waves and, of the old type at least, produce edge diffraction. By the 1970s research had shown this made stereo images sound vague and diffuse. Companies like KEF and Leak then removed midrange and treble units from the front baffle, mounting



**Why do things by halves? Where others are content to offer just one 15in bass unit, Cerwin Vega fit two!**



them in pods instead, often featuring curved edges to minimise edge diffraction.

Also at this time efficient design equations were developed by Thiele and Small for manipulating loudspeaker design parameters. As computers gained power during the late 1980s design programmes such as LEAP emerged, allowing all the many parameters to be adjusted quickly and easily, without sawing or soldering, to produce prototypes. This made optimal cabinet design a relatively easy business. Up to this time large cabinet volume was generally considered necessary for deep bass. These programmes showed, however, that a small loudspeaker could get down to the magic 40Hz figure too, when using the right parameters. This has encouraged manufacturers to believe small loudspeakers are all that's needed for true high fidelity.

However, these loudspeaker design programmes also show that a large bass unit with a low resonant frequency, when mounted in a properly proportioned big cabinet, reaches down to 25Hz or so and rolls off more slowly in the subsonic region below 20Hz. Large loudspeakers do therefore better energise a room at low frequencies. They also accept and radiate large amounts of acoustic power, with little distortion. All of which explains why they can develop the powerful, yet controlled bass so many people crave, but are unable to find.

Large cabinets don't have to be intrusive. Modern floorstanders, if kept forward from a rear wall as advised, render an area around and behind them almost unusable. They may have a small footprint, but they still consume floor space. A large cabinet placed against a wall can intrude less. The narrow dispersion pattern of midrange and treble horns of the sort used by JBL, for example, ensures stereo imaging is unaffected by wall placement. This sort of loudspeaker is seen in the USA, but not the UK. Here, horns are treated with suspicion because they commonly sound coarse. This is caused by throat effects that are understood and curable. It need not be the case, even if it commonly is. JBL's premiere loudspeaker, the huge K2, uses a 15in bass unit - no less - working in conjunction with high fidelity midrange and treble horns. Here is another way of engineering a big banger so that it doesn't unduly intrude into the room.

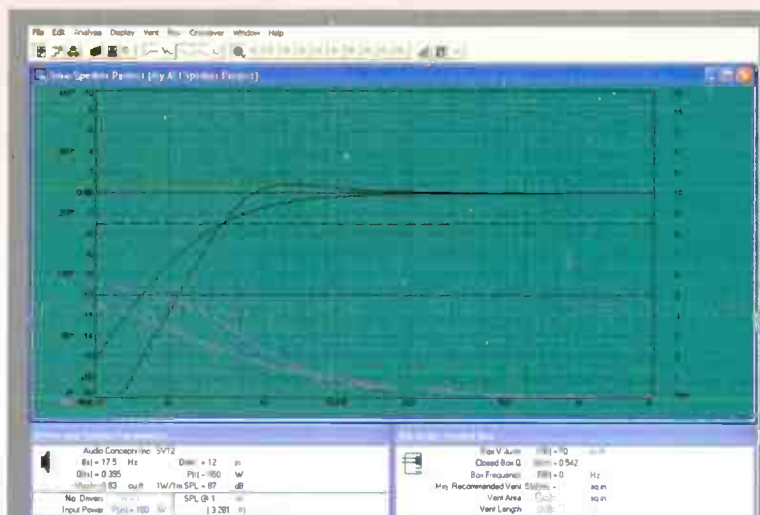
Tannoy also have a Dimension range where the big Duals are put into smaller cabinets with

contemporary styling. The TD12 is effectively a 12in bass unit fitted with a midrange / treble horn and a super tweeter on top. With a cabinet volume of 110 litres it isn't impossibly large either.

Whether a big loudspeaker can ever be visually appealing is open to question. Probably not until someone designs one we will ever know. Modern materials, including moulded plastics, could bring intriguing and

pleasing shape to what can alternatively pass as a broom cupboard. The cost of a large speaker can be tamed by production in China, where so many loudspeakers are made nowadays.

All in all then, there are still good arguments in favour of big bangers. They may be out of fashion, but that's not to say out of contention. If you want good tight bass that you can feel, this is the best way to get it.



#### TRY IT YOURSELF

Running a loudspeaker design programme is enough to convince you a big banger is unnecessary. You can do it. There are many free tryouts on the Net these days and they give a good idea of what a Thiele Small parameter based programme makes of the whole thing. Go to [www.true-audio.com](http://www.true-audio.com) and you can download a free trial version of Winspeakerz. It comes with 10in, 12in and 18in bass drivers and is as easy as it gets to manipulate. I chose a 12in bass unit and asked Winspeakerz to run a frequency response of it in a small 2cu ft box, and then a large 10cu ft. You can see the results here. In the small box this unit peaks +1dB at 60Hz; in the large box it rolls down steadily below 100Hz. Of the two the small box would, subjectively, give strong bass whilst the big box would be bass light, contrary to expectation.

That's the view you get by casually entering parameters into a computer design programme. It's good news to loudspeaker manufacturers, because it shows bass can be extracted from small boxes. They are cheap and easy to make, to package and transport. They are easy to store and demonstrate. They fit most people's homes too, so why on

earth bother with a big loudspeaker? In truth the loudspeaker industry sees little need to produce large loudspeakers and in any case there's limited understanding of how they interact with the room load, complicated by the fact that all rooms are different.

Under these conditions, which is how things stand today, it is hardly surprising big loudspeakers are out of fashion. Few designers are experienced enough to know what a properly designed large loudspeaker sounds like, and as they dwindle away this becomes a self sustaining process.

To make a 200 litre cabinet (7 cu ft) work properly the bass unit's parameters must be adjusted to suit the box, in order to get a required frequency response, usually one that extends down smoothly. Also shown in the Winspeakerz analysis is phase response and group delay, both of which improve as the box gets larger and response extends downward.

So the indicators for better performance are there. A good big loudspeaker calculates out well. It's just that a small loudspeaker looks good enough when you run a standard computer design programme. This has contributed to the demise of the big loudspeaker.

# Northern Sound & Vision 2006

**Martin Wolszczak travels to Manchester, where he finds plenty of interesting new products at the popular Northern Sound & Vision Show.**



**N**orthern Sound & Vision 2006 took place in Manchester at Radisson SAS Airport Hotel on 28-29 January. Launched in 1999, it's now in its eighth successful year and uniquely covered once again all home entertainment (media, including Home Cinema, In-car audio, custom install, Multiroom, PC audio and Accessories and music software), as well as high-end audio - my principal interest at the show. The exhibition's emphasis has always been on quality products, internationally sourced, including the UK. It's also proactive in its support of small business and has special programs to help them exhibit, broadening variety.

I raced up early Sunday morning by car from London. Hi-Fi shows are a great interest of mine as I enjoy speaking to the people behind the products. The motorways from London were quiet in the early morning and I arrived on a bright, sunny day.

There were many interesting



**JBL Project 1400 Array speaker, with 14in bass plus midrange and treble horns!**



**Wilson Audio Sophia loudspeaker**

exhibits. One of them was Metropolis Music. They had just announced the UK's first complete range of DK AUDIO products, designed in the US and offering incredible performance and value for money. Over the last few years DK AUDIO has gained a worldwide reputation with many reviewers as performing well outside their price points.

In the same room I found American high-end products, both valve and solid-state pre and power amps from BALANCED AUDIO TECHNOLOGY (£2,000-£20,000) and also one of the most expensive amplifiers in the world today, the BOULDER 2050 monoblock amplifier at a cool £50,000. There were also awesome products from HOVLAND, ACOUSTIC ZEN CABLES and one of the priciest loudspeakers out there KHARMA GRAND EXQUISITE, prices at a mere £145,000.

Metropolis Music was also showing the final finished version of the LUMLEY STRATOSPHERE turntable, price £15,000. This well known product was launched about twelve years ago and copied by others. It has had some significant improvements and now represents a true reference turntable at it's price point. Unfortunately, I didn't get a chance to give it a quick audition, simply because there were too many people waiting.

On the same floor I popped in to room 414 which was occupied by Surrey-based PINSH AUDIO. PINSH specialises in hybrid cone/ribbon audiophile loudspeakers and stand-alone super, ultra and hyper tweeters. They told me all their ribbons are designed and built in-house. They have been engaged in audio research for 25 years and have developed their own ribbon technology during the past 21 years. There were current Pinsh hybrid

models 1.2 (£1,500) and 2.1 (£2,000) in the room. Astonishingly, they will introduce, later on this year, first full range ribbon loudspeaker in the world.

All Pinsh loudspeakers were powered by ICON AUDIO valve pre and power amplifiers. ICON AUDIO is a small company based in Leicester, UK. They specialise in building great-looking, but inexpensive pre and

**Pinsh ribbon loudspeaker, with their forthcoming full range unit behind...**



power amps as well as integrated valve amplifiers (£200 passive pre amp to £2,000 for pair power monoblocks). Manchester 2006 has seen the launch of their new "flagship" speakers made for valves, the MFVI costing around £2,000.

Further down the corridor was one of Huntingdon's finest, reborn AUDIOLAB. They are now part of the International Audio Group and are back with the original product



**Our stand at Manchester, a great place for feedback from Northern readers. Thanks to all those who visited us...**

line-up that made the brand so famous during 1980s and 1990s. A strong two channel range is soon to be added with an equally impressive multichannel offering. The original philosophy is back: unbeatable value for money, integrity of design, electrifying performance and robust build quality that once earned the brand an unshakable reputation for reliability. If some readers are new to genuine hi-fi then Audiolab ought to be an essential part of the audition list.

Moving on, I discovered yet another room filled with classic products of analogue specialisation. Together with FUNK and FUNK VECTOR turntables, The Funk Firm has demonstrated full LINN modification kit - The FUNK LINK VECTOR Achromat and Achroplat. THE PINK TRIANGLE Anniversary Vector modification was also in the room, as well as classic British monitors, modified SPENDOR BC1s powered by a 1980s Class A amplifier.

I was running out of time, so I quickly rushed downstairs. Leaving the lift I heard great sounds coming from the hotel's Vienna room, occupied by Midland Audio X-Change. I wasn't wrong about it. They had WILSON AUDIO loudspeakers SOPHIA 2 (£10,000) powered by AUDIO RESEARCH valve monoblocks VS110 (£10,000) and valve reference preamp REF-3 (£10,000), sourced from a CD3 MkII (£4,000) designed by Bill Johnson himself. I asked them to play a



**MBL power amplifier, one of the largest ever!**

couple of tracks from my CD; the sound was superb. It was everything you would expect from this kind of system: holographic soundstage, sweet detailed treble, open realistic midrange and deep, controlled, muscular bass.

In the same room I found MARTIN LOGAN's latest hybrid active subwoofer electrostatics called SUMMIT powered from JADIS. They played Pink Floyd and Dire Straits but I didn't take any notes down - I just enjoyed it!

Nearby, in room 219, JM LAB

FOCAL was demonstrating two exciting new loudspeakers from their latest "ELECTRA BE" range, the stand mounted 1007 Be (£2,300) and the floor standing 1027 Be (£4,000). Both these speakers feature FOCAL's revolutionary BERYLLIUM tweeters, with a sound and build quality never seen before at this price point. 1027s Be were accompanied by SPECTRAL amplifiers and the newest integrated SACD/CD universal player from dCS, model P81 (£7,000). P81 has got on board interesting upsampling to DSD signal layout.

The most significant event of 2006 Northern Sound & Vision was for many a presentation and demonstration by Sound Venture, demo'ing German top high-end MBL, with the most expensive audio



**MBL's top loudspeaker, the astounding 101E Radialstrahler, price £28,000. That's a radiating sphere you see on top!**

cablings in the world today, HEAVENS GATE. Sound Venture has been exporting MBL products around the globe for many years and now they are available through them in the UK for first time.

MBL and HEAVENS GATE were at the Beijing Suite on a visit that was fully equipped: 1621A CD transport, 1611E D/A converter, 6010D preamplifier, 9080s mono power amps, 101E Radialstrahler 'speakers, Ultra Silence Series audio cables: total worth £250,000. The revolutionary construction of MBL speakers was capable of producing three-dimensional sound that reflected the acoustic nature of real instruments. Like musical instruments, the "Radialstrahler" radiates the sound waves omnidirectionally - not just in one direction like conventional speakers.

On my way out I dived into CHORD ELECTRONICS room for a quick demo of Vinyl versus CD. LP deck was AVID ACUTUS fitted with SME Series V and LYRA



**A rack of Chord products, all machined from solid aluminium.**

ARGO cartridge (£9,000), up against CHORD DAC 64/Blu (£6,500) via SONUS FABER Cremona loudspeakers. Both presentations were equally superb.

Before I left the building I spotted downstairs a few trade stands with new as well as reduced ex-demo audio equipment (KRELL 400xi - £1,600, Musical Fidelity SACD player - £1,700). VIVANTE PRODUCTIONS was selling the very best in Vinyl, SACD, Gold CD, HDCD and DUAL DISC for a half the original price. Specialist items like this are very popular at shows, as you get to see the goods, unlike mail order and internet transactions.

I saw many systems sourced from LP decks, underlining the popularity of vinyl today.

After two short but busy days the show closed Sunday evening. I plunged into the local rush hour at 5pm on a dark winter's night to struggle home. It was well attended show and had a wide range of interesting products. The general atmosphere was friendly and relaxed too. It was an enjoyable visit; the only bad bit was the journey back!



**LPs on sale from Diverse and, around the corner, Vivante. A good source of latest pressings, as well as old and reissued classics.**

# One Love

**Who'd have thought it? Nineteen years after the Acoustic Energy AE1 mini-monitor hit the British market, it is back – pure, original and unsullied. David Price is smitten...**

**T**hings can't only get better. They often do, but don't for one minute think it's a done deal. In truth, as audio evolves, it gets different.

There's no doubt that progress is a wonderful thing - for some people. But the idea that the simple changing of the seasons means that the new is automatically superior to the old is fallacious.

Marketing men would have you believe otherwise of course, as would PR people, as would almost every manufacturer – so it's a brave thing indeed for Acoustic Energy to relaunch its original iconic mid-eighties mini monitor, practically identical down to the last nut and bolt, while its third generation offspring (the AE1 mk III) remains in production...

This is a testament to the company's mettle. They're a small operation; fifteen to twenty people I'm told. They have a large range of award winning loudspeakers, covering

A brave decision, because the problem with reheating an old lunch is that – in the cold light of day – people are apt to say that, actually it isn't quite as nice as they remembered it. Result: the wholesale destruction of a legend. Audio aficionados, apt to bore their friends off their barstools of an evening, can no longer wax lyrical about the greatness and perfection of an eighties legend – because now they can hear it in a modern setting, it's a trifle sourer than they thought...

Or what if the opposite happens, and the oldster turns out to comprehensively outclass the latest version, which has had thousands of hours of painstaking tuning to evolve it into the wonderful thing it supposedly is? Again, the company gets egg on its corporate face, and people wonder why they can't improve on an old thing that last did the rounds when Simon LeBon's shoulder pads were the size of the Clifton Suspension Bridge. See what I mean? Could this

context.

The nineteen seventies was a heavy decade, and speakers were big. We saw vast Wharfedales, KEFs, Leaks and IMFs (to name but a few) with untold numbers of drive units per box, invariably plonked on the floor – or if you were really serious, on a nice pair of spun chrome tripod stands with castors, so you could wheel them out on to the patio for fondue parties. They invariably came finished in a fetching teak wood veneer, which matched your chocolate brown carpets and curtains perfectly.

The eighties, of course, railed against all this, and suddenly diminutive Linn Kans, ProAc SuperTablettes and RCL Small Loudspeakers were the right things to hang on the end of your monster Exposure or Naim power amp. Big boxes became yesterday's news, along with brushed aluminium finished amplifiers and those terminally uncool record players. Real wood finishes fast went off the fashion map and black became *de rigueur*. The tiny, two way AE1 arrived in 1987, and caught the zeitgeist brilliantly. Epitomising the 'source direct, big amp and mini monitors' audiophile credo, it's fair to say that nothing captured the 'quintessence' of the decade better.

How did it sound? Well, whereas seventies speakers had been overblown, physical and – if truth be told – not a little slow, eighties speakers often seemed lightweight – sometimes anaemic – but blisteringly fast. In a bid to boost bass, many eighties audiophiles then invested thousands on massive transistor amplifiers that dimmed the lights when you switched them on. Not that you noticed, of course, because unless you left them on all the time, they sounded like breaking glass...

The reason for this was three fold. First, it was the early days of Compact Disc, and while the early eighties Philips machines were warm and fluffy, the later 16bit, 4 times

"one of the most musical loudspeakers I've ever heard, bar none..."

most bases. We've tried a good few and – by and large – we agree that they're serious, superbly engineered products designed by enthusiasts for enthusiasts. The fact that a sizeable amount of their sales goes to the pro audio sector speaks volumes, if you pardon the pun. So why on earth reheat their first ever loudspeaker, one that became a recognisable classic from the decade of Filofaxes, Ray Ban Wayfarers and Golf GTis? Why – because they could.

Acoustic Energy continues to offer parts support all their 'legacy products' (that's marketing speak for "old stuff"), and one day, around the water cooler I presume, one engineer mused to another about the possibility of putting all the AE1 bits back together and remanufacturing the entire loudspeaker. "Let's do it", came the answer.

be why Quad hasn't re-released the ESL57 or Sony the CD-P101?

So I'm sure I can speak for all audiophiles, when I say that we doff our hats to Acoustic Energy for faithfully recreating the original AE1 in its entirety. This takes guts. Even more respect is due for the fact that it's not the final bi-wirable run-out versions of the early nineties that they've recreated, but the very first monowire incarnation, warts'n'all. Guys, we are not worthy...

## THE STORY

For those who were doing altogether more important things in the eighties than following the vagaries of hi-fi fashion (listening to The Smiths, 'Going for it', crashing their flame red 911s into lamp posts, etc.), let me reintroduce the original Acoustic Energy AE1. First thought, a tiny bit of



oversampling (Philips TDA1541 chipset based) designs were 'a bit frisky in the upper mid' to say the least. Then there were the aforementioned amplifiers (Naim Audio, you know who you are), which were a tad 'brightly lit', and then – last but surely not least – was (cue fanfare!) metal drive units.

The eighties were when metal dome tweeters, and then metal mid/bass units, caught on in earnest. Yamaha had started the ball rolling with the NS1000 in 1973 of course, but it wasn't until the 1983 Celestion SL6 that the trend really hit the UK. Suddenly, everything you looked at had a metal dome tweeter, and then followed the metal mid-basses. Let's say that, given the partnering equipment of the day, it wasn't exactly a synergistic match made in heaven. Yours truly can remember countless eighties systems that sounded like a bag of nails being smashed against a sack of spanners – no wonder valves came back.

Now though, in today's hi-fi world populated with smooth, open tube amplification, surprisingly silky

Class D digital amps (who'd have thought it?) and lovely Bitstream CD spinners (which although not the most exciting listen around, are nothing if not well mannered), it's fascinating to revisit the original king of the miniature metal cones, the Acoustic Energy AE1, in all its small, minimalist, crackle black glory.

### THE TECHNOLOGY

At 295x180x255mm it's a small loudspeaker alright. Treble duties come care of a 25mm SEAS magnesium alloy dome, with a purposeful mesh grille in front. Below 3kHz, the Acoustic Energy designed and built 90mm ceramic sandwich aluminium alloy cone mid/bass driver takes over, via symmetrical third order crossover. This said drive unit ("woofer"), as they'd say back in the eighties) was designed by bass player extraordinaire Phil Jones.

Interestingly, it's a straight sided design spun from aluminium alloy with a graded thickness across its profile and then hard-anodised black on both sides. As the anodised layers take up one third of the cone's

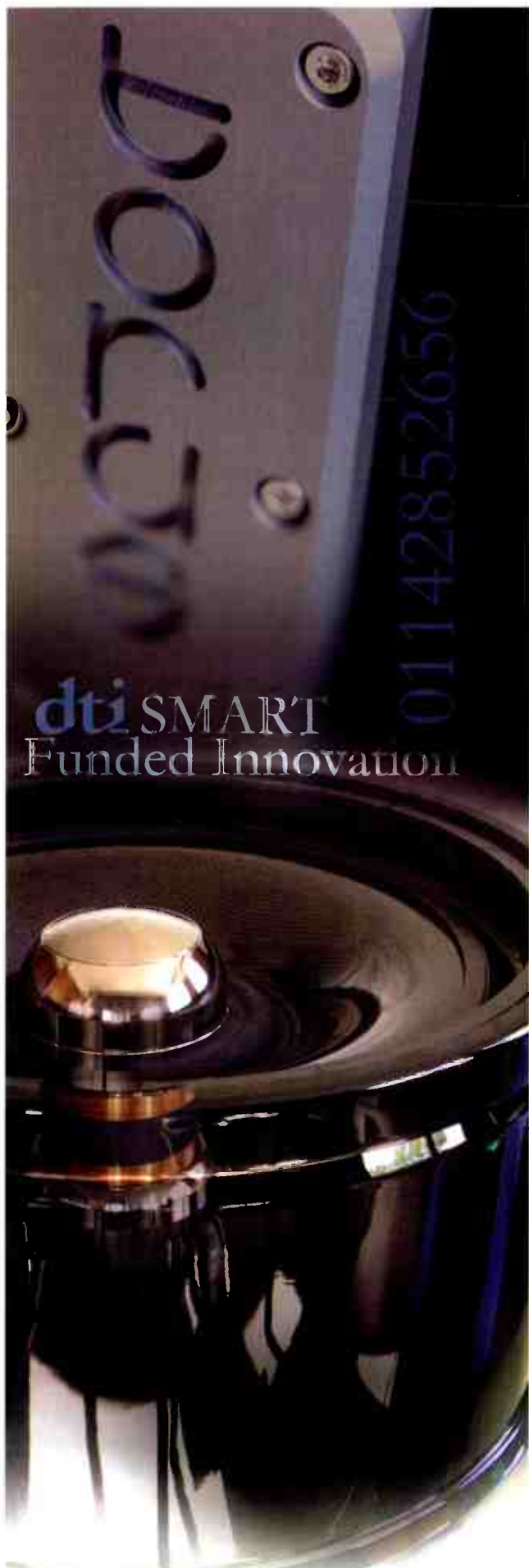
thickness, it's effectively a sandwich of alumina (aluminium oxide) and aluminium, which should be both stiffer and better damped than a pure metal. The dust cap is straight-sided and cone-shaped, glued to the cone which is driven by a 1" aluminium voice-coil former. Phil Jones's pro background meant that excellent heat dissipation was a key design priority.

The bass unit is reflex loaded by two frontally mounted 1" ports,

### POSITIONING

The original AE1 speaker stands are no longer available, but Acoustic Energy now recommend their modern equivalent, the Partington Dreadnought. These speakers need really heavy, mass loaded stands, affixed to the floor as firmly as possible, between 16 and 24" high – depending on your listening position. In my large listening room, I found they worked best about 10cm from my rear wall, about 3m apart, toed in very slightly.

profiled to reduce wind noise. The rear terminal panel mounted crossover is a complex affair, a third-order Butterworth, 18dB/octave high-pass leg and a 24dB/octave low-pass leg with a phase-compensating network. Acoustic Energy says it is



Wilson benesch  
The Future is Carbon

First dCS gave access to their legendary CD replay in one box at one quarter the price. Now comes the two-box version!

## Two are better than one

Most opinion – including the US **STEREOPHILE** magazine – rates the three- and four-box dCS CD/SACD players as the best in the world.

dCS re-packaged their **GROUND-BREAKING TECHNOLOGY** into the slim one-box £6.5k P8i with remarkable results.

For the new two-box player the design team were told not to limit performance within the £11k price – if it embarrasses the big system “that just sets us a new challenge”.

All dCS machines play SACDs and CDs and **UPSAMPLE CDs** to DSD, the format of SACD, for greater “ambience” and presence.

Higher performance with the two-box player comes from better power supplies, an Elgar family D/A circuit and enhanced WordClock.

Digital inputs allow for superb D/A conversion of other digital sources, eg DVD with optional upsampling to DSD. Integrate the player with a home theatre for stunning sound.

We always like to use the **DIGITAL VOLUME CONTROL** and connect directly to the power amp for the greatest realism and dynamics.

Your dCS investment is protected with one of the best **UPGRADE SCHEMES**. Software update is from a dCS CD and hardware upgrade is via part-exchange.

Customers say we make some of the **BEST SOUNDS** they have ever heard, so you know we can do the same in your home. Our advice will take account of your best components and guide you where change is needed, in stages you can afford.

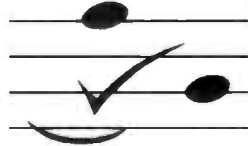
You **AVOID EXPENSIVE MISTAKES**, enjoy music along the way and save money in the long run.

**JUST LISTEN AND YOU’LL KNOW**

**CD:** ACCUSTIC ARTS, AUDIO SYNTHESIS, BEL CANTO, dCS (ELGAR, DELIUS, PURCELL, VERDI, VERONA, P8i), STELLO, WADIA. **VINYL:** AVID, BASIS, CLEARAUDIO, DNM, GRAHAM, THE GROOVE, LEHMANN, MICHELL, ORIGIN LIVE, SUMIKO BLUE POINT SPECIAL, TRANSFIGURATION. **TUNERS:** MAGNUM DYNALAB. **AMPLIFIERS:** BEL CANTO, CAT, DK DESIGN, DNM, GAMUT, HOVLAND, SONNETEER, STELLO. **LOUDSPEAKERS:** AUDIO PHYSIC, DALI, ETHOS, NEAT, TOTEM. **CABLES:** ARGENTO, CHORD Co., DNM, NORDOST, VERTEX AQ. ETC. **MAINS:** Vertex AQ. **SUPPORTS:** ARCICI, STANDS UNIQUE, VERTEX AQ

The  
Right  
Note

*Music in the home*



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hand soldered by the same person who did the originals, all those years ago. The low-pass section uses iron-dusted-core inductors, the high-pass air-cored coils, both with low-loss polyester capacitors. The cabinet was no less innovative in its day, a heavy 8kg and dead affair made from 22mm MDF, with a concrete lining to damp out resonances. Finish is excellent, by nineteen eighties standards.

## SOUND QUALITY

Yes, it's all true what they said about the original AE1. It's bracing, engaging, uplifting and musical in a way I haven't heard for a long, long time. This is one of the most musical loudspeakers I've ever heard, bar none. It sounds like it's pumped up full of caffeine; intense, full of vim and brio. It just romps along, no matter what you play. Even the staid seventies pop-rock sensibilities of Fleetwood Mac's 'Don't Stop' (on vinyl), with its laid back, louche, 'seventies-supergroup-tries to do an uptempo number' feel suddenly becomes infused with pace, power and passion. It's like they started listening to The Undertones, or something.

Put on Chic's 'Le Freak' and you're glued to your seat; it's riveting. The bass is fast and lithe and just runs away; whereas most loudspeakers play bass lines about half a minute behind the midband, the AE seems to start with the bass (always bang on time) and work upwards. There is a vast amount of information bubbling out everywhere; it's like there's too much music and not enough time to experience it. It's a fast loudspeaker, alright.

Switch to some classic analogue electronica in the shape of Kraftwerk's 'Computerwelt' and these speakers are again in their element; a massively detailed midband that's three dimensional, dynamic and engaging like almost nothing I ever heard. They're not electrostatic-like in their even-handedness, but still have a really clean, clear, 'window on the world' sensibility that throws elements of mix out at you with such ease that you wonder why certain other loudspeakers at ten times the price can't come close.

Move to 'Best of My Love' by The Emotions and again it's a riot of rhythm; there's so much pace, and underpinning this is a sense that the song is going somewhere; it has a start, middle and an end and it's all heading in the right direction, at a dizzying rate. The AE1s chomp at the bit; every hit of the snare drum sounds like the drummer really meant it, every pause is dramatic and arresting, every tiny dynamic accent

seems like thunder.

Coming from the massive Martin Logan Summits – in their way one of the best loudspeakers around – the prospect of living with these dinky boxes hadn't filled me with awe, but the practice did. I sat transfixed, wondering how they managed to up the octane rating of every song they played by at least three stars. Whereas the MLs were so even, so accurate, so finessed, the AEs just threw themselves into the groove, making the MLs seem lifeless and disinterested. Their enthusiasm is infectious, making you want to tear through your music collection, dusk till dawn...

So what's the catch? Well, these are small loudspeakers, and so you will not get capacious bass. AE say it's -3dB at 70Hz [see MEASURED PERFORMANCE], and I'd say that's a tad optimistic. I don't care what eighties audiophiles used to say about how you could get serious bass from mini monitors if you used a Linn LP12 and a serious Naim/Exposure amp – these speakers won't shift large amounts of air. I tried them with the superb Lyngdorf Audio SDA2175 250W Class D power amp, and a World Audio K5881 20W valve amplifier, and on neither occasion did the AE1s sound anything but a physically small loudspeaker. But what amazed me was that everything else was so right, that I simply didn't care...

Actually, the AE1 Classics proved a surprisingly easy load; my 20W tube amp went puzzlingly loud with no sense of strain, and the metal cones of these boxes really worked well with its slightly 'soft around the edges' sound', proving an amazingly synergistic mix. Even Acoustic Energy's own Will Fisher looked a little incredulous when he heard it at my house, as AE never dared to go with anything smaller than 70W of solid-state. Suitably warmed through (both amp and speakers), the AE1s proved extremely three dimensional, offering a wonderfully explicit stereo image and the ability to hang instruments back in the mix, and vocals forward.

## PHIL JONES

Phil Jones, designer of the AE1, now runs Phil Jones Bass, a pro audio amplifier and loudspeaker specialist with a staff of over 150 employees and a 100,000-sq. ft. facility dedicated to designing, manufacturing and marketing of loudspeakers and amplifiers for home, car and pro-audio markets. See [www.philjonesbass.com](http://www.philjonesbass.com)

The AE1 Classic's performance at the frequency extremes was surprising; that old school metal dome proved far more couth than I remember it (which says a lot about eighties ancillaries), and could almost sound quite silky when driven by excellent amplification. Bass was super supple, as stated, and tuneful too. Although it didn't go down low, it was utterly musically convincing and was so well integrated with the midband that I never yearned for large loudspeakers.

In absolute terms – compared to the very best cost-no-object designs, the AE1 lacks some finesse, has an ever so slightly rough upper mid with poor low level detail resolution, lacks air and space up top and obviously is challenged in the bass registers (in quantity, not quality). In these respects, the latest AE1 mkIII is recognisably superior, but what amazed me was the way the Classic was so musically inspiring that it made you completely forgive it its faults. So the AE1 Classic is neither "better" nor "worse" than its grandson, just different. I for one however, would have the Acoustic Energy AE1 Classic any day; it's dynamite.

## VERDICT

Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.

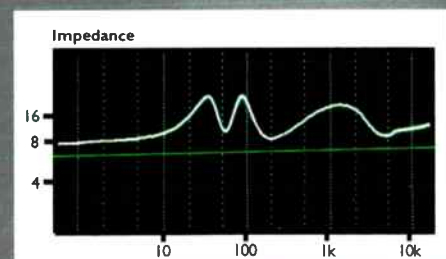
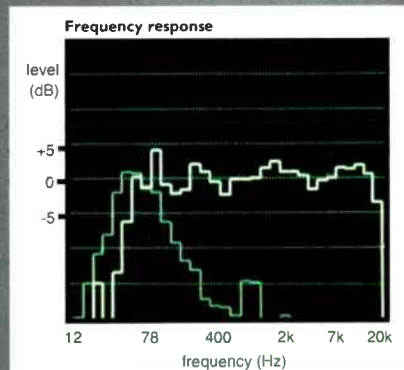
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## MEASURED PERFORMANCE

It's easier to make a small loudspeaker accurate than a large one, but all the same the AE1 in this form is pretty impressive under measurement. Our frequency response analysis clearly shows its output stretches from 50Hz all the way up to 20kHz. The small front ports augment output a little, but not much, being tuned to 55Hz. This loudspeaker won't have much deep bass, but what it has looks well damped and it should sound controlled.

Sensitivity was inevitably low, measuring 82dB, because of small size, but also because impedance measures a high 10ohms overall. Our impedance plot shows clearly why, as 8ohms is a minimum set by voice coil DCR (7.6ohms), to which the reactive component contributes. To go loud the AE1 will need a reasonably powerful amplifier, for voltage swing.

The AE1 is a tidy performer under measurement. Not surprising it had a good reputation. NK



# Glass Act

For those who have everything for their iPod, there's now something new to add to the shopping list in the shape of Goldster Audio's tiny Concertino tube amplifier. John May lives the luxury life...



Given that the new 5G iPod costs £299 or less, some might wonder why you'd want to spend upwards of £2,240 on a partnering amplifier (including the matching speakers)? Well, we do too, but we were intrigued by this dinky little bit of kit, and given this month's fascination with large loudspeakers, we thought we'd redress the balance, lest we be accused of being 'size-ist'...

The Concertino is a great visual match for the iPod (black models aside); stylistically you'd be forgiven for thinking it Italian in origin - evoking memories of some of the classic Vespa designs of the fifties and sixties, and more recently the Francis Francis A1 Espresso maker. I loved the white paint job and the stylish legend on the front of the amp. This really adds to the 'retro futuristic' look.

The 'dual box' nature of the amplifier is also visually arresting and makes a handsome change to the established norm. Fit and finish are generally to a high standard though I would have preferred the fixings to be painted white to better match their surroundings. Its footprint is small at only 180x 335x 160mm.

This is an unusual design as it's really a 'lifestyle' product for the well heeled, yet it has pretensions of being a properly designed piece of

esoteric hi-fi ostensibly designed for use with an iPod

[you can just imagine the 'product conception' meeting at Goldster that came up with that particular wheeze - Ed.]

This being the case there are only two inputs to be found on the rear panel, selected by means of a toggle switch. You have an input for an iPod (lead is supplied), as well as a CD player, and that's it - although of course other line level sources could be used in place of these two items if required. Speaker sockets on the rear are unusual as there's only two! These are tiny gold-plated four-way sockets with screw collars, made to accept the specially made three-core speaker cable which comes supplied.

Internally, construction is first rate, and a lesson in how to squeeze a quart into a pint pot. Parts quality is high with capacitors from Wima, laser-trimmed resistors, and the DIYer's current audio favourite the Silver-Mica capacitor. All valve bases are high quality ceramic types. The power transformer is a toroidal type, which should radiate less hum levels than usual - essential when it's positioned in close proximity to the amplifying circuit, as is the case here. This design uses triode valves

in a Class 'A' design, and is an anode follower, SRPP power triode design without overall negative feedback. Valves used are:

2 x ECL82 for pre and driver stage; 2 x 6AS7 G dual-power triode valve for the power stage (2x13w plate dissipation). The only disappointment was the rather rough action of the volume control.

The partnering loudspeakers are intriguing. They feature a 120mm full-range paper-coned driver per channel, in a front ported enclosure. The enclosure is attractively finished in the same white paint as the amplifier, and - like the amplifier - appears to be constructed from aluminium sheet rather than the oft used MDF or wood. The user is instructed to only use the supplied speakers with the amplifier, because each speaker contains an integrated transformer, and - in addition to this - the amplifier's frequency response has been 'adjusted' for use only with the supplied speakers. Can't help thinking this is a missed opportunity - I would have liked to hear what the amplifier was capable of with other speakers, but as the saying goes you can't have everything!

## SOUND QUALITY

First impressions came via its second line input, using my budget favourite





the Shanling

CD-T80 CD player fitted with RCA 5670 NOS valves. The Audio Concertino was placed atop a solid marble chopping board (a very effective and cheap tweak, this) atop four rubber feet to prevent any microphonics from vibrating the valves and colouring the sound. The speakers were placed atop a pair of target speaker stands spiked to some thick floor tiles.

I began putting the Audio Concertino through its paces using Wagner's 'Siegfried Idyll' conducted by Sir Adrian Boult. Initial impressions were of a delicate quality to strings in particular, and quite a bit of 'air' to the performance. There wasn't a hint of grain to the string tone that can afflict lesser designs. I did notice a rather 'cuppy', dry quality to string tone in particular though, which I put down to the use of paper cones in the drivers. There was a lack of upper treble that starved the music of some of its sparkle and bite. The sound didn't blossom out of the speakers like a similarly priced separates system would.

Imaging – as one might expect from a single driver speaker – was very good, and created a broad spectrum of sound, though there did seem to be a bit of a hole in the middle of the soundstage which created a peculiar kind of 'tunnel hearing' type effect. Moving the speakers a little closer together (about 90cm apart) and toeing them in by 15-20 degrees helped things here, too.

Dynamic ability was impressive and was reasonably successful in creating the illusion of a full orchestra there in front of you. Again things seemed a tad diffuse and a little tonally monochromatic in nature, but compared to just about every other 'all in one' system designed with the iPod in mind I

would wager it would prove to be a revelation.

Bass quality was surprising given the small dimensions of the speakers. If you closed your eyes you'd be forgiven for thinking of these as being at least twice their size. They provided a solid rendition of the menacing kettledrum rolls on Dawn and Siegfried's Rhine Journey from the same CD. Orchestral crescendos could have done with more sparkle and life to add to the drama however, and again the issue of the rather hefty price tag kept jumping into the back of my mind, but I've certainly heard a lot worse at – and above – this price band.

Bass again impressed on the track, 'Whatever, Whenever' from Groove Armada's 'Vertigo' CD. As before it was missing a little in the way of top-end sparkle, and involvement, but still got the feet tapping which was a good sign. Again the tonal palette was on the extremely dry side of neutral, and I found myself wondering what the amplifier would be capable of with a different pair of speakers but - due to the design – this wasn't possible alas. I found with this CD that it's pretty much essential to listen to these speakers with the cones at ear level. Moving up or down results in a dramatic closing in of the treble, and this should be borne in mind when auditioning.

Thinking that using a CD player with the Concertino was perhaps missing the point of its design, I changed source to my 3G 40GB iPod. I would imagine that those used to hearing Apple's little wonders via PC speakers or cheap headphones would find this a revelatory experience. Listening to Beck's 'Cold Brains' from a track compressed using Apple's Lossless Codec via iTunes resulted in a well mannered (but never boring) and tight presentation of this track. It wasn't quite as crisp a listen as I'm used to, but you wouldn't immediately associate the sound quality as coming from a portable player it sounded so good.

Subjectively I found the performance from the iPod via the Concertino to be preferable to my Shanling CD-T80 reference! Not what you'd expect at all. Having said that the Concertino has been

designed with the iPod in mind so perhaps some subtle voicing has been employed to better exploit the iPods potential? The iPod is generally regarded as having a weedy analogue output stage, but perhaps – for once – this worked in its favour creating a lighter sound, which was subjectively faster and more exciting a listen through the Goldster Audio Concertino system. Whatever the reason there definitely seemed to be a little more sparkle and 'life' to music played back on the iPod compared with the Shanling, highlighted by playing the same track back via both sources.

**CONCLUSION**

Despite its high-end price tag, I felt the Goldster Audio Concertino was best suited to its stated purpose – in providing high quality playback for an iPod. As a standalone system its sound quality was merely average compared to a similarly priced set of separates. I suspect however that it will find great success among well-heeled iPod users and gadget addicts, and there's no denying its supreme visual allure. For those that have £2,200 burning a hole in their pockets and own an iPod this may well prove to be an irresistible purchase, and I must confess I will be sad to see it go.



**VERDICT**

Superb design and build allied to excellent iPod sound makes this special, but only middling value for money by conventional hi-fi separates criteria.

**GOLDSTER AUDIO**  
**CONCERTINO** £2,240  
 Goldster Audio  
 +49 89 78749518  
 www.goldster-audio.com

- FOR**
- open vocal performance
  - good bass weight
  - striking looks

- AGAINST**
- dry sounding
  - expensive
  - cannot use other speakers

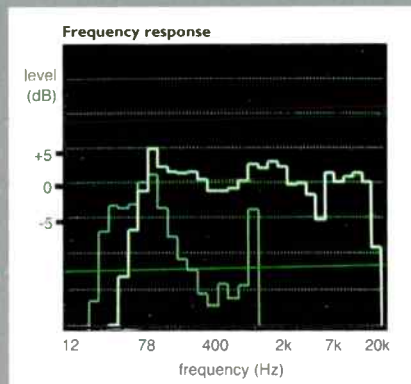
**MEASURED PERFORMANCE**

As the Concertino is a high impedance system with closed connectors, likely for safety as there are more volts than usual flying around, it wasn't easily possible to measure power output and suchlike from the amplifier. The system has a CD input, however, and when fed a pink noise test signal we got a suprisingly good result from the small, light, paper cone drive units, fitted with parasitic tweeters. In fact, they would shame many hi-fi loudspeakers, running from 63Hz up to 16kHz without much deviation from ideal. Our analysis shows the overall response trend is flat and - thankfully - there's no mid-range or treble peaking to make the sound sharp or unpleasant in a coarse sense.

Under test the small loudspeakers seemingly possessed little deep bass, as is to be expected perhaps, and this was due too

their sharp, fast cut-off below 63Hz. However, the port does produce a little output lower down than even this reasonably low limit.

The Concertinos measured well. They are accurate enough to reproduce music from an ipod faithfully, being plenty able to get the best from such a source, or a portable CD player. NK



# DE-LUX

In Japan, Tannoy Dual Concentrics are de rigueur for well heeled audiophiles – but what do they drive them with? Well, large high end transistor integrations like Luxman's L-505f are popular, and John May finds out why...



**W**hilst Japanese giants like Sony, TEAC, Pioneer *et al.* have all made some stunning stuff – the equal or better than anything else - when the fancy takes them, the fact that they also make plasma screens, Dictaphones and/or DVD players does not invest their brands with audiophile kudos, at least in the minds of those outside Japan who rarely see their statement products.

However, the Japanese hi-fi market is a huge one, and there is space aplenty for specialist manufacturers like Luxman. It's a small to medium sized company in Japanese hi-fi terms (although would be considered relatively large in Brit specialist standards - think Naim Audio), and has consistently produced interesting and highly competent products that always stand out from the crowd. Indeed, "Lux" has been around since 1925 [see LUX LIFE]. Also like Naim or Quad, Luxman engenders tremendous brand loyalty; customers keep coming back for more, and the secondhand resale residuals are high.

The Luxman L-505f is precisely the sort of thing well heeled Japanese audiophiles aspire to it. It's actually

the baby of the 'f' range, which also consists of the L-507f and L-509f models. Not that you'd know it by looking, though...

The Luxman L-505f boasts heavyweight (21kg) construction, studio-style front panel power meters and brushed titanium-gold aluminium front panel – all of which hark back to some of the classic Japanese designs of the 1970s. This behemoth (467x179x440mm) sports a claimed 90W RMS per side into 8Ω. Fit and finish is top-notch, and inspires confidence the way the switches and knobs all have a positive and smooth action. The brushed golden finish of the thick aluminium front panel is very impressive, giving the amplifier a real sense of class, and looks especially nice in tandem with the backlit front panel level meters.

If this latter feature gets the purists tut-tutting in disgust, then they'll not be happy to learn of the (shock, horror!) tone controls and loudness button. Fear not though, dear reader, as these are easily defeatable, though one should not dismiss these items so readily. In addition there is also the inclusion of a 'Subsonic' filter button for use with LPs, and also a Record Selector switch which – again – is

also defeatable. A quality headphone socket and MM/MC phono stage are also included in the package as standard, plus a rather tacky looking remote.

Around the back are some pretty standard-looking gold-plated phono sockets, as well as a set of Balanced Line Inputs which should result in even higher sound quality with a source equipped with the same. One nice option is the ability to separate the pre and power sections of the amp by removing a link between phono sockets. This allows the L-505f to be used either as a pre amplifier or a power amplifier, though the performance is so good as an integrated unit I really don't see the point.

Whipping the top cover off, internal construction is first-rate in true high-end Japanese fashion. Component quality is high with plenty of Nippon Chemicon and Elna capacitors being used and – somewhat uniquely these days for a solid-state design – carbon film resistors! According to Luxman every component has been especially selected on the basis of sound quality which gives it more of a 'hand crafted' appeal rather than some generic bunch of parts thrown



together ad-hoc. Most of the parts are custom-made for them as well, which really does make this design something special. Special mention must also go to the huge mains transformer and bank of PSU capacitors which supply some 9400uF capacitance per channel. Apart from the shared PSU the design is a dual-mono one.

The most interesting and groundbreaking facet of this new design is what Luxman describes in their literature as the ODNF circuit. According to Luxman their new design alleviates the need to have phase compensation circuits or negative feedback in the musical path. This, say Luxman, results in a circuit which 'accurately isolates distortion components from music signals and completely cancels them out' (sic). 'The circuit features such an ultra-wide range, ultra-high slew rate and ultra-low distortion that it does not use phase compensation for the amplifying circuits of music signals.' Their new technology also ensures that the need for a DC servo circuit is alleviated, again improving sound quality. All very well and good in practice then, but the proof of course is in the pudding. How would the L-505f taste?

## SOUND QUALITY

I started the Luxman out with a slice of Van Morrison from his 'Moondance' CD, and was greeted with a very monochromatic and hard edged sound which lacked any sense of life or emotion. This was after three days worth of constant running in. Oh dear I thought – it looked like a case of beauty being only skin deep for the L-505f. It really did sound like an Old School transistor design from the nineteen seventies! Being a studious sort, I decided to give it another week of running in before I started listening critically. Coming back to the amplifier after a week was like listening to a totally different design - the rough edges were mostly gone and the sound had opened out beautifully. It was so 'day and night' that it was almost disturbing; those who do not put much stock in the 'running in' phenomena would surely change their minds after hearing this...

In some respects this still sounds like a solid-state amplifier – more on that in a moment – but I was delighted to hear such a delicate and grain-free midrange performance. It wasn't showy or brash as solid-state can be, and just allowed the music to speak for itself. Listening to Debussy's

'La Mer' one could quite easily distinguish the various 'characters' of each instrument being played – the patina that transforms the music into a living, breathing entity. String tone in particular was very smooth and free from the 'sheen' which taints lesser equipment. You could really see into the performance.

Stage depth and width were equally delivered in this same effortless – but never boring – manner. Its midrange performance reminded me of a good valve design such as the Quad II Forty, no less. Treble quality wasn't quite up to the midrange performance, possessing a hint of typical solid-state brightness which could cause problems with some partnering equipment, but didn't detract from otherwise fantastic job the L-505f was doing elsewhere. Each CD I played I listened to all the way through, and enjoyed. I can't really give the L-505f any higher praise than that!

Proof that the PSU design in the Luxman was a good one was evident on the bass drum which begins Fleetwood Mac's 'The Chain'. It was very powerful and full-bodied, but without any hint of strain – the sound just emerged from the speakers as if the band were



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**LUX LIFE**

Luxman began life in 1925 as a radio equipment department of the Kinsuido picture framing store! Their radio book proclaimed, "Read it once and you're a radio expert", and ran for fourteen editions. Despite releasing various highly regarded output transformers, and several radio sets and phonographs, it wasn't until 1958 when they released their first vacuum tube monobloc amplifier however, the MA-7A. This was followed in 1961 by the SQ-5A Stereo valve amplifier. The former premiered the use of negative feedback, which Lux holds worldwide patents for. The latter used their unique tone control design still used to this day. Other highlights through the years included Output Transformerless amplifier designs, motion feedback designs, Vacuum suction turntables, High Speed 'fluency' DSP DAC design, the 'Luxkit' range of DIY audio products and much more.

**REFERENCE SYSTEM:**  
Naim CDI CD player  
Mission M72 loudspeakers  
Chord Company cables

there and the speakers weren't. The temptation was to turn up the volume control. The sense of power and grip over the speakers was quite addictive and resulted in more than a few rock albums being played at above average listening levels as I cackled with delight next to the volume control! Hi hats on this track were quite startling in the sense that they seemed to be in the room with me. There was no dynamic slurring or overhang to mar the impact of the sound.

Being very picky there wasn't quite the tonal colour on vocal harmonies that you'd get with a very good valve design, but I can see many preferring the sound of the Luxman. It's certainly an even-handed, crisp and dynamic performer. Again my attention was arrested by that smooth and valve-like midband. It

seems that Luxman's ODNF circuit really does make a worthwhile difference to the sound and I'd be intrigued to hear what the other two models in the range sound like.

Briefly trying out the MC phono stage I was greeted by essentially the same even handed and open presentation as the line stages. The sound was uncoloured, expressive and powerful with a firm bottom end delivery. This is a quality phono stage and not an afterthought, I'm pleased to report, which adds real value and alleviates the need for an external unit, unless you're looking for a truly special one such as the Whest or its Trichord Diablo rival. Brief mention should also be given to the tone controls that actually worked surprisingly well, and have always been well designed on classic Luxman products, in the same way that Quad's tone controls have. Overall I still preferred the sound quality with the unit switched to Direct mode, though.

**CONCLUSION**

I was mightily impressed with the L-505f, and am genuinely going to miss having it around. Those that like the 'valve sound' but the power and punch of solid-state may well have found their perfect amplifier with the L-505f. My only criticism is that slightly bright treble, though I suspect that after a few more months running

in this would be sufficiently tamed to be barely noticeable. The only other negative point is the very plasticky remote which lets down the side somewhat, but is a minor gripe all the same. Considering this amplifier is so sonically capable, well built and presented, boasts a fine MM/MC phono stage as standard, and – knowing Luxman – will probably run without a hitch for at least the next thirty years, it makes a great case for itself. Few, if any, rivals offer so much at the price.

**VERDICT** ●●●●● £

Superb bass punch allied to a natural midband makes for a great listen, although bright treble rewards careful matching. Excellent build, looks and feature count make this brilliant value for money.

**LUXMAN L-505F** £2,295  
Select Audio  
+44 (0) 1900 813064  
www.luxman.org

**FOR**

- transparent midband
- bass clout
- looks and build

**AGAINST**

- occasionally bright treble
- plasticky remote

**MEASURED PERFORMANCE**

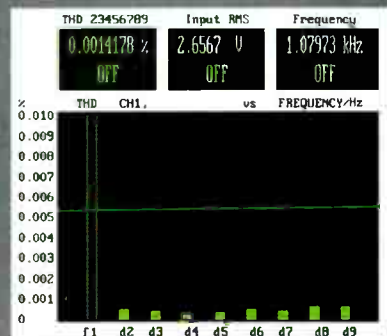
The Lux L-505 f has plenty of muscle, producing no less than 120W per channel into 8ohms under measurement, and 182W into 4ohms. This is a low distortion design, by which I mean it has been designed to deliberately produce minimal distortion under all conditions, whereas these days the situation is sometimes managed to achieve slightly differing aims. We measured just 0.0014% at 10kHz, at 1W output into 8ohms - a very low value. The worst case was 0.014%, achieved at full output into 4ohms. There is a phono input, where both MM (47kohm) and MC (100ohm) are accurately equalised, but MC had stronger bass. Both reach down to 9Hz, but there is a switchable warp (subsonic) filter. Noise was very low on MM but could have been lower on MC. Overload levels were high. MC sensitivity was for high-ish output types, not for low output esoterica.

The tone controls were very neat in the equalisation applied at spectrum extremes, and there is a loudness contour too.

The Lux is very well engineered, turning in good results in every area. NK

<b>Power</b>	120watts
<b>CD/tuner/aux.</b>	
<b>Frequency response</b>	4Hz-50kHz

Separation	105dB
Noise	-101dB
Distortion	0.002%
Sensitivity	200mV
Disc (MM)	
Frequency response	9Hz-70kHz
Separation	68dB
Noise (e in)	0.11uV
Distortion	0.007%
Sensitivity	3mV
Overload	154mV
Disc (MC)	
Frequency response	9Hz-35kHz
Separation	66dB
Noise	0.13uV
Distortion	0.01%
Sensitivity	0.46mV
Overload	21mV



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STEREO TIMES on the Aurora gold turntable & illustrious tonearm

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# Golden Eras?

**Celebrating its golden fiftieth anniversary, Grado has released a new headphone designated the SR325i. Channa Vithana listens in...**

**T**he Sennheiser HD650 seems to be everyone's favourite headphone right now – and sure enough there isn't much wrong with it by any standards. But still some will crave an alternative to its rather 'proper', analytical and even mechanical sound; it's not exactly the funkiest performer on the block!

Enter Grado's £310 SR325i, which is attractively designed in Grado's classic style. Its outer air chambers and upright sliding adjusters are reminiscent of headphone-equipped air force pilots and radio broadcasters from the thirties and forties. The lightly hued gold-coloured air chambers are machined from a special non-resonant, very hard (aluminium) alloy. Grado employs a special processing method to increase the material's porosity. This complex treatment insures that the earphone chamber has no ringing, which might obscure detail or add coloration.

It's an open design where sound is heard externally which negates complete privacy. However the advantage of open designs is their inclination for more spatially dynamic music in comparison to closed back types. The Grado comes with a 2.13m lead terminated with a 6.3mm (1/4 inch) plug. It features high power neodymium magnets, a claimed frequency range between 18Hz-24kHz and drive units matched to 0.05dB. Weight is a sylph-like 200g.

Compared to its predecessor, the new SR325i utilises larger air chambers, where the mass distribution is improved, and an updated driver design. Grado says these enhancements make the SR325i "less affected by transient distortions, which in turn leads to improved control of both upper and lower frequencies". It features UHPLC (Ultra High-Purity Long Crystal) wire in its copper voice coil and connecting signal chord. The previous SR325 used UHPLC only in its voice coil.



## SOUND QUALITY

Playing 'Face Down' from 'Vicious Circle' (1994) by sleaze-rock group L.A. Guns, the Grado was superb at excavating detail, more so than my reference £410 Sennheiser HD650 headphone/Cardas cable combination, which sounded less involving. I found that the Sennheiser/Cardas could also reveal detail very well, but not quite with the same aptitude as the Grado. The Sennheiser/Cardas offered a wider spatial sound, was somewhat deeper in presence and weight and with an edge on bass extension (but not bass dexterity) over the Grado. The Grado however was much better at illuminating the music with superb frequency range cohesion, wonderful far-reaching linear sound quality and excellent musical timing.

The high-frequencies of electric guitars were convincing in their timbre. The Grado was so time-coherent that it captured powerful dynamic moments as well as smaller minute details with a wonderful subjective accuracy – hence their tightly focussed super-clear sound which was a contrast to the Sennheiser/Cardas and its wider spatiality yet incongruously more shut-in feel. With the Bartok/Reiner 'Concerto For Orchestra' 1955/58

(2004) on SACD, the Grado had a superior bass dexterity to the Sennheiser/Cardas with a more three-dimensional feel to the lower frequencies of the orchestration. The Grado was better at revealing the finer details to the acoustic decay of the percussion at the beginning of 'Giuoco Delle Coppie: Allegretto Scherzando' and then the delicacy of the subsequent flute playing.

## CONCLUSION

The SR325i excelled, when driven by the £540 Naim Headline 2/ NAPSC or £250 Creek OBH-21SE headphone amplifiers and a high quality source. It never failed to delight with its dedicated detail retrieval and wonderful musical timing, which procured an effortless yet engagingly kinetic sound. Additionally in the above review context they never once went into subjective high-frequency distortion. However, I feel their revealing nature might prove too much on bright or budget systems, so it would be wise to also audition the smoother £300 Sennheiser HD650 as an alternative.

Combining excellent build quality with Grado's distinctive design idiom, the SR325i is attractively different. At £310 it is a very accomplished and revealing headphone for suitably well-heeled sources - just partner carefully.

## VERDICT

Lucid musicality allied to excellent detailing and balance make this a superb pair of headphones.

**GRADO SR325i** £310  
Grado Labs  
+ 44 (0)1279 501 111  
www.armourhe.co.uk

## FOR

- distinguished styling
- build quality
- musical performance

## AGAINST

- too revealing for budget/ bright systems

# Linn Vogue

**Linn Products has always made distinctive, characterful sounding hi-fi, but these days it also boasts superlative design and build to match. Channa Vithana tried the latest solid-state powerhouse, the Exotik/Chakra C2200 pre-power combination for size...**

**J**ust as there's a sizeable constituency of audiophiles who'll never find valve amplification to their taste, so not everyone goes for Linn's brand of lean, gutsy solid-state amplification – especially when out of context working with non-Linn ancillaries. It is not, of course, built for those who'd run single ended triodes driving Tannoy Dual Concentrics out of choice. As ever, Linn kit is all about the proverbial 'pace, rhythm and timing'; what Ivor Tiefenbrun calls 'pitch accurate' music reproduction.

The remote-controlled Exotik preamplifier features six analogue inputs as standard. However, it is also available as the £2,750 Exotik+DA version which utilises multichannel A/V processing. The standard Exotik can be retrospectively upgraded to the DA version also. Internally, the Exotik features a version of Linn's switch-mode power supply which they have been using for several years.

Surface-mount technology for reduced signal paths and more compact circuit designs are used for better sound quality and yield a surprisingly low 3.5kg weight. The casework measures 80x381x368mm and features aluminium construction manufactured and finished by Linn. The design is sleek, simple and elegant while the control interface is excellent with clear, legible buttons

and operation. However, some Linnphomaniacs will prefer the previous, almost extinct, compact LK style. The Exotik also features a complex array of multi-room, remote-control and RS232 link connectivity at the rear.

The Chakra C 2200 power amplifier features similar casework to the Exotik and measures 381x355x80mm with a delineated centre panel containing the model designation and Chakra logo. Around the centre panel is a mesh grill set further back. Claimed power output figures for the C 2200 are 200W into 4ohms and 111W into 8ohms. All this power capability comes with a modest 6kg weight. Linn says, "The transformer in the Klimax and Chakra is less than a 40mm (1.5 inch) cube and can deliver 1000 Watts... The reservoir capacitors in the Klimax and Chakra are about the size of a thimble but give better filtering than ones the size of a beer can used in other very powerful amplifiers". Chakras can be specified with either XLR balanced or RCA phono sockets. They feature upgrade-ability with Aktiv crossover cards for Linn active loudspeakers, a very high-quality set of binding-posts at the rear and output sockets to add another Chakra if so desired. The

amplifiers are available in silver or black finishes.

## SOUND QUALITY

The beautifully luxurious 'King Of The Mountain' by Kate Bush from her latest, 2005 release, 'Aerial', was deep and well-balanced overall with the Linn amplifiers.

There was excellent instrumental separation, where all the individual instruments were clearly expressed with timbral acuity. This is important, especially for an inherently lush and expansive track like 'King Of

## REFERENCE SYSTEM

Quad QC-Twenty Four/QLI-Forty amplification (£4,000)  
Eastern Electric Minimax CD player (£879)  
Spendor S8e loudspeakers (£2,000)

The Mountain', because it is quite a dense recording with some powerful elements mixed with very delicate sound effects and melodies. Thus the Linns did not get flustered or swamped and confused into producing something that was harsh, dry or lacking in engaging cohesiveness.

Basslines were powerful and interconnected also, with good impact and the type of dynamic low-frequency quality one could feel as well as hear. This low-frequency quality of the Linns was most enjoyable as they did not interfere with the higher frequencies and were a part of the musical whole. Thus what I was hearing on the Kate Bush CD was music that was played with conviction and authority yet was nimble, detailed and never boring or grey.

The Balanescu Quartet's 2005 release of 'Maria T' was reproduced in a very cohesive manner. Here, everything was taut and tightly focussed with precision in instrumental phrasing and dynamic attack of the frequency range when instrumental notes started and stopped.

## THE EDITOR SAYS

Hearing this combo at the company's own factory dem room was an ear opening experience. I have not been an ardent fan of Linn amplification in the past, but I can see that in its way, it is quite superb. The sound is high resolution in every sense. Tonally, it's a little lean for those with tubular proclivities, but if this is a problem for you, then you probably wouldn't consider Linn electronics anyway. If not, you can enjoy its superlative speed and dynamic ability; it takes big, inefficient speakers (or any others for that matter), and pushes them out of themselves, forcing the music's rhythms and subtle emotional inflections out in a way that other top (but differently voiced) rivals, such as Quad valve amps, can't. It's spry, vivid, engaging and musically all-of-a-piece. You'll never be basking in its sweet effusive tonality, but you'll not miss it; through Linn loudspeakers the Exotik/Chakra C2200 is a visceral and physical listen. As always, partnering is critical; I heard it with the deliciously smooth Sondek CD12 (tragically no longer in production) and it was a knock-out, but I can see that it could verge on the lean (and mean) side with inappropriate ancillaries. Linn's ever-excellent dealer network should help prospective purchasers navigate this particular minefield! DP





This particular quality was excellent with the cello and violin especially as they accommodated different frequency extremes from low to high. Thus the Linns were able to handle them very well in a convincing and authoritative manner.

There was excellent layering of notes, and when it came to details like individual instrument phrasing, one could exactly follow the quality of each instrument within the overall composition. Bass was powerful and deep which underpinned the sound very well. The instrumental timbre was good with a clear enunciation of the violin, viola and cello where it was convincing and not forced.

The Linn amplification was a delight with the vocals by Jason Pierce (J. Spaceman) on 'Stop Your Cryin' from the 2001 release of 'Let It Come Down' by Spiritualized. Here, the Linns enabled me to hear through into the grit and rawness of his vocals and vocal intonations which is a very important quality as this is a major aspect of the peeled-away emotions which go from melancholy to spiritually uplifting. The superb vocal reproduction made a nice contrast to the grand 100 piece orchestration and immensely powerful gospel choir.

Comparing the £3,950 Linn Exotik and Chakra amplifier combo, which utilise switch-mode power-supplies with the all-valve £4000 Quad QC-Twenty Four/QII-Forty amplifier combination proved most interesting. The Quads provided more swagger and relaxed style in

comparison. They were deeper and more spatially adept than the Linns also, with a subjectively wider acoustic canvas. However, beyond immediacy, as the music progressed, the Linns had superior cohesiveness with better instrumental separation and control over the frequency range.

The Quads had a subjectively deeper, but less controlled and slightly woolly bass extension in comparison, which will charismatically appeal to some, while for myself, the more important low-frequency bass-agility allied with bass-extension, went to the Linns - as their low-frequencies were more cohesive with the rest of the music.

The Quad and Linn pre/power amplifiers were almost completely different in style and substance, where the Quads offered a slightly more free-flowing, lush, sweet and wider hi-fi, while the Linns were easily superior in reproducing music with a tight, finely textured and detailed cohesiveness.

## CONCLUSION

Subjectively, this latest two channel Linn pre-power combination provides a superbly cohesive sound quality that was controlled, focussed and deftly taut with all the music used. The Linns were able

## MUSIC

Kate Bush 'Aerial' (2005)  
Balanescu Quartet 'Maria T' (2005)  
Spiritualized 'Let It Come Down' (2001)

to exploit this capability without sounding obviously dry, cold or grey as some realities and perceptions of switch-mode and Linn products of the near-past have approximated. Thus, they were more than capable of revealing emotional vocal intonations through to intricate and dynamic instrumental reproduction also. The Linns are thoughtfully upgradeable and have super-slick functionality; completing their impressive abilities with first-rate build.

## VERDICT

Extremely taut and well resolved sound with great speed and dynamic alacrity – plus superlative build and styling – makes this a superb solid-state pre-power combination.

LINN EXOTIK £1,750  
LINN CHAKRA C 2200 £2,200  
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## FOR

- powerful sound
- cohesion, control, grip
- build, upgradeability

## AGAINST

- strong competition

## MEASURED PERFORMANCE

The C2200 power amplifier produces a lot of power, in view of its low weight, largely due to its switch mode power supply: 112W into 8ohms and 196W into 4ohms.

An early sample was returned for suspiciously high distortion, but the second sample produced an altogether better result, with figures around 0.02%. Even at full output into a low load, at 10kHz, distortion did not exceed 0.1% and second harmonic predominated, always a good sign. Our analysis shows this clearly.

The Exulik preamp offers a gain of x6.6, giving an input sensitivity of 170mV with the C2200 - high and enough to match all sources. Bandwidth was high, noise and distortion low and overload satisfactory at 5.5V out.

The Linn combo measures well, delivering a lot of power from a low weight package. NK

Power 112watts

CD/tuner/aux.

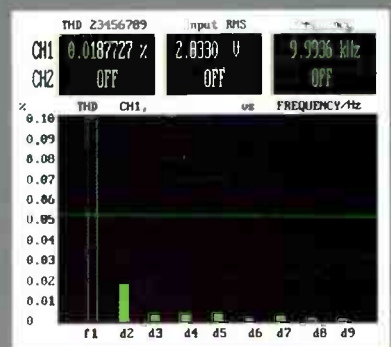
Frequency response 4Hz-22kHz

Separation 91dB

Noise -108dB

Distortion (1W) 0.02%

Sensitivity 1.11V



# Luna Modules

**Considering that many valve amplifiers lack the backbone to drive anything except the most sensitive of loudspeakers to serious volumes, it's good to find a decent low price, high power combination such as Prima Luna's new Prologue 3-4 pre-power, says John May...**

**F**unny, isn't it, how those versed in transistor amplification often throw caution to the wind when they suddenly decide it's time to 'take the tube' and invest in amplifiers running thermionic valves?

Often, folk move from seriously powerful solid state stuff to valve amplifiers often boasting one tenth of the rated power of their previous transistor fare – and are then disappointed when the output transformers saturate at anything approaching high levels.

Whilst it's absolutely true to say that, for example, twenty valve watts seem far louder than twenty transistor ones, the last time you could buy such a low powered trannie design was 1979, with the NAD3020! The truth is that these days, your 150W RMS per channel 'super integrated' is going to take a seriously big tube design to come close - in terms of motive force.

Enter PrimaLuna. The Prologue 3-4 preamplifier/ power amplifier combo you see here is a fraction of the price most valve amplifiers offering serious real world grunt, but they still claim 35W per side. We're not talking Audio Research D150 territory here, but still they're a good deal more muscular than your average entry level tubular belle (i.e. they have more than 3W per channel!)

Indeed, Netherlands-based PrimaLuna have garnered quite a

reputation of late for their high quality and well built, yet affordable range of valve amplification manufactured in China. All are hand built and use a surprisingly high quality selection of components considering the prices asked. High-grade transformers, ceramic valve bases, Nichicon, Solen, Swellong and RealCap capacitors, and gold-plated sockets offer the promise of high quality sound.

Both the Prologue Three pre-amplifier and Prologue Four power amplifiers are very well made and would compliment many a living room. There's something about valves sitting there glowing away which makes them akin to works of art rather than your usual boring black box with lights. They certainly made a favourable impression on those that saw them over Christmas *chez moi*. Their heavy gauge steel construction with vented chassis and superb metallic dark-blue finish – five coats thick and hand finished! – Coupled with the simple aluminium front with green LED is a model of sensible design work and easy on the eye in the long run.

The £949 Prologue Three is a non-inverting and no global feedback design, and uses the following valves: 2 x 5AR4; 2 x 12AX7 and 2 x 12AU7. The front panel houses the "Blue Velvet" ALPS volume control on the left – which has a nice positive feel – and the input selector control to the right. On the rear panel reside the gold-plated phono inputs, plus

two pairs of outputs (useful for bi-amping). There's also a set of very high quality banana sockets/binding posts, and you can choose to select a 4ohm or 8ohm socket depending on your choice of speakers.

The £699 Prologue Four is virtually identical to the Three in appearance – they both complement each other well. The low-noise small signal valves are again 2 x AX7 and 2 x AU7, whilst the power valves are the classic and well-loved EL34 types. All valves have been rebranded by PrimaLuna so it's unfortunately impossible to tell from whence they came. The custom-designed transformers used in both items are all high quality items sourced from the USA. Power supply transformers are Toroidal types for low noise, whilst the low loss output transformers are encapsulated types and PrimaLuna state that they offer wide bandwidth, with great bass and extended highs. A soft-start circuit is utilised to make life easier on the valves and other sensitive components. Adaptive Auto-Bias – exclusive to PrimaLuna – ensures that bias is constantly monitored and adjusted for optimal performance due to a 'dramatic reduction in distortion'. Like the Prologue





Three the circuit used is a global feedbackless design which should bode well for an open sounding performance.

## SOUND QUALITY

I commenced listening to the PrimaLuna pairing with David Bowie's 'Let's Dance' CD. I was expecting a rather mellow presentation of the music, perhaps a little rose-tinted even from those EL34s, but what I got instead couldn't have been further from that. The sound was hard-edged and incisive, with a glass-clear midband. Bass performance was reasonably solid but seemed a little on the vague side unless the volume control was turned up quite high. This CD relies on the bass performance to provide a firm foundation for the rest of this Nile Rogers production, and life was sucked out of the performance without it. I was also surprised by the slightly strident treble. The Mission M72s I use feature fabric dome tweeters, but you'd have thought it was a metal dome the sonic signature was so similar using the PrimaLunas.

Concerned about this rather hard-edged sound I substituted our current budget favourite the Shanling CD-T80 in place of my usual Naim CDI, thinking the multi-bit converters

might be being highlighted by the PrimaLunas. This helped matters a little but treble and upper midrange performance was still a little brightly lit for my tastes. Listening to 'Cat People' revealed a muddled midrange performance, and a sound that failed to gel musically. Cymbals were splashy rather than clear and distinct entities. Running the amps in continuously for an extra two days helped smooth things out a little, but didn't make a day and night difference, nor did a change of cabling.

Still, I was taken by the lack of grain in the performance. Valve amplifiers often offer an advantage here over their solids-state brethren and the PrimaLunas were no exception here. Those used to a solid-state sound might interpret this as a lack of excitement, but after having lived with the 'valve sound' for a while you soon notice how much grain can often be introduced into the sound from poorly designed transistor designs. Of course the trick is not to fall too far back in the other direction and rob the music of its ability to thrill and capture your attention and keep it.

Fair enough; the PrimaLuna isn't particularly happy with modern Pop music. I next selected the rather fabulous Mercury Living Presence

recording of Stravinsky's 'The Firebird', and this was more like it. The sense of insight afforded into the recording was very impressive, extremely open and grain-free. The hard edge to the sound wasn't as prominent on this recording as it had been with Bowie and Beck. As before I found the volume control had to be turned up a little to fully appreciate what the PrimaLuna was capable of. This isn't really a design for those that like listening at low levels.

The dynamic ability on 'Fireworks' was quite startling with - suitably - firecracker dynamics. The overall balance was certainly on the dry-neutral side, and tonal colouring wasn't as pronounced as you'd expect from an all-valve design, but it was still an exciting and mature performance with a good sense of acoustic space and depth. Images were locked with impressive solidity into space that bought the performance alive - this is a genuine 3D performer for those that appreciate such things. With a pair of electrostatics this amplifier would really shine with classical, and speakers such as the Cain and Cain Abbys we tested last month might also prove to be an enticing combination.

I decided to briefly try out

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Musicology

VERDICT ●●●●●

Capable combo boasting an engaging and dynamic sound, with decent power and fine build.

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 www.guildfordaudio.co.uk

**FOR**  
 - smooth midband  
 - great imaging  
 - looks and build

**AGAINST**  
 - forward treble  
 - limited tonal palette



Rear of the Prologue 3 preamp, with twin outputs.

**THE EL34**

This pentode power valve has long been a favourite of audiophiles the world over and was first introduced to the world in 1952. They were popularised in the seminal publication 'Circuits for Audio Amplifiers' by Philips/Mullard for being the power valves of choice in their widely popular and still copied Mullard 5-20 design. It has a rated anode dissipation of around 25w, though greater power outputs can be had with modern circuit designs. Original Mullard EL34s command high prices now – just check out Ebay! – though some modern designs still come pretty close such as the Electro-Harmonix EL34EH I tried briefly in the PrimaLuna. The New Sensor Corporation has now bought the Mullard name and trademark, and the EL34 re-released, though it remains to be seen if it matches the performance of the original.

the PrimaLuna Prologue Four with a passive preamp (an Alps "Black Beauty" in a box) to see if there were any extra gains in sound quality to be had. To be honest there was very little difference between that and using the Prologue Three pre-amplifier, suggesting the pre is a very good and neutral design. I'd wager the sound was actually slightly fuller-bodied with the preamplifier, though the passive had a slight edge in clarity as you'd expect from its reduced part count! Overall though I preferred the sound with the Prologue Three connected up. It was certainly more neutral than my Ming Da MC-7R pre though perhaps lacked the sense of drama and excitement that the Ming Da can impart, though truth be told this is more likely a pleasant colouration on the part of the MC-7R.

Next I tried the Prologue Three connected up to an Autocostruire TA2020 Class-T power amplifier, which has been causing quite a stir in the DIY community recently for its low price and super-high performance. This resulted in quite a smooth sounding combination. I know from experience that the TA2020 can really rock with the best of them, but the Prologue Three smoothed off the corners a little and resulted in a very mellow yet involving performance. Bass performance was nice and ballsy, and that same lack of grain to the sound

was evident. A quick listen to Kate Bush's new 'Aerial' CD proved that, and made for a very enjoyable and organic presentation of the music. Being nit-picky here though I would have liked a touch more bite and snap to the sound to really get things cooking. It's the kind of sound that would probably appeal more to those who like the music to gently immerse them rather than grab them by the short and curlsies like a Naim for example!

**CONCLUSION**

The PrimaLuna Three and Four intrigued me. I was expecting quite a mellifluous sound, like some of the classic designs of the 50s and 60s, especially considering the use of the EL34 valves in the power amp. What I heard was more akin to solid-state in many respects! Whilst not particularly stunning with Rock or Dance music, the combos acquitted themselves well with well-recorded Classical music, and were also great with female vocals, folk and jazz. I still have

reservations about the hardness in the treble region, but this is still a nice design and exceptionally well made for the price. Of course as this is a valve design gains can quite possibly be had by trying different varieties of valve – I briefly tried a set of Electro-Harmonix EL34 valves to positive effect so there's room here for experimentation which makes it more fun. An extremely impressive performer then, but one which demands an audition first as it won't gel with all musical styles.

**REFERENCE SYSTEM**

Naim CD1 CD player  
 Shanling CD-T80 upsampling CD player  
 Mission M72 loudspeakers  
 Van Den Hul / Chord / DNM cables



The Prologue 4 power amp., with 4ohm and 8ohm terminals.

**MEASURED PERFORMANCE**

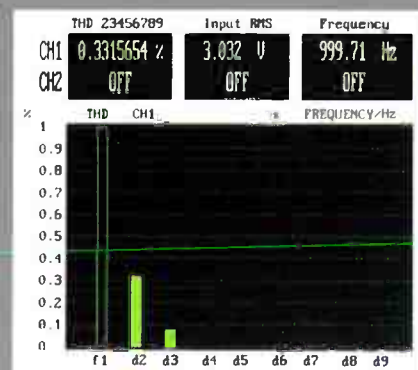
The Prologue Four produced 35W from its 8ohm winding and 30W from the 4ohm tap, a slight drop as expected due to less efficient coupling. This is much as expected from EL34s. Unfortunately, one channel distorted more heavily than the other on our review sample, but the good channel managed poorly, producing around 0.4% distortion at one watt and 1.4% at full output (-1dB). The distortion spectrum changed significantly at high output, from dominant second to third, not a good sign. At 40Hz, bass distortion rose to 2% at full output. These are not good figures; better is easily possible with decent output transformers.

Frequency response was wide, reaching up to 76kHz, no less, and noise low. Prologue 3 gain was a useful x4.

The Prologue Four didn't measure especially well on its good channel. All the same it will sound easy enough if not pushed too hard, when both channels

work properly. NK

Power	35watts
CD/tuner/aux.	
Frequency response	15Hz-71kHz
Separation	82dB
Noise	-109dB
Distortion (1W)	0.4%
Sensitivity	600mV



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# Totally Wired

**Channa Vithana tries two complete cabling packages from Germany-based Phonosophie and Canadian manufacturer Moray James, and finds that – yes – wires really do sound different!**

**O**ne of the darkest audio arts is that of cable design. A few people are happy to pay vast sums of money on hi-fi wiring, having become total believers. Many gaze at the pretty colours, lavish packaging and plugs that look like jewellery, and want to believe the hype. In this feature, I attempted to compare complete cable 'looms', so as to see what one-make solutions from two respected manufacturers could do for my system. I don't claim any definite insight into cables, but simply used my ears just like everyone else. To begin with, the review was conducted with a reference mixed cable combination for comparison, comprising £41.95/2m Russ Andrews Yello mains cables, £300 Kontak Link 507 interconnects and £34/m Chord Company Odyssey 4 loudspeaker cable.

The £195 Phonosophie PH Powercord AG mains cable uses multi-strand copper wire with a difference! As all the contacts, pins and fuse holders for the plug and IEC socket are silver-plated - an entirely logical, yet unusual approach - to "minimise resistances". Standard lengths are 1.5m and construction consists of a black PVC outer sleeve and three PVC insulated 2.5mm inner conductors.

Phonosophie prefer to use BNC or DIN sockets for their own equipment, hence these particular £145 PK2 interconnects come with silver-plated BNC connectors and require four £9.99 silver-plated BNC to phono adapters. Phonosophie says the PK2 uses "...high purity oxygen free copper that has been selected from around 200 different alternatives on the basis of sound quality alone" and that the construction "consists of two pairs of individually screened and tinned copper signal leads, with polyethylene insulation and a black PVC jacket". The PK2 can also be terminated with balanced XLR sockets for £185.

The LS2 speaker cable geometry is 2 x 6mm<sup>2</sup> in cross-section. Cost is £30/m plus £63 for silver-plated banana plug termination. Phonosophie says "the oxygen free cooper-twists (99.99%-OFC) are carried at a constant distance apart by the stiff PE isolation, creating a low capacity (power amps work more stably) together with an acceptable induction and DC resistance".

Canadian company Moray James Cryogenics, started out in 1987 with co-invention of Sumo Aria loudspeakers. They have since specialised in cryogenic treatment for their own cable manufacturing processes. The sub-zero modus

operandi for Moray James is "... a full immersion deep cryogenic one (which) provides a colder soak temperature than is possible with a dry heat exchanger system. While the differences in temperature (is) not great the difference can consistently be heard between the two processes".

The PWR 2.5 mains cable is priced at US\$450 (£254 approximately) for a six-foot length. Moray James state that the PWR 2.5 "employs 12 (gauge) tinned copper, however the alloy is a gas filled PE as this (provides) significantly higher thermal characteristics and allows for (a) higher voltage rating". Externally the PWR 2.5 uses a PVC compound, internally however, "the alloy used in the power and (SPK1) speaker cables is a little harder and has a higher heat rating (than the interconnect)". The PWR 2.5 uses a special IEC connector made by Marinco. Moray James says that apart from sounding better, the Marinco can accommodate large heavy gauge wire. The whole of the PWR 2.5 is cryogenically treated including the fuse. European/UK plug and IEC connection costs US\$25.

The RCA Analog interconnect is priced at US\$375 per metre, or approximately £212. Moray James states that the copper used is "an ultra high grade communications grade copper. The competition



Laurence Dickie

# vivid audio .co.uk

Laurence Dickie, world-renowned designer of the famous Nautilus Loudspeaker system, has developed and patented new advanced drive units which are integral to the striking new Vivid Audio range of Loudspeakers. A true technical force - both visually stunning and unquestionably musically rewarding

It takes a special combination of characters to achieve successful partnerships. Vivid Audio has come into being because of the coming together of just that sort of team. Much of the innovation is the brainchild of the Brighton-based designer Laurence Dickie. Since a young age, Laurence Dickie has been passionate about music and the sciences but his particular obsession has been with loudspeakers. With his insatiable zest for learning and discovering, he has been developing his passion from school days through University and beyond. Laurence (Dic) has honed his skills in the design of loudspeakers of extraordinary performance. His achievements to date are noteworthy, to say the least, and he commands a deep respect from his peers. But, Dic does not simply design loudspeakers.....

.....he takes the proposed design concept and improves it beyond the point most designers are happy to "sign off".

Joining forces with the South African contingent of Bruce and Deone Gessner and Philip Guttentag (forming Vivid Audio), was the ideal career move since he could now be involved in designing and engineering products in their entirety. It meant his having a say at every stage of development, from the acoustic performance to the aesthetic design of each product. Dic's involvement in the Vivid Audio story is one that started approximately five years ago when he set out to create a range of drivers for professional monitors. He was introduced to the other members of Vivid two years later when it quickly became clear that these same drivers would be eminently suitable for a new range of groundbreaking designs they had been developing.

For a new high-end speaker manufacturer to succeed it was clear from the outset that such a company would have to deliver products featuring more than just innovative engineering. These products would have to deliver an acoustic performance rendering them virtually invisible. They would need to refine acoustic performance to a new level which encourages the listener to want more, rather than tire and need a break.

Vivid Audio wanted to achieve all these things but not just at any price. That's why they made considerable effort to extract the best performance imaginable from each component using customary materials wherever possible. Which is why there are no standard parts to be found in any of their loudspeakers.

Every component is made to their own exacting specification. Most hidden away but quietly delivering a listening experience not to be forgotten.

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" Even a seasoned speaker designer was just transported into the film, effortlessly and instantly. And that after all, is what the filmmakers' art is all about and what we hope our home cinema kit will deliver to us in our homes. Only the best kit does it this well and Vivid is up there. It is big and it is clever. "

**Vivid Audio Surround Sound System (B1, K1, C1)**  
Adam Rayner, Home Cinema Choice, August 2005.  
Gold Star Reference Status

" An extremely revealing and genuinely neutral loudspeaker with dynamic range, timing and imaging to die for. "

A true world class loudspeaker from a brand that knows how to get results. "

**Vivid Audio B1**  
Jason Kennedy, Hi-Fi Choice  
Editors Choice Award

" Seamless is a much-banded term in describing speaker sound, but the K1 gave a definitive reference point for applying the description. What may be termed the aspiration of this speaker was nigh-on perfect. "

**Vivid Audio K1**  
Andrew Harrison, Hi-Fi News, Dec 2005

" To create ultimate detail in a range of monitor studio loudspeakers for the home. Vivid took a completely new and radical approach to their design...

...this meant surpassing existing speaker technology in order to reach a no compromise solution, giving unparalleled musical insight, resolution, speed, dynamics and tonal accuracy. "

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for sales in communication cable combined with their massive volume allows the manufacturer to use grades of copper that would not be possible with small quantity batches". The RCA Analog uses DH Labs phono connectors which are nicely fabricated and have a screw-in tightening facility. Moray James states, "the dielectric in the DH Labs RCA is (undemanding) to work with in that it takes heat very well and that makes for (a) first class solder connection." The RCA Analogue is also available in balanced XLR and RCA Digital versions.

The SPK1 speaker cable costs US\$940 for ten feet (about 3.048M) which works out approximately at US\$308/M (£174) or £87/monoM. Longer lengths of SPK1 are cheaper. The SPK1 uses twisted pair stranded copper and is quite thick. Outer surface material is a reflective grey weave which is similar in appearance to the PWR 2.5 and RCA Analog, and thus very attractive in the flesh. These particular SPK1s were terminated with superbly crafted VBT 0644 connectors which have excellent practicality as they screw-in and tighten with precision. The SPK1s are higher-capacitance cables and therefore cannot be used with some Naim, Exposure or similar amplifiers – please refer to manufacturer.

Starting first with the Phonosophie cables, and compared to the reference cables, Bach's 'Well Tempered Clavier', exactly played by Daniel Barenboim, was superb. Gone were some of the ragged upper mid-bass frequencies from the piano which subjectively produced slightly ringing distortions. Instead the music was reproduced with a more cohesive balance where the piano was better defined and richly expressive in timbre without suffering from any disjointed phrasing which can cause a more forced sound.

The vocals by Kate Bush from 'Rubberband Girl' had a dramatic increase in resolution, deftness and high-frequency extension through the Phonosophie cables, in comparison to the reference set. The high-frequencies of 'Rubberband Girl' can sound shrill and bright yet the Phonosophie cables handled them with ease. Indeed these vocals intermingled nicely with the instruments while bass lines in particular were finer and more agile. The music overall on 'Rubberband Girl' was really enjoyable with better resolution, timbre and cohesiveness.

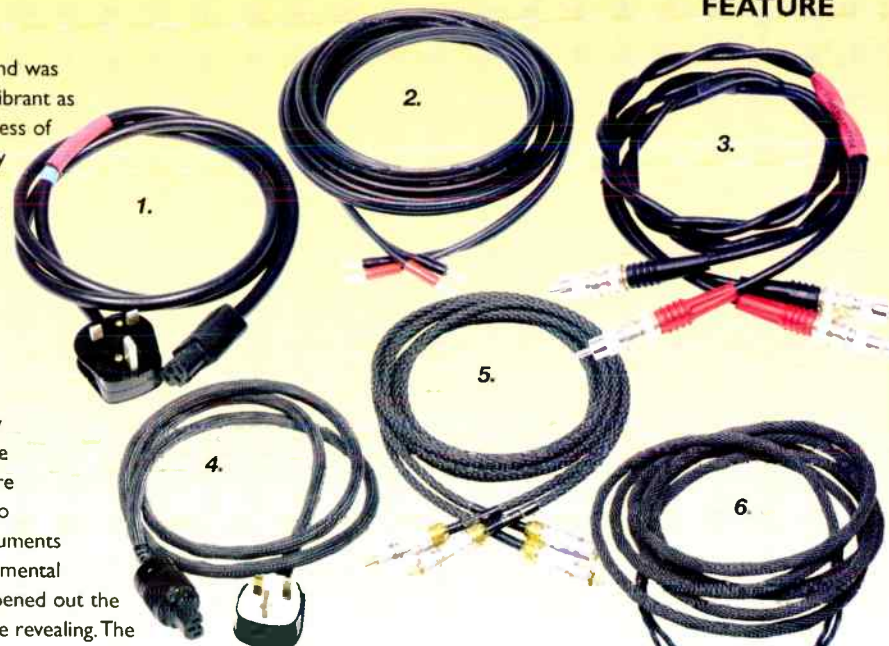
Metallica's 'Enter Sandman' on DVD Audio had a much quieter background and subjective dynamic range had increased, resulting in the invitation of higher volumes, without fear of distortion or aggressive

coloration. The sound was cleaner and more vibrant as I felt the effortlessness of the music essentially improved with the Phonosophie cables compared to the reference set. For instance the speed, attack and precision of the guitars, drums and bass lines were now ferociously enjoyable and not forced. There was better timbre to the vocals and instruments with superior instrumental separation which opened out the sound and was more revealing. The bass lines in particular became tauter, lither and ultimately more powerful as a result because I could start to appreciate a comprehensive bass array for 'Enter Sandman', from upper-mid to the lowest depths, like a finely-graduated and descending-hierarchy of low-frequencies.

Moving to the Moray James Cables Sound Quality, and the sound of the 'Well Tempered Clavier' went even further than the already excellent (but cheaper) Phonosophie cables. I could now appreciate a much finer acoustic decay around the struck keys of the piano, now permeated with beautiful timbre. Consequently, the piano sounded more natural with better three-dimensionality, phrasing and improved musical effortlessness in comparison to the Phonosophie and even more so against the reference cables.

The sound from 'Rubberband Girl' was simply stunning through the Moray James cables. The whole musical scope had spread out to a dramatic degree, where the spatiality of the music was now simply cinematic in scale. This brought on a wonderful ease to the music which allowed the instruments and vocals to breathe and flow more easily. Subsequently, details like Kate Bush's vocals had become sublimely beautiful with a lyrical elegance which was slightly lessened on the cheaper Phonosophie cables and almost completely absent from the reference set. The instrumental separation was excellent as were the individual timbres of each constituent. These details were not only superior, super-clear and expressive but they were really satisfying, as there was cohesiveness with the vocals.

There was suitably growing guitar and drum timbre to the famously melodic opening lines of 'Enter Sandman' by Metallica through the Moray James Cables. The sound



1. Phonosophie PH Powercord AG Mains  
2. Phonosophie LS2 speaker cable  
3. Phonosophie PK2 interconnects  
4. Moray James 2.5 mains cable  
5. Moray James RCA Analogue interconnects  
6. Moray James SPK1 speaker cable

was opened out further, allowing the dynamism of the drums, guitars and vocals to really breathe fire into the music and provide ferocity, speed and higher resolution. The music was at once deeper in bass dexterity and extension while wide, open and fluent in comparison to the reference cables. The music was skillfully cohesive similar to the Phonosophie cables, but now with superior timbre and resolution. The treble from the Moray James cables is very revealing which ostensibly gave a brighter stance to 'Enter Sandman'; however beyond immediacy I could not discern any high-frequency stridency; rather there was simply more musical information on offer. The upper-mid to the lowest bass was agile, defined and powerful, now taken further than the Phonosophie cables, where low-frequencies were expressed as musical entities rather than the slightly flabbier approach of the reference cables.

## CONCLUSION

The Phonosophie combination was superior to my reference cable loom, with better speed, attack, resolution and timbre. The Moray James cables at a higher cost were even better as they opened out the sound with broad brush strokes, yet still revealed the music and its inner details with authority. Both the Phonosophie and Moray James cable combinations worked superbly as whole entities and are therefore cordially recommended. In this instance at least, spending serious sums on cables does bring real results.

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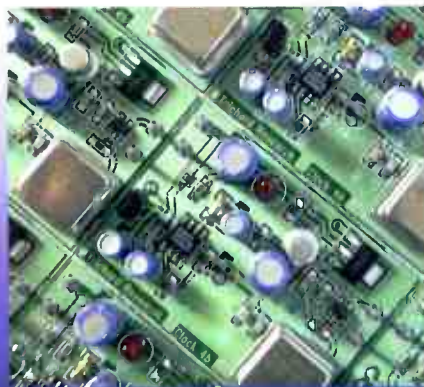
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# Cutting Edge

David Price tries Supra's Sword high end loudspeaker cable.

**T**he trouble with loudspeaker cables is that there's more smoke and mirrors in their manufacture, sales and marketing than your local Billy Smart's Circus; vast amounts of hype plus the inevitable grandiose claims about their efficacy. Factor in shiny packaging and the odd rave review by a hapless hack and you've entered the audio-phile twilight zone.

The trouble is that you or I could declare ourselves 'cable specialists' without so much as minute's notice. Source a cheap OEM cable from China (solely on cost considerations), fit some fancy gold plated banana plugs on either end, stick it in a box with a bit of black velvet covered plastic, and then charge 1000% mark up. Give it a fancy classical sounding brand name, get your mates to post some rave reviews on internet audio forums (and isn't it amazing how Chinese Whispers work here?), then sit back and wait for the cash...

Well, rest assured that Swedish-based Supra is the very antithesis of such skulduggery. It is a real, in-house cable manufacturer (one of the few in Europe) and not a fancy marketing operation. Each metre is made on site by people seriously interested in the science of current and voltage transfer. It's an impressive establishment to visit (as I have), and their exhaustive, relentless attention to detail impresses. Although the UK profile of this brand isn't as high as it deserves to be (after all, there are a million brands much closer to home, all claiming superlative sound too), it's what I'd call 'the real deal'.

What better time then - in this issue devoted to massive, cost-no-object loudspeakers - to try a suitably ostentatiously priced cable?

Supra's Sword is the company's top marque, and boasts a number of Supra patents, the key one being the bifilar wound Litz conductors, each comprising 24 individually insulated wires. This bifilar winding is built with 12 of these wires helically wound in one direction and 12 in the opposite direction. This divides the magnetic field into opposing directions resulting in self cancellation, says Supra. Because Sword's conductors comprise a number of insulated wires, dynamic skin effect is cancelled, so therefore Sword behaves as a non-inductive and phase stable cable, the theory goes.

This special construction (with two opposite wound wire groups which cancel each other's fields) means that the termination quality is very critical. It's done with strong, gas-tight crimping, so the joined metals are fused into one. This is more pure and secure than any soldering, says Supra. Termination is a in either spade/banana or BFA combination connector, and custom lengths are available on order.

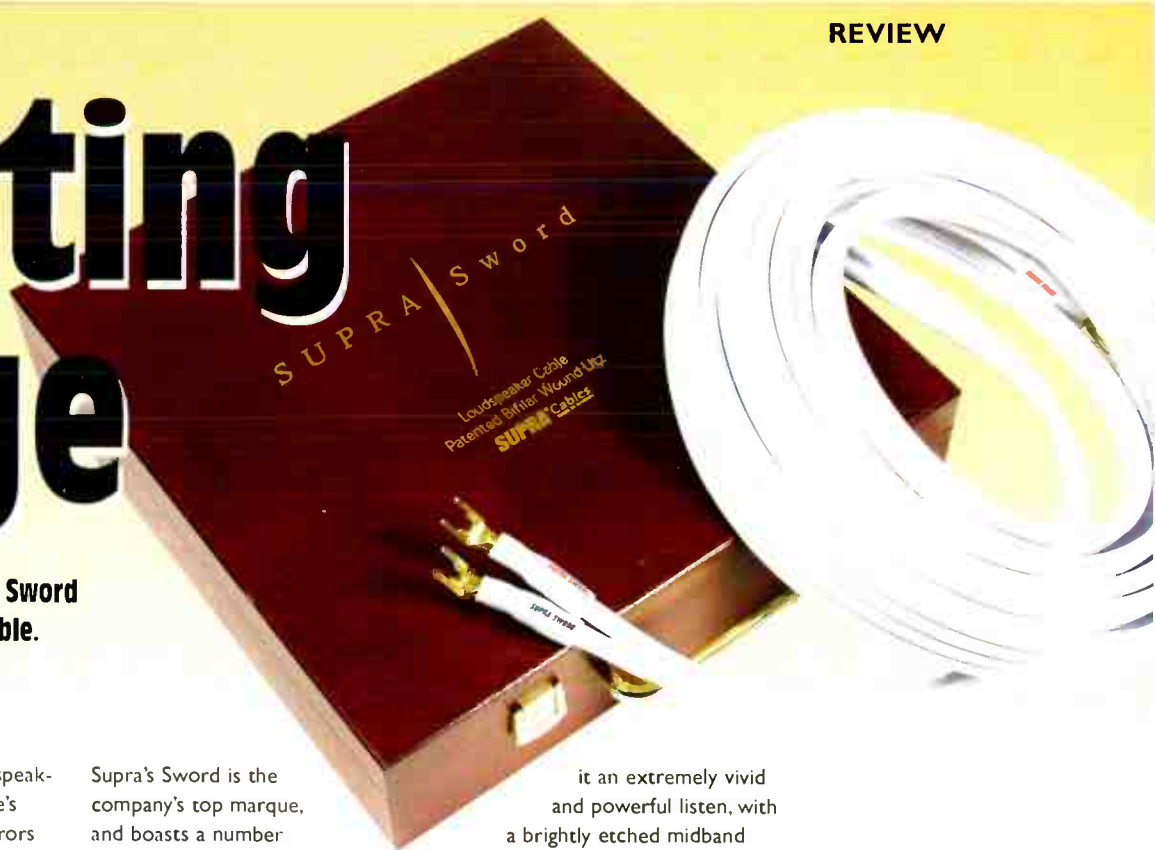
It's certainly a physically substantial bit of wire; diameter, weight and colour all mean there's no mistaking its presence in your listening room. I have to say I'd rather cables were heard and not seen, but if that's the price you pay for its novel construction methods, so be it! Our review sample came with Supra Fork XL spades, which weren't the easiest things to use on certain loudspeaker binding posts...

Sonically, it's up with the best I've heard from The Chord Company (Signature) and Townshend Audio (Isolda DCT), although it's by no means the same. I found

it an extremely vivid and powerful listen, with a brightly etched midband and strong, powerful, visceral bass that was never less than explicitly rhythmic. Whereas the aforementioned Brit pack err on the super-neutral side (highly self-effacing and inky black in character), the Sword is - as its name suggests quite sharp in the midband. There's certainly the sense that it's 'scything' through the mix with a relentless efficacy that the other price rivals can't quite muster. Whereas the Townshend is dark and smooth and subtle, finessed and gently beguiling, the Supra is crisp and spry with sharply delineated fine detailing; it's as if it turns the spotlight on the music, and shows it to you warts'n'all.

Whereas bass is its most impressive facet; strong and taut in the manner you'd associate with a high end Naim power amp, treble is less brilliant; it lacks the silky subtlety of the top Chord Company and Townshend fare. It's not at all bad, but those with super delicate tweeters, or indeed sensibilities, will look to others. The best way to describe it is 'brightly etched'; it's open and crisp, but not silky or saccharine by any stretch of the imagination. I actually found this of real use for speakers such as the Quad 989, which are tad 'rolled off' and lackadaisical in their high frequency handling; the Sword gave them some much needed bite and incision, whereas the ultra-neutral Isolda DCT had the reverse effect (i.e. two Mogadons and a cup of Horlicks).

Overall then, an excellent high end cable, but as with all super-high end designs, you'll have to try before you buy, to make sure it's right for you!



## VERDICT ●●●●●

As the name suggests, a razor sharp sounding high end cable that's brilliantly capable in the right system.

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# Eastern

**Qinpu is the latest name from China to proffer high power, low(ish) cost audio amplification. Dominic Todd listens to the mid-price A-8000 Mk2 integrated and comes away suitably impressed...**



**P**ick up this curiously named unit and place it on a shelf and two factors immediately suggest this is expensive. First is the sheer weight which, at over 20kg, must mean there's some serious engineering involved. Second is the shape and size. With a depth that's far greater than its width, it has the stature of countless exotic and expensive valve amplifiers that cost well over £2,000. Under closer examination the A-8000 Mk2 in fact turns out not to be of the tube variety but actually transistor: more of which later...

Amplification type aside, it can't be denied that the Qinpu (pronounced "Chin-poo") is exquisitely built. The chassis is made from aluminium and capped by solid, drilled aluminium billets that act as heatsinks. This and the 'dripping' wood fascia bring to mind the similarly sumptuous Pathos Logos amp' which

costs a not inconsiderable £2,750.

Many Chinese amplifiers have mimicked the best from the West before, but where the A-8000Mk2 really scores is in the detail execution. Take a close look at the imprinted legends and you'll see that they're sharp, neat and even. The panels all fit together immaculately and a look inside reveals a quality of construction that's well above norm for a Far Eastern amp of this price.

Whilst inside, it's worth taking a look at the rest of the components. As mentioned, this is a transistor amp' that uses a dual mono, heavily Class-A biased, format to produce a claimed 100W. The twin transformers,

which account for much of the weight, make this figure look highly feasible, whilst the other

components should ensure decent quality. Four Sanken A1215/C2921 output transistors and no fewer than six, per channel, Rubycon output capacitors show that the quality of materials is more than skin deep. Closer inspection reveals a quality ALPS volume control and Burr Brown op-amp. After scouring the electronics for a good half hour the only fault I could find was a misaligned input switchboard, yet even this is more cosmetic than engineering flaw.

In addition to the solid heat sinks, the amp' is kept cool by twin mini fans located on the unit's base. These help extract the warm air downwards, where the substantial, aluminium with rubber insert, feet ensure a good distance is kept between amp' and shelf.

If the A-8000 Mk2 has a weakness, then it's with the feature count. Unlike more expensive rivals there is no remote control. You'll also have to make do with just four

# Promise

line level inputs and no tape loop or headphone socket. This aside, the top mounted controls have a beautifully linear and well-damped action to them and my only operational niggle concerned the blue LED. Although suitably classy in hue, I found its brightness to be so strong that I could see many covering it up in order to avoid distraction. So to the price; I would have thought between £2,000 and £3,000 to be about right, so at just £1300, then, this is one exceptional value amplifier, in material terms. Whether it can put this advantage to use sonically, remains to be seen...

## SOUND QUALITY

Listening to Kate Bush's, 'Somewhere in Between', I immediately found the sumptuous styling to be matched by an equally luxurious sound quality. The staging was broad and bold, much like a similarly priced Marantz integrated. Vocals had a great sense of body and were projected with confidence and weight. Whilst lacking the final degree of impact and control of some, the bass response had both depth and solidity in equally impressive measure. Although not as smooth as a pure Class-A amp', such as the Sugden A21a, the balance was pleasantly free from grain and smear. Overall the sound was most involving, if not without some colouration. There were times when I suspected a degree of bloom in the upper midrange could just tinge the vocals thereby preventing first class transparency.

Perhaps contrary to its looks, the A-8000 Mk2 works extremely well with fast paced Rock or electronic music. With Daft Punk's, 'Aerodynamic', loaded into the CD drawer, the Qinpu drew upon a deep reserve of power to offer an uninhibited dynamic range. The electric guitar sounded raw, but was alive with vitality and remained on just the right side of being over exuberant. Unlike some similarly priced Class-A and tube designs, the A-8000 Mk2 won't overly smooth the sound, but neither does it sound brash. It remained true to the music.

This sense of realism continued with Johnny Cash's, 'Hurt'. This is a recording where the volume noticeably increases towards the

end of the track and the sound does harden. The Qinpu was faithful to this but, yet again, didn't have me reaching to turn down the volume as some harsher sounding rivals can do. Although the music did harden, it was as a result of the recording alone and not emphasised by the amp'. In other respects I did notice that there wasn't quite the focus of sound that some offer. It seems that in a bid to provide such an expansive sound stage, some of the precision of rivals has been sacrificed slightly.

A feint lack of precision was also detectable with Joe Jackson and Marianne Faithful's 'Love Got Lost'. Whilst having decent presence and fine decay the percussion just missed the final edge of attack and resolution that could be taken for granted with Naim's similarly priced Nait pre/power rival. Yet, despite this, I still came away feeling that the A-8000Mk2 was a well-balanced amplifier. A slight degree of edginess was always there to remind the listener that this isn't a pure Class-A design, but then again no Class-A amplification at this price could match its sheer dynamic power. In all honesty, they'd also struggle to get to the core emotion of the music quite as well as the Qinpu managed so effortlessly.

Where a well-designed Class-A, such as the Sugden A-21, would score over the A-8000 Mk2, is in terms of flow with Classical music. Whilst the Qinpu provided a sweet and smooth top end, particularly benefiting violins, it didn't quite have the seamless ebb and flow of the very best. There was some colouration around the cellos that hindered this and also meant that the A-8000 Mk2 wasn't quite as transparent as the best. On the plus side, the excellent dynamic reach and scale meant that

"no Class-A amplification at this price could match its sheer dynamic power"

even the largest orchestral pieces could be reproduced without fear of compression or unduly limited bandwidth. Once again, whilst not perhaps scoring top marks in terms of technical presentation, the Qinpu remained a thoroughly engaging listen.

The Qinpu A-8000 Mk2 is no giant killer. Whilst its construction is as good as that of amps costing twice the price, the sound quality isn't. Putting things into perspective, though, at £1,300 the A-8000 Mk2 is still an immensely impressive and capable amplifier. The balance between a raw earthy sound and refinement is extremely well judged, and there can be few that could fail to warm to the Qinpu's emotional and powerful response. What this amp' lacks, though, is the final polish to truly make it first among equals. Still, there is still very much to recommend the A-8000 Mk2 - its intimate relationship with the recording alone is enough for me.

## VERDICT

Amazingly well built for the price, with arresting aesthetics and highly engaging sound.

QINPU A-8000-2 £1,300  
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## FOR

- engaging sound quality
- superb construction quality
- excellent value

## AGAINST

- colouration
- limited features
- overly bright LED!

## MEASURED PERFORMANCE

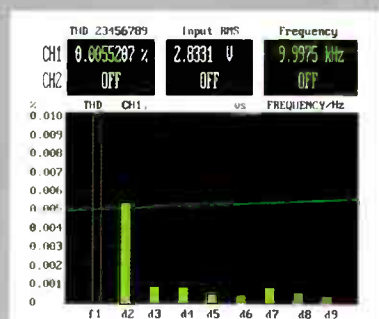
The Qinpu A-8000 delivers a hefty 120W into 8ohms and 156W into 4ohms, helped out by massive heat sinks down each side. This looks like another amplifier carefully designed to produce only low order distortion products, and an even distortion pattern (i.e. stable transfer function) under all conditions of output, frequency and load. Our distortion analysis interestingly shows innocuous sounding second harmonic of just 0.005% at 10kHz. Normally, the crossover distortion that usually dominates here produces a varying pattern of higher order harmonics, but not in this amplifier. So I would expect a smooth sound at least, free from all forms of edginess, or greyness of colour.

Frequency response was wide, stretching from 5Hz up to 136kHz, within 1dB. There's no band limiting here and feedback may be high.

Sensitivity was mediocre at 510mV for full output, adequate for CD but a bit low for sources giving 300mV maximum output.

The Qinpu looks to be well designed. It is a powerful, low distortion amplifier that should sound at least smooth and civilized. MK

Power	120watts
CD/tuner/aux.	
Frequency response	5Hz-136kHz
Separation	92dB
Noise	100dB
Distortion	0.005%
Sensitivity	510mV



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**WIN A SUPERB FUNK FIRM VECTOR TURNTABLE IN THIS MONTH'S GREAT COMPETITION!**

**H**ere's your chance to win a fantastic new audio-ophile turntable from the designer who brought the world the great Pink Triangle marque! This is what Channa Vithana said about this beautiful bit of kit in the March 2006 issue of Hi-Fi World...

"There are currently two Funk Firm turntables. The £760 Funk Vector differs from its lower-cost £450 Funk sibling with the inclusion of the bespoke Vector Drive system. Vector Drive consists of three asymmetrically aligned pulleys for the belt; one is actively connected to the DC motor, and two are passive. Vector Drive is due to the Funk Firm's dissatisfaction with conventional one pulley systems... The three pulleys drive the belt around an Acrylic sub-platter. The two passive pulleys are affixed to a curved metal plate which is screwed into the plinth.

The sub-platter locates the surgical stainless-steel spindle that is situated within a "sapphire slug (which is) precision ground and shaped to accept the hardened steel ball bearing fixed into the main sleeve". The bearing mechanism is sited within an oil bath to keep it continuously lubricated and to also apply damping. The intricately curved plinth evokes abstract artistic sensibilities from the fifties and sixties and is flawlessly finished with a deep, mauve-like metallic gloss. The power supply feeds the DC motor and its

incorporated speed control, which is operated by a finely machined and artistically fashioned metal knob...

The Funk Vector is a deceptively simple yet technologically interesting turntable comprising clever lateral thinking grounded in science... (it) is an aesthetic success where it manages to be fluidly modern yet work harmoniously in either traditional or contemporary milieu – and it does so by being utterly distinctive.

Designed like no other 'affordable audiophile' turntable in its price category, it came as no surprise to find that the Funk Vector sounded quite special... it produced a beautifully elegant harpsichord from the 1975 release 'Scarlatti Harpsichord Sonatas' by Blandine Verlet... and I could really appreciate the lower-frequencies of the harpsichord, which were stunningly realised, with depth and dynamics. Indeed, the harpsichord had a finely crafted three-dimensional quality that made it beautifully lifelike. It

boasted a gloriously wide dynamic range... The title track of 'Welcome To The Pleasuredome' by Frankie Goes To Hollywood had a huge, epic feel. There was simply more musical information on offer throughout the complex production, than its price rivals. Details like timbre were excellent with real sophistication and finesse. The sound opened out really wide with excellent spatiality and the music on 'Welcome...' simply sounded effortless yet engaging where finessed details like the powerful drum crescendos were authoritative... A fascinating bit of kit, the Funk Firm Vector brings extremely high levels of musicality to an already excellent class. Coalesce the qualities of artistic exposition and technological intelligence with stunning sound-quality and you have one of the best sub £1,000 turntables now in production.

If you'd like to win one, then all you have to do is answer four questions. Send your entries on a postcard by 31st March 2006 to: **April 2006 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**



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**QUESTIONS**

[1] This deck features what?

- [a] Vector Drive
- [b] Hector Jive
- [c] Rector Hive
- [d] Sector Live

[2] What type of motor is used?

- [a] DC
- [b] internal combustion
- [c] jet
- [d] turbine

[3] What selects the speed?

- [a] a metal knob
- [b] remote control
- [c] a rocker switch
- [d] a touch keypad

[4] CV concluded by saying that the Funk Vector is...?

- [a] "one of the best sub £1,000 turntables now in production"
- [b] "not that bad a job"
- [c] "alright if you like that sort of thing?"
- [d] "better than life itself"

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**JANUARY 2006 SHANLING CD-T80 CD PLAYER WINNER:  
Michael Fowler of Chelmsley Wood, Birmingham**

# Special Delivery



**If there's one company famous for making affordable audiophile CD spinners, it is Marantz. The marque has consistently made smooth, lucid and musical machines, and the CD5001 'Original Special Edition' promises more of the same. Dominic Todd listens in...**

If the Marantz CD5001 OSE were a car, it would be the great Volkswagen Golf GTI. Like the Golf, budget Marantz digital disc spinners have been amongst the nations favourites for decades. Also like the Golf, whenever a new version is realised, then you can bet your bottom dollar that it won't take long for the tweaked and tuned GTI or, in the Marantz's case, 'Original Special Edition', to be launched.

To make a decent OSE, of course, you've got to start with something pretty special in the first place; and the CD5001 is just that. Launched in the summer of 2006, the CD5001 provided a demonstrable leap in build finish and presentation over its predecessors. Whilst the casing is no thicker than average, the front panel is aluminium. True, it's cleverly formed to look a lot thicker than it actually is, but the overall impression is one of a solid, good quality player – something that couldn't be said of the CD5400 OSE. Inside, the CD5001 uses a Cirrus Logic CS4392 24/192 DAC and Sony transport and, as these are both decent components, the OSE version sticks with them.

The mods made to the OSE model are, as ever, more tweaks than root and branch changes – they're

for the KI Signature version. So, what we have here are beefed up power supply lines, the widespread use of Elna capacitors and the addition of ferrite rings to both the display and headphone cabling. The latter of these should help reduce internal noise caused by the (extinguishable) fluorescent display with the headphone output benefiting from a cleaner signal too.

Elsewhere, the Marantz shows a good construction quality and a very neat finish. Perhaps most importantly in this fiercely fought sector there are some nice touches, such as copper screws and lid dampers, that help Marantz emphasise its audiophile intentions just that bit stronger than the rest. Most of the other components, such as the frame transformer and the average quality circuit board, are unremarkable but, given the price, they are no more so than most of the competition.

In terms of features, the Marantz has everything you could reasonably ask for. There are both optical and coaxial outputs, with all the RCA phonos being gold plated. The transport will read CDRW discs and there's even CD Text for the few discs that come with the feature. The headphone socket features its own amp and volume control and, if like previous Marantz CD players,

should be of better than average quality. Finally, there's the unusual provision of a pitch control. Quite what use this 15-step device has in an audiophile player is unclear, but perhaps there is an enlightened dance school somewhere out there that could make use of the feature?

## SOUND QUALITY

Looking back over my listening notes, the adjective that's made constant reference to is "excellent". For the price, the CD5001 OSE is a top-notch performer although, it must be added, not quite flawless.

Starting off with The Brand New Heavies' 'Soul Flower', and percussion was crisp and precise, without ever becoming splashy and, given the price, the level of detail retrieval was well above average. Vocals were extremely well formed with the quick breaths taken by the energetic rappers clearly audible, yet not intrusively so. They also possessed a believable colour and texture that would have been alien to a CD player of this price a decade or so ago. In comparison with other CD players, including Cambridge's super Azur 640C v2, I found the timing a little slow. It was by no means leaden, but the bass just didn't quite bounce along to the same beat as the best. This aside, the performance was excellent. The



**THE RIVALS**

The one CD player that Marantz must have wanted to beat but, just, failed to is the Cambridge 640C Azur v2. Now in Mk2 form the 640C has retained its fine finish and, of course, that beautifully crafted remote control. Whilst the Marantz has caught up in terms of finish it is let down at the last hurdle by its tacky remote. Much the same is true of the sound quality. Measure for measure the 640C v2 matches the Marantz. It has the same exquisite level of detail, the same generous dynamic range and all with a sense of refinement to boot. Where it scores, though, is in providing a pacey bass response to match. It might not go quite as low as the CD5001 OSE, but the enhanced timing is, in my opinion, worth the trade off. The ultimate praise that can be said of the 640C is that whilst the CD5001 OSE can match players costing half as much again, the Cambridge can, and does, give players twice its price a tough time.

Although these two are the front-runners at this price, NAD offers an extremely capable couple of players at either side. At £200, the C521 BEE is everything a budget player should be: textured, rhythmical and a thoroughly involving listen. It's not quite as oomposed as the others, but it never fails to engage and works well with a wide variety of music genres and partnering equipment. The real NAD star, though, is the C542. At £330 it is pricier than its rivals but for musical architecture and structure it's hard to beat. Its timing is better than the Marantz and it matches it for note formation and accuracy of timbre. The only area of caution I'd point to with the C542 is in its bright treble response. With most equipment it's fine, but if you happen to have bright sounding ancillaries it's perhaps not the best choice. In terms of finish, whilst its improved, the C542 can't match the Cambridge or Marantz which, given the price differential, is somewhat disappointing. Overall then, the v2 Cambridge 640C still leads the field, just.

upside of the slightly turgid bass was excellent weight and the integration with the mid-range was reasonably seamless, too.

Moving to Blondie's 'Happy Dog' provided the CD5001 OSE with the opportunity to demonstrate some of its other fortes. First off was that broad, expansive soundstage which has been something of a feature of Marantz products of late. Within the stage, the sound didn't flow quite as effortlessly as some, but the CD5001 OSE could never be accused of being mechanical sounding. Instead there was that characteristic earthy bounce that made the Marantz engaging to listen to, despite the timing issues. Other elements of the music, from the cleanly separated vocals to the extremely well portrayed electric guitar, were as good as £250 CD players get.

Some years ago, I used to find that budget Marantz CD players appeared to have a problem with piano timbre. Recently they've greatly improved, and the CD5001 OSE is no exception. With Peter Cincotti's 'St Louis Blues', the piano's timbre was full-bodied, textured and with just the right level of note decay. Percussion had fine attack and drive, yet this never overwhelmed the music. Likewise, the brass was produced with just the right amount of enthusiasm whereby it sparkled but didn't grate.

Characteristically, the bass was a little slow, but the weight and depth weren't an issue. I should think that when Marantz tuned the player, they favoured a little extra bass weight

over speed which, given the taste of the market, is probably no bad thing.

In times gone by, if you wanted

the difference is now extremely slim and, it should be remembered, both cost around 50% more. In terms of staging – both width and depth, the Marantz once again confidently leads the class.

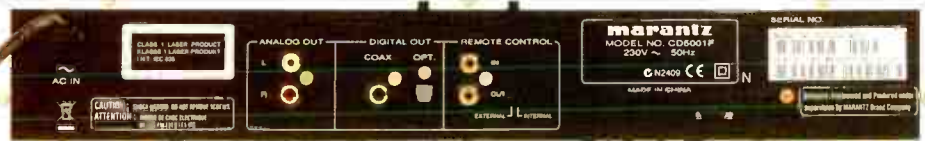
That Marantz has improved its build quality cannot be denied, and they can also be congratulated for producing such a fine sounding CD player for the price. In the best tradition of SE and OSE players, the CD5001 OSE holds it own at not only this price but also up to about 50% more - no mean achievement. In terms of staging and detail resolution the CD5001 OSE is one of, if not the, best at this price. The timing, though, is something of a disappointment. Whilst there's that characteristic Marantz bounce, the bass is just a little slow witted – especially compared with some rivals. That's the crunch and the reason that the CD5001 OSE just misses out on its fifth, full star. Nevertheless as an indication of the state of the budget CD player, the CD5001 OSE proves that all is not just well, but positively thriving.

**VERDICT** £  
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www.marantz.co.uk

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- detail resolution  
- improved build

**AGAINST**  
- timing issues  
- intense competition  
- plasticky remote



a CD player for rock or jazz you bought a Marantz, but if you wanted it for Classical music then you bought an Arcam or Rotel: Times have changed. These days, the latest crop of Marantz players are equally adapt with Classical music and, if you need proof of this, then just take a listen to the CD5001 OSE with the genre. With Mahler's Fourth (Los Angeles Philharmonic), I found that refinement and subtle textural tone are now key Marantz qualities. There was a great sense of accurate instrumental timbre and a subtlety with decay and note formation that would have been unknown to previous Marantz CDs. Something like an Arcam CD73T or Rotel RCD-02 may still have the edge here but

**MEASURED PERFORMANCE**

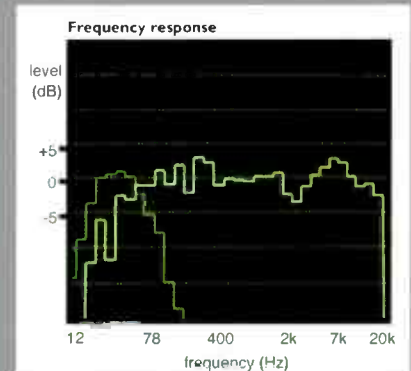
The CD5001 has a distinctive impulse response that, when convolved, shows that this player has a subtly lifted low frequency region below 500Hz and rolled off highs. Put these effects together and you get a basic tonal balance where there's a useful more warmth and body than usual, plus a less challenging presentation of treble. I'd expect a smooth and full bodied sound balance.

Distortion was minimal, as far as 16bit goes, through the player's dynamic range. Our analysis at -30dB - a typical music level - shows 0.0048%, a very low value.

Output was normal at 1.94V and jitter minimal at less than 50pS.

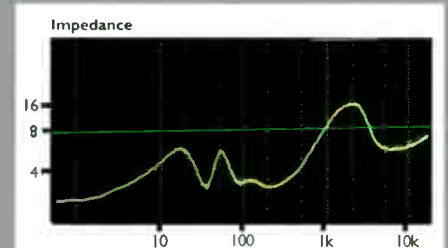
This is a carefully crafted CD player, measurement suggests. It is likely to offer interesting results. NK

Separation (1kHz)	140dB
Noise (IEC A)	-118dB
Dynamic range	110.7dB
Output	1.94V



Frequency response (-1dB)  
CD 4Hz - 21.8kHz

Distortion	
0dB	0.002%
-6dB	0.0005%
-60dB	0.21%
-80dB	4.1%



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Advantage CD15 in black, just fully serviced (£4595)	£1695
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Musical Fidelity A3cr pre, Unmarked condition	£395
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Nordost SolarWind 1.0m interconnect.	£49
Nordost Red Dawn revll 1.0m interconnect, as new.	£150
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"the hi-fi separates market has had a serious shake up over the past fifteen years..."



## dominic todd

**M**any of you reading this will not just love hi-fi, but also other mechanical devices too. It goes without saying that a curiosity in the workings of hi-fi usually also means an interest in the likes of cars, bikes (of both varieties) and even the humble vacuum cleaner - especially if it's of the like-it-or-loathe-it Dyson variety.

I know of many in the trade who also have a similar fascination with watches. I am not one of them. To me, any material article should either be practical or beautiful and, ideally, both. For a watch to be practical it need only tell the time in a clear and accurate manner. I usually find a £30 Swatch perfectly adequate for this job.

So to the beauty aspect. I'm sure this will offend many of my friends and colleagues, but the site of a hideously expensive watch lolling loosely around a wrist is just hideous to me. They may proudly brag of a four or even five digit price tag, but the result is often vulgar to my eyes, and never any more useful at telling the time than a cheaper model.

Hi-fi isn't like this, of course, because its job is to make music and, by and large, the more expensive models do a better job of it than the cheaper ones, but more of that later. What amazes me about the watch industry is how many of the brands get away with it. Huge sponsorships and advertising campaigns have to be paid for somehow, of course, and this usually comes from fat margins. Although, like any other trade, the amount of margins made varies, I'm sure that any hi-fi company would be glad to get hold of even the lowest

of these. In short, the material value in expensive watches is like that of many other luxury goods - you're paying for exclusivity and the brand rather than anything of material, and I would argue aesthetic, value.

Once again, hi-fi components couldn't be further from this, but it hasn't always been the case. When I first began to be interested in hi-fi in the 1980s there were far more companies than there are now. Many of them have simply disappeared with only a handful of new names appearing and, more importantly, surviving. There are various reasons for this, one of which being a declining market. It's often this reason that failing companies quote when going to the wall. Yet, it has to be said, that the hi-fi separates market has had a serious shake up over the past fifteen years that many other industries, including the car and, yes, the watch industry could learn from.

New technologies and outsourcing have meant that overpriced and under-developed hi-fi has appeared to be just that - overpriced and under-developed and, surprise surprise, people are no longer prepared to pay for it! The companies that produced it have struggled and ultimately gone under. What we are left with, then, is a lean, efficient industry, even if it's one that is unlikely to make many more millionaires.

I was reminded of just how good the best hi-fi companies are these days, on two recent occasions. Whilst looking into second-hand Naim products, I was pleasantly surprised as to just how good their service back up is. Now, like many other prestigious UK brands, Naim have made a few clunkers in the past,

but the present range is first class. Furthermore, if you happen to own a Naim NAP250 power amp from, say, 1985 did you know that Naim will not only be able to fully service it for you, but also re-case it to make it look like the latest version? Now that's the sort of service that I feel adds real value to a product.

My next positive experience came at, of all places, the Natural History Museum in London. Recently, they've hosted an exhibition on diamonds or, as you may prefer to think of it, 'king bling'. Yet, there amongst the dazzling tiaras, rare stones and even the Millennium Star, stands a B&W tweeter. Although no stranger to London museums (they have a Nautilus at the Science Museum) I was delighted to see B&W get a look in at such a prestigious display. Of course, as the super geeks of you out there will already know, the latest B&W range of Matrix speakers features diamond tweeters and, hence, its inclusion here. That said, there are many other products that utilise diamonds in a practical sense and, especially considering that space was tight, it was no mean feat that B&W got a showing at all.

What's perhaps even more pleasing is that I know these two companies are not alone. There are plenty of other hi-fi companies out there with not just excellent products, but also the service, marketing and public relations to make them truly world-class. The hi-fi industry may have had a tough time of late, but what is for sure is that if any of the current crop go down it won't be through lack of trying. It's an industry of which we can be proud. ●

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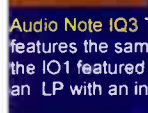
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**Denon DL-103 MC cartridge.** The 103 has been in production since 1963, and for good reason - its performance is legendary throughout the world. Probably the best value cartridge available today at just £100.



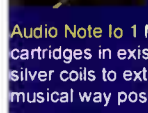
**Denon DL-304** This is a wonderfully transparent sounding MC cartridge that is almost unmatched for its midband quality which is especially amazing when its low £210 price is taken into account.



**Audio Note IQ3** This is Audio Note's top MM cartridge and it features the same diamond and titanium cantilever also used in the IO1 featured below. It successfully captures the energy on an LP with an involvngly dynamic and fast sound: £350.



**Music Maker 3** The Music Maker is a moving iron cartridge that rightly has become a legend in its own lifetime. Its effortlessly musical presentation makes most other cartridges sound as if they're trying to hard: £625



**Audio Note Io 1 MC cartridge.** Surely one of the finest cartridges in existence, the Io uses Alnico magnets and pure silver coils to extract everything from your LP's in the most musical way possible: £1,595.



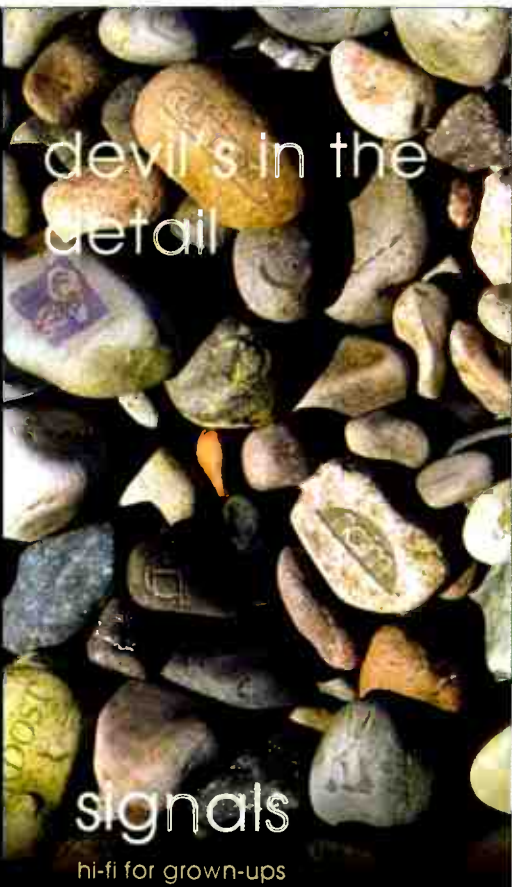
We firmly believe that the way to get the best performance from any MC cartridge is to use a high quality step up transformer. It is for this reason that we stock a range of designs, from the new **Note Products Step-Note** at £200 (pictured left), the **Audio Note** range priced between £390 to £4,500 and the **Music First Audio** copper or silver wired designs which start from £1,500 and offer a variety of ratios and impedances via front mounted switches.

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devil's in the detail

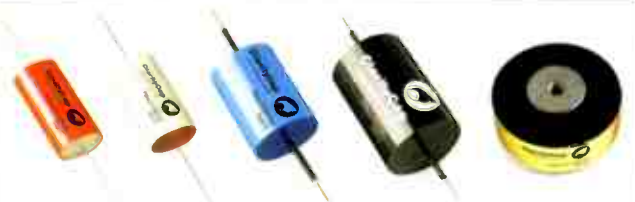
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"tests which they hoped would show that 720p provides higher picture quality than 1080i showed the opposite"



## steven green

**S**ky is currently gearing up to launch its HDTV service, and cable will be launching their HD service later this year. The hype about HDTV's picture quality has already begun in the newspapers, so will it really provide a huge improvement to TV picture quality?

HDTV is an improvement over SDTV (standard-definition TV) in one key respect: the images have higher resolution. This means that the pictures are sharper and you will be able to see finer detail – hence the term 'high-definition TV'.

The resolution of a digital TV format is the product of the number of pixels per horizontal picture line, the number of picture lines, and, if the format uses interlaced scanning, an 'interlace factor' of 0.71.

First, I'll just take a moment to explain interlacing. It consists of displaying all the even-numbered lines, followed 1/50th of a second later by showing all of the odd-numbered lines – each picture line is updated 25 times per second. 'Progressive' is the alternative scanning method where all of the picture lines are refreshed 50 times per second. Progressive formats therefore display twice as many pictures per second as interlaced formats.

Our current SDTV format uses 720 pixels per picture line, 576 picture lines and does use interlacing. So its resolution is:

$720 \times 576 \times 0.71 = 294,451$  pixels

There are two main competing HDTV formats available to broadcasters. The '1080i' format uses interlacing, 1,920 pixels per line and 1080 lines; and the '720p' format uses progressive scanning, 1,280 pixels per

line, and 720 lines. The resolutions of these formats are as follows:

Resolution of 1080i =  $1,920 \times$

$1,080 \times 0.71 = 1,472,256$  pixels

Resolution of 720p =  $1,280 \times 720 =$   
921,600 pixels

The theoretical resolution of 1080i is therefore exactly 5-times higher than the resolution of SDTV, and the resolution of 720p is 3.1-times higher than the resolution of SDTV.

Of the two HDTV formats, 1080i obviously has the better resolution. However, the powerful European Broadcasting Union (EBU), which represents all of the European public service broadcasters including the BBC, ITV and Channel 4, is trying to convince all of the European broadcasters to use 720p.

They say that the new HD-Ready display technologies, such as LCDs and plasmas, are inherently progressive-scanning devices, so if 1080i were used the pictures must first undergo an interlace-to-progressive conversion (otherwise known as 'de-interlacing'). This, they say, degrades the picture quality. They also claim that 720p requires a lower bit rate than 1080i to provide a certain level of picture quality.

Yes, poor quality de-interlacing does degrade the picture when there's (usually fast) on-screen movement. But de-interlacing is a standard process used in set-top boxes prior to resizing the picture, and high-quality de-interlacing algorithms already exist that can intelligently compensate for on-screen motion.

Also, the new MPEG-4 AVC/H.264 video codec, which will be used for HDTV in Europe, allows the encoder to make intelligent decisions

about whether it is better to encode areas of the picture using interlaced or progressive scanning. However, this feature is only available for interlaced formats.

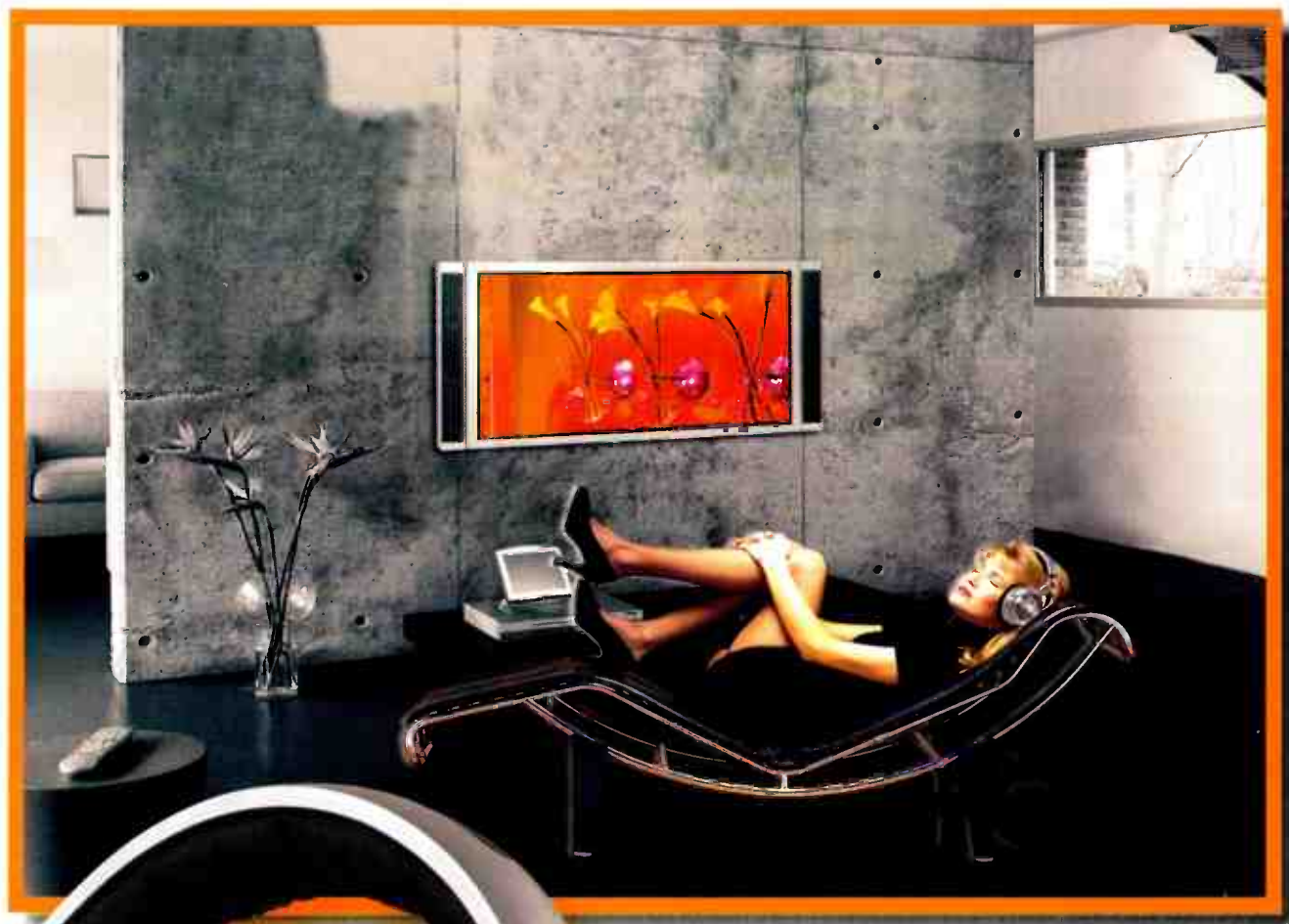
Unfortunately for the EBU's case the picture quality tests which they hoped would show that 720p provides higher picture quality than 1080i showed the opposite at all bit rate levels except the absolute lowest bit rate tested. The only exception was a video clip that consisted of fast-moving action. 720p is undeniably better for rapid action sports coverage because twice as many pictures are displayed per second. But the vast majority of TV content does not contain fast-moving action, and would therefore benefit from 1080i's higher resolution.

It seems to me that the EBU is pandering to the cheap end of the TV market, because it is the very low cost manufacturers who are most likely to sell products that employ poor-quality de-interlacing algorithms. They're also ignoring the fact that more advanced digital technology tends to eventually trickle down to the cheaper end of the market.

The EBU also seems to be pandering to the broadcasters' desire to use the lowest possible bit rates in order to squeeze more channels into the finite amount of available spectrum. Where have we heard that one before?

Don't get me wrong, though, if the broadcasters use sufficient bit rate levels with 720p the picture quality will be much better than we have now. But I just can't help thinking that the EBU is being very short-sighted in recommending that all broadcasters should use 720p. ●

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"only Tannoy did not abandon big, sensitive loudspeakers..."



## noel keyword

It's been a long time since I used a big banger. Somewhere during the late the 1970s I believe, when Hendrix and Led Zeppelin crowded my musical horizon, Leak - then a part of Rank Leak Wharfedale - announced their 2000 range of loudspeakers. At the top lay the sizeable 2075 and somehow it fell to me to review this monster. Amazingly, when invited to take it back, Leak declined. Transport from London back to Leeds exceeded their second hand worth, and as no one else was likely to review them, they might as well stay with me and get some press coverage in the process, I was told. So I became the involuntary - but not unhappy - owner of a monster loudspeaker. It was my first.

One great feature of the Leaks was they had wheels! I could tip 'em backwards and take 'em walkies - but not down the street. My professional interest in hi-fi doesn't extend that far. They were wheeled out into the hall when other loudspeakers came in for review. Leak had been realistic enough to appreciate a loudspeaker unliftable without a crane had to be moveable by some means.

The other great feature was bass that could shake the building. Perhaps it wasn't the hardest hitting or the most controlled, but the huge sandwich bass unit could still deliver a punch that gave lesser loudspeakers quaking cones. At that time Thiele Small parameters and computers were yet to be invented, so loudspeaker bass cabinet design was a bit of a black art. Many large loudspeakers had prodigious bass, but we're talking quantity more than quality here. At times it was like being pummelled by a large blancmange, but the 2075 was as good as they got back then.

After the 2075 came the smart 3090. This had a better bass inductor,

wound from flat aluminium strip I recall, and there was a smooth sounding Isodynamic tweeter. It replaced the 2075's peaky and sharp sounding Mylar tweeter. Both had Leak's very nice plastic cone midrange unit, as well as an upper bass unit, plus a full set of controls to adjust drive unit levels. The 3090 was a lovely listen but in those times lacked cred. in the press. It was just too big to be serious, many people figured, and as for buyers, well they needed big homes for 3090s as they loomed large no matter what you did to disguise the fact. It wasn't perhaps the most insightful loudspeaker, but it was decently accurate and fairly uncoloured, and imaged well as the swivelling top units were mirror image pairs, tweeter innermost, an arrangement that usually works well. I enjoyed mine for many a year, but reviewing needs an insightful loudspeaker and although I hard-wired them to improve the connections the time eventually came to say goodbye.

They were amongst the last of the big bangers; Leak, Goodmans and Wharfedale all gave up on monster bass units mounted in cabinets that could be mistaken for wardrobes. Solid-state amplifiers had grown both powerful and reliable by the late 1970s, leading to emergence of powered 'active' loudspeakers that on paper at least could do everything a wardrobe could do, only in less space. As we all learnt the value of floor space in the 1980s as Thatcher's Britain enjoyed its first housing boom, the big loudspeaker looked even more anachronistic. Why lose amenity when a solid-state behemoth pumping watts into a small cabinet could manage just as well?

As the 80s slid into the 90s though, inefficient plastic coned loudspeakers were displaying all the dynamism of a three-toed tree sloth

on Mogadon. They measured well, and so did the muscle amps driving them, but both were similarly blighted: they made music sound boring.

High efficiency loudspeakers, which by their nature are large loudspeakers, have always had dynamism on their side. By the mid nineties new and better cone materials were appearing, drive motors were improving and efficiency was increasing as a general realisation crept in that boredom wasn't a selling point in high fidelity. I can't say that even in 2006, a long way on after all, there has been a sea change in this area, but at least loudspeaker manufacturers now acknowledge that it makes sense to ensure a loudspeaker is reasonably efficient. An easy way to do this is make the cabinet and bass cones bigger.

Only Tannoy did not abandon big, sensitive loudspeakers. Thank heaven, because the Yorkminsters I've reviewed this month were an experience that bordered on a shock. I have heard Tannoys many a time - the big Duals I mean - and thought I knew them. Now I realise I have never had the freedom to hear them with suitable partnering equipment, in an appropriate room., mainly because of the physical difficulties. And Tannoy have been steadily upgrading them too; the Yorkminster and Westminster today are very modern loudspeakers.

Yorkminster was an experience altogether more overwhelming than 3090. This is high fidelity - big time. Having an orchestra at one end of your living room, or perhaps Darkness, is great fun. It's wonderful to bask in a panoramic delivery that's free of strain. Not many large loudspeakers are as good as the Tannoys, unfortunately. I'm happy to have chosen them to reacquaint myself with what a big loudspeaker can do. ●

# Be In My Video



PICTURES COURTESY OF APPLE

**A**s predicted in our iPod Nano review of a few months back, hot on the tiny wonder's heels comes the expected 5G iPod, with exciting new capabilities. But don't call it a video iPod – Apple were at great pains to point out that it was merely the latest iteration of their iconic player, and it just happened to have video capability added.

But if you have to dip your toe into the waters of video on the move now, is the iPod the way to go? Over the last few years personal video jukeboxes have not been setting the retail world on fire. Such devices are almost always MP3 players as well, but this has not convinced people to shell out the extra few hundred quid they used to cost, so 5G prices have been kept shy of the previously forbidding four and five hundred pound figures you used to have to pay for an Archos or the like. There are now just two iPod capacities, 30GB and 60GB, coming in at £219 and £299 respectively. The new iPod is available, like the Nano, in black and white and shares a new styling with its smaller sibling. Gone are the 'rounded edges' feel of generations one to four: in their place is a flat top surface with hard corners which very much tunes in with the drastically slimmed-down feel of all the new models. Personally I am disappointed that there is not yet an 80GB model to accommodate insane amounts of tracks both music and video, but on the plus side this 60GB is about half as thin as my original 4G 60GB iPod Photo...

**At the risk of being boring, Patrick Cleasby assesses the performance of the new 5G iPod some (not Apple!) have dubbed 'Video', and highlights some of the best (Mac-based) ways of getting the most from it...**

The downside of the relatively affordable costing is that there are absolutely no extras supplied with the iPod aside from the usual nasty headphones and the USB connection cable - in common with the Nano the iPod amazingly no longer supports Firewire for transfer tasks – the only legacy is that it will still charge from an old Firewire cable, whether plugged into the computer or the wall. All this means that if you want to do some of the cool stuff like having the iPod in a remote controlled dock, or viewing photos and videos on a television screen, you need to spend more: Universal Dock with remote £25; AV cable £15; USB Mains power adaptor £19; Apple Remote £19.

The attractive 6.35cm LCD has a narrow black bezel around it inside the clear protective polycarbonate which just gets obtrusive when it is surrounded by white on the old-school coloured model. Black is most definitely the way to go for video users.

Audio-wise, the 5G has not moved beyond the 4G's ability to do 24/48-derived Apple lossless, and a version of Neil Young's 'The Painter' in that format from the 'Prairie Wind' DVD revealed that the 5G has possibly lost the constant audio improvement track record of the pre-video iPods, sounding more brusque and less subtle to these ears than the same file played on the 60GB iPod Photo. This may be exclusively at the obscure 24bit-fiddler end of things though – straight CD rips of Robbie Williams' 'Advertising Space' to lossless sounded very similar on the two players, once the apparent higher volume level of the 5G had been adjusted for.

To get into video testing you must first obtain some compatible video files. There are essentially three main ways to do this. The first and most simple, and the one which Apple would obviously like you to do to enable them to grow their revenues still further, is to download

video from the iTunes. In rip-off Britain we still seem to be at a disadvantage, being asked to part with £1.89 per video for the privilege, compared to a similar dollar price level in the states. If you're being tight you could always delve into the murky world of video podcasts, but this being a hi-fi magazine let's assume you want to test the device out with some music material!

I was overjoyed to find the video for a twelve year old single I never expected to ever see for sale on the iTunes, so I downloaded Darden Smith's 'Loving Arms' clip. The file came in at just over 17MB in size, so equivalent to about four iTunes 128kbps AAC files of similar duration (four minutes). The overall bitrate was around 590kbps, so assuming the audio is at the 128Kbps quality, that leaves a paltry 460kbps for the much more demanding video. The results were a delight, in that a typical 90's promo with smoky, smeary effects was rendered plausibly, not only on the small iPod Screen, but also on a 32" Toshiba LCD TV, using the old composite video hook up cable originally supplied with the iPod Photo. From a musical point of view, the audio quality is also on a par with iTunes downloads as the audio in the file is essentially in the same codec as an audio-only Apple download.

If you think all that sounds complicated, just wait until we get into the morass of options two and three. Fundamentally the remaining interest divides into making iPod compatible videos from your own movies, and the slightly more illegal derivation of iPod video from your own DVDs (Fair use! Fair use!). To understand the quality/file size trade-off issues involved it may be useful to understand that there are two types of MPEG4 video permissible at varying data rates and image sizes – to quote Apple these are: H.264 video (The Apple-originated form of MPEG4 which will be used in HD broadcast and DVDs); up to 768 Kbps, 320 x 240, 30 frames per sec., Baseline Profile up to Level 1.3



with AAC-LC up to 160kbps, 48kHz, stereo audio in .m4v, .mp4 and .mov file formats. MPEG-4 video: up to 2.5 mbps, 480 x 480, 30 frames per sec., Simple Profile with AAC-LC up to 160 Kbps, 48KHz, stereo audio in .m4v, .mp4 and .mov file formats.

Gobbledegook? Let someone else take all the pain out of thinking about it by supplying a neat application which just gives you the iPod movie file you want...

Option 2 can be achieved relatively easily using the Pro facilities of QuickTime, whether you are on a PC or a Mac. Once you have a version of QuickTime 7 for either platform you can order a Pro code to unlock it from the Apple website for £19.99. There is now a specific export option for iPod, so if you have any home movies, TV captures or anything else in a QuickTime video format you should be able to create an iPod compliant file. The downside of this route is that while easy, it does not provide a lot of flexibility to the expert user.

Given that H264 is an Apple codec, that Macs have always been ideal video machines, I do not intend to dwell too long on other PC options for video file preparation. QuickTime Pro is about as far as I go on the PC side. It is to be hoped that Steve Jobs' soon anticipated further forays into the digital home will persuade more people to appreciate the ease with which these video manipulations can be done on the Mac

For the enlightened switcher, the \$10 shareware Podner, from www.splasm.com is a great answer to

look quite spiffing once converted. Sometimes the audio quality can be wanting on such older files, and if you're really concerned and have the expertise you can always resync the soundtrack to the movie from a CD, but that is more of an advanced class thing...

To crack option 3 on a Mac, immediately after the appearance of the new iPod, Handbrake, a highly useful application which had been around for a while was tweaked to allow the baseline profile encoding which enables it to do compliant H264 video as well as generic MPEG4. Handbrake 0.7.0 can be found via www.versiontracker.com, and is fantastically powerful considering it is freeware. Insert a DVD in your drive, run Handbrake, tweak a few settings and you can create a very high quality H264 file, every bit as good looking and better sounding than the iTMS videos.

To create the best looking, most compact, highest quality audio file, simply set Baseline profile encoding, 600Kbps video encode, 48KHz 160Kbps audio, ideally from a stereo rather than 5.1 audio track, then set the scaling to 320 pixels wide, deinterlaced and you're away.

The final stage to ideal iPod music video file usage is to import and correctly tag your file in iTunes 6. If you do not flag music videos as such, they do not present in 'album' order on the iPod even if the track numbers are correctly set, an annoying interface niggle. The idea here is, say, The Cure or Pulp's Greatest Hits DVD, Handbraked, and tagged up as a video 'album'. The hidden advantage, given that we can't watch our screens all the time, is that with the 'Music Video' type set you can access just the audio portion of that file through the Music menus on the iPod, listening to the Greatest Hits just as if it were a Greatest Hits CD rip - quite neat!

**CONCLUSION**

So, the non-video video iPod turns out to be nearly as excellent as all its predecessors - the iPod line does still appear to be going from strength to ever-more innovative strength.

**VITAL STATISTICS:**  
size: 104x65x14mm  
screen size: 635mm diagonal  
weight: 157g



Once a movie file is loaded, simple presets can be chosen. MPEG4 or H264, take your pick!



Handbrake - 6 or so settings and high quality iPod video is yours, straight from your DVD!



The important bit - scale to 320 pixels across for compatible H264 encodes... deinterlace helps too.



Podner presents a simple, drag-and-drop target interface.

flexible video file encoding on Mac - just drop your movie on the app, set your choice of codec and quality and away you go. I have found this particularly useful when taking all those previously unviewed Enhanced CD single movies and converting them. Even older examples encoded in older codecs like The Divine Comedy's 'Gin Soaked Boy' can

**VERDICT** ●●●●●

A flawed gem - lovely, but the finish, hi res audio quality, limited storage and minor first video gen interface issues detract slightly.

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Command & I reveals that there is a new 'Video Kind' option in iTunes 6 - set to 'Music Video' to get the most out of your music DVD rips.

# bass-ic instinct

PART 3: The Crossover

Peter Comeau describes the crossover and various aspects of performance.

For those who haven't read the first two articles, the WD25A kit loudspeaker is based on an aperiodic cabinet design that first achieved popularity in the Dynaco A25.

Why aperiodic? This type of cabinet loading offers the good bass clarity of a closed box (so-called infinite baffle) system, but with much lower resonant peak, in other words it gives you bass without the boom.

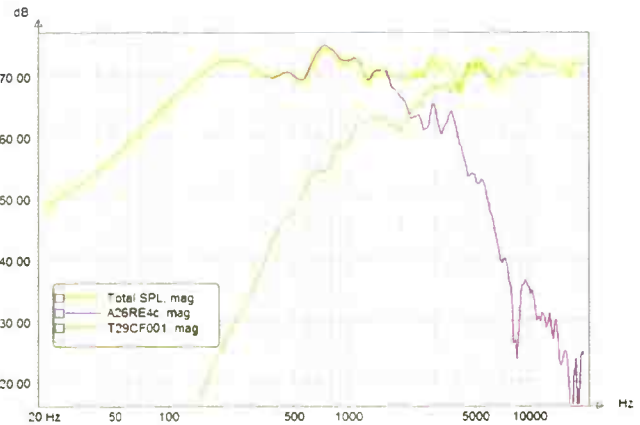


The original Dynaco A25 used a simple crossover; just a series capacitor for the treble unit with an L-pad attenuator. It managed to get good subjective results because of the natural midrange qualities of the bass unit, plus it was designed to sit on the floor, or on a shelf with its back against the wall. With the help of SEAS of Norway we have designed a bass unit of similar specification and qualities but, this time, we're aiming at a stand-mount design.

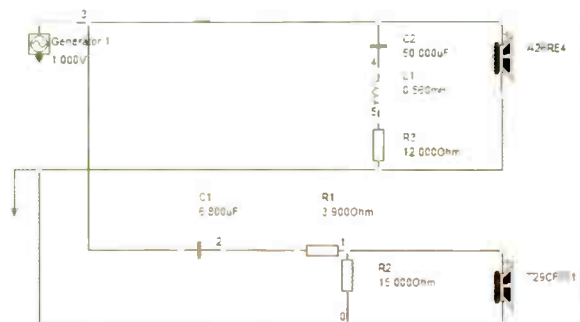
In the '60s and early '70s it was common to place speakers on the floor unless they were small, in which case they sat on a shelf. A speaker with a 10" driver like the Dynaco would, in most cases, end up sitting on the floor. Why should this be important? Because the nearby boundary boosts the upper bass considerably and affects the whole balance of the speaker.

Nowadays, we wouldn't consider placing a quality speaker on the floor unless it was a floorstander. We follow the modern dictum of positioning a speaker so that the treble unit is near ear level when sitting. Raising the bass unit also provides for greater bass clarity, as does putting it on a stand, largely because it excites room modes less.

However it also gives us a problem with our new design as the upper bass/lower midrange looks rather



Graph 1 - Frequency response of treble unit (green) and bass unit (purple) operating independently, and together (yellow), when fed by the simple crossover below.



weak compared to the upper midrange. Thankfully, to a large extent, this can be adjusted by placing the speaker's back against the wall, a factor which typically boosts the energy response below 400Hz by 3dB – just what we need.

With this in mind, and our XL treble unit installed, we can achieve a fair balance using a single series capacitor and L-pad resistor attenuator (see Graph 1). This is a good basis for experimentation and, indeed, sounds pretty good with a forward, and very detailed, midband and a fine degree of finesse in the treble.

Many experimenters would have left it there - and you are free to do so if you want to keep things as simple as possible. However, in subjective testing, we felt we could make some improvements to the performance.

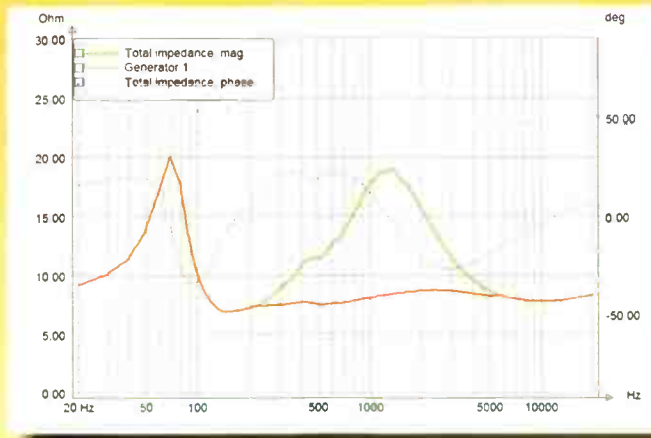
But first, one of the main objectives of the WD25A was to make an 'easy drive' speaker, one which is suitable for all classes of amplifiers to drive. The Aperiodic loading takes care of the bass end, but through the crossover the typical impedance 'peak' yields other problems, particularly regarding the matching impedance for valve amplifiers.

Plugging the response and impedance curves into our LspCAD software gave us a simple LCR circuit across the bass unit to compensate for its rising impedance with frequency. As you can see from the comparison in Graph 2 this flattens the impedance perfectly and has no effect on the response at all. So we can go ahead and use this with our simple treble circuit to form our Stage 1 crossover.

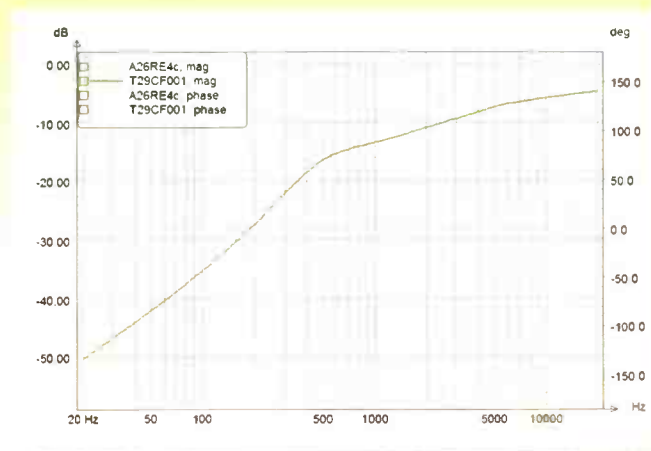
Perhaps the major problem with all such simple crossovers, however, is the considerable overlap between the frequencies carried by the drive units. You can see this to a certain extent in the crossover graph 1, but it really shows up in the picture of the treble crossover transfer function (Graph 3). Here you can see just how far the drive to the treble unit extends down in frequency. Even allowing for the fact that the XL driver has a very low fundamental resonance there is bound to be some distortion occurring as we feed it significant levels of energy below 1kHz.

It also does not integrate perfectly throughout the crossover, as can be seen from the peak centred around 3kHz in Graph 1. This is because the bass unit has a natural roll-off which approximates to 10dB per octave, far removed from the 6dB per octave of a first order crossover. By the way, the peak around 750Hz in all the graphs is as a result of baffle edge diffraction, not a peak in the bass unit output as such, and is fairly innocuous subjectively.

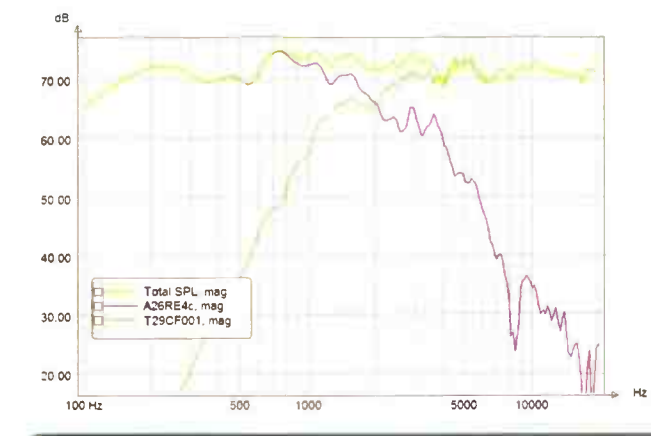
The simple answer is to make the treble crossover second order which, with a bit of judicious damping, can be made to align very nicely to the roll-



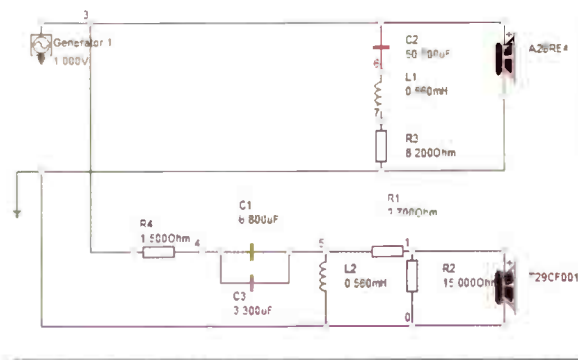
**Graph 2 - Placing an LCR network comprising L1, C2, R3 across the bass unit removes the rise in impedance (green) of the bass unit, resulting in flat impedance (orange).**



**Graph 3 - Voltage fed to the treble unit by the crossover. The slow roll off allows through low frequencies, increasing distortion.**



**Graph 4 - Drive unit output and total integrated response when using second-order roll off to the treble unit (green). This better removes low frequencies, reducing treble distortion.**



**The Stage 2 crossover, with an inductor L2 added to increase the rate of low frequency attenuation.**

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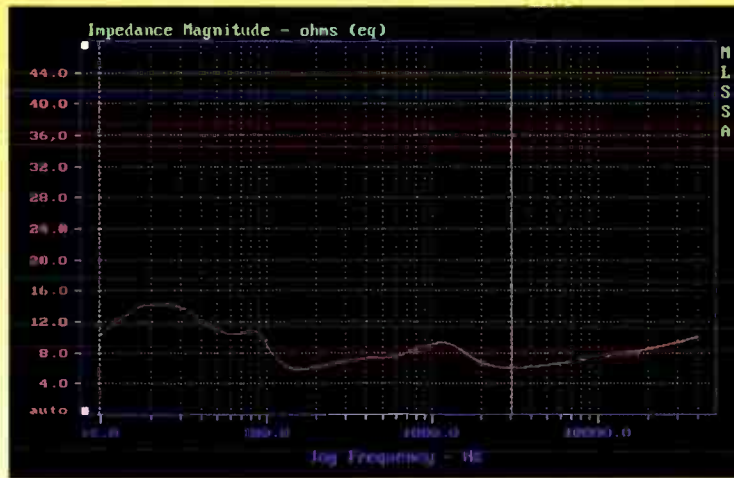
off of the bass unit (see Graph 4). You'll see that we've split the treble unit attenuation here to before, as well as after, the capacitor. This is because the coil presents a low impedance shunt to the amplifier at high frequencies so we use some resistance to equalise the impedance, as well as adjust the compensation network across the bass unit slightly, and maintain our 'easy drive' capability. This still leaves the bass unit directly driven by the amplifier and we'll call this our Stage 2 crossover.

Having now achieved a much 'cleaner' treble performance the area through the crossover could be considered a touch forward in character. Personally I don't mind this too much, but it's all a question of taste. With the speakers near a rear wall it is balanced quite nicely, especially when driven by a valve amplifier. The speakers are unnervingly 'hear through', however, and not at all forgiving of source equipment defects, and there is mild coloration of voices etc.

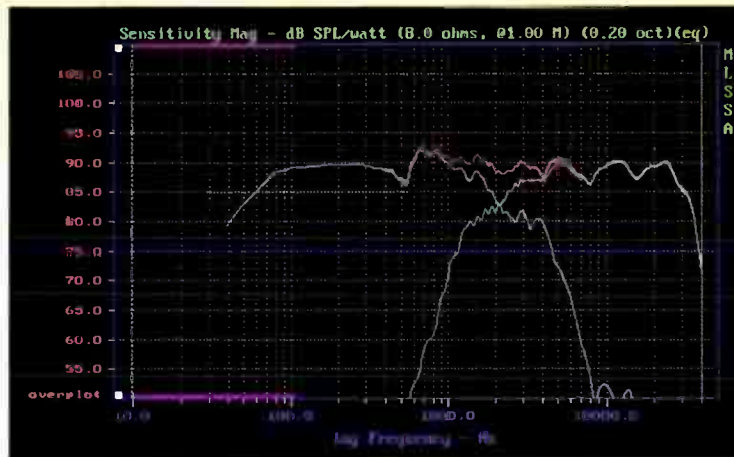
For those who prefer a more 'neutral' performance that is, perhaps, a little easier on the ear and less revealing of the behaviour of amplifiers and CD players, the answer is quite simple. We add a small inductor in series with the bass unit, with the handy advantage that, now, our impedance compensation also doubles up in steepening the roll off of the bass unit and giving us an even better match to the treble unit, seen in Graphs 6 & 7. It sounds very simple explained like this, but it took a couple of weeks of LspCAD juggling and subjective tweaking to get to this point. This is the final Stage 3 crossover.

The Stage 3 crossover concept works equally well with the standard treble unit, the main difference between the two being due to the higher, ferrofluid damped, fundamental resonance of the standard unit, and this gives us a slightly revised circuit. You'll see that we've removed the resistor across the unit and adjusted the component values to achieve the same type of crossover performance. Both drive units offer a clean and clear treble output, however the XL unit gives remarkable detailing throughout the treble and midband and is the one to go for if you can afford it.

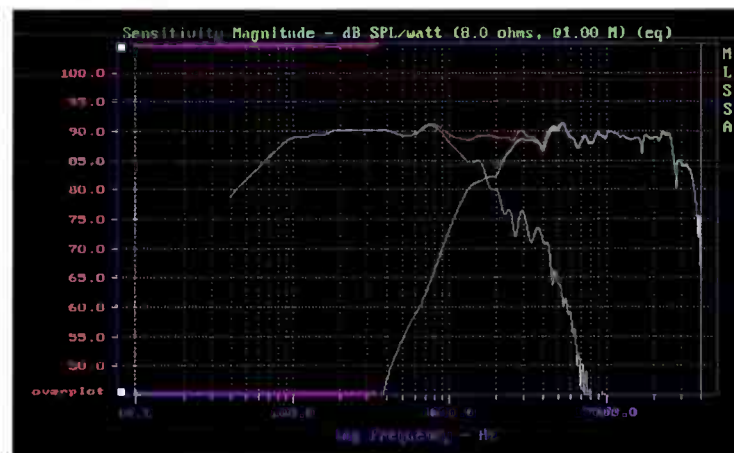
Graph 8 shows the final 'in-room' response of the XL system with the Stage 3 crossover. As you can see it is well balanced tonally and sounds completely natural on a wide range of musical styles. The one aspect that stands out is the easy ability to



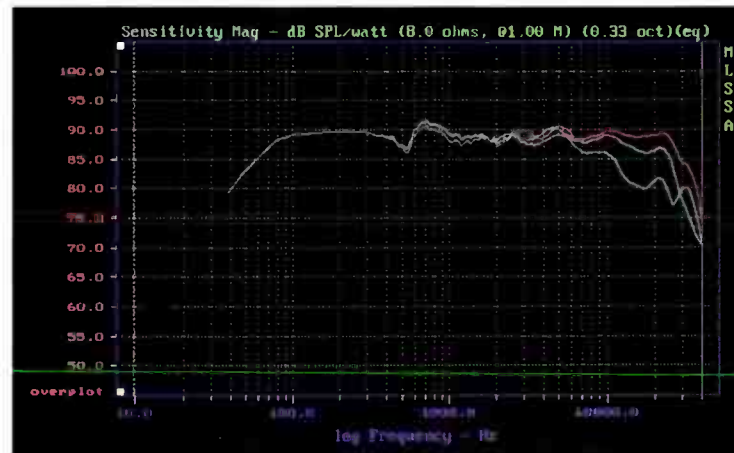
Graph 5 - Impedance characteristic with the Stage 3 crossover.



Graph 6 - Integrated response with Stage 3 crossover and Standard treble unit.



Graph 7 - Integrated response with Stage 3 crossover and XL treble unit.



Graph 8 - Responses with Stage 3 crossover and XL treble unit measured on-axis (red) and 15 & 30 degrees off axis (blue).



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  - Silver plated binding posts/4mm sockets: £4.25 each
  - Eichmann Gold Bullet phono plugs: £26 for four
  - Eichmann Silver Bullet phono plugs: £65 for four
  - Eichmann Cablepod binding posts: £30 per pack
  - Eichmann Gold Bayonet banana plugs: £30
  - Eichmann Silver Bayonet banana plugs: £90
  - Furutech IEC plugs from £19.95
  - Furutech IEC chassis sockets from £4.95
  - Furutech FI-1363 mains plug, perfect for large cables: £50
  - Inca gold plated mains plugs: £20 each
  - Wonder Solder £2.25 metre
  - uninsulated 0.5mm pure silver wire: £2.25 metre
  - Gold plated 13 Amp mains fuses: £2.50 each
  - Deoxit contact cleaner/enhancer: £13.95
  - B9A ceramic gold plated valve sockets: £2.95 each
  - UX4 ceramic valve sockets (for 2A3/300B): £5.95 each
- All items are available via mail order or in person from our shop, please call or visit our website for further information.

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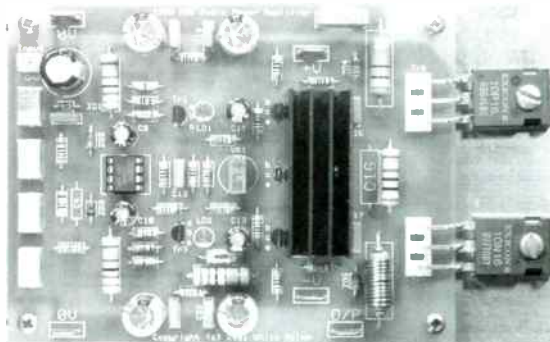
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resolve instruments and voices, whether you are playing audiophile standard or even mediocre recordings. In conjunction with the quality of the drive units it is the absence of any bass 'lumpiness' which aids the ability of the ear to hear 'through' the speaker. In fact, bass quality and definition is a revelation compared to most modern bass reflex designs. It might not extend as deep or sound as 'punchy' as reflex assisted boom boxes but it gains in resolution so that you can hear every note played without emphasis or blurring. This is testament to the aperiodic design and how it allows the amplifier to control the bass unit.

## TWEAKING

For the inveterate DIY fiddler there's a lot you can play with in these crossovers. Thanks to some excellent drive units and good cabinet performance the speakers tend to sound really good no matter which Stage of crossover you use. As always the quality of the components you choose will pay dividends.

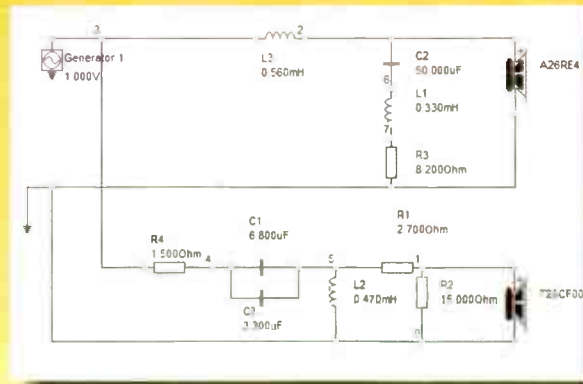
So don't skimp on the series treble capacitor. Bipolar caps will sound a little rough, cheaper polyesters or polypropylenes will sound cleaner, whilst top end polypropylenes will give extra clarity and detail. For the treble coil use an air core because the relatively high resistance doesn't matter and the distortion is very low. You can use a similar coil across the bass unit if you wish to make purchasing simpler. However bear in mind that the magnetic field of an air core coil is massive, so keep the two coils at least 3cm away from one another and make sure their axes are at right angles to each other.

If you go for the Stage 3 option buy the best quality ferrite or laminated iron core coil you can afford. You can try an air core here too, but do make sure it has very low series resistance (below 0.25 Ohms) and keep it well away from the treble coils. In fact, if you choose an air core for the bass we would recommend you house two separate crossover boards inside the speaker, the bass section at the bottom and the treble section on the terminal panel.

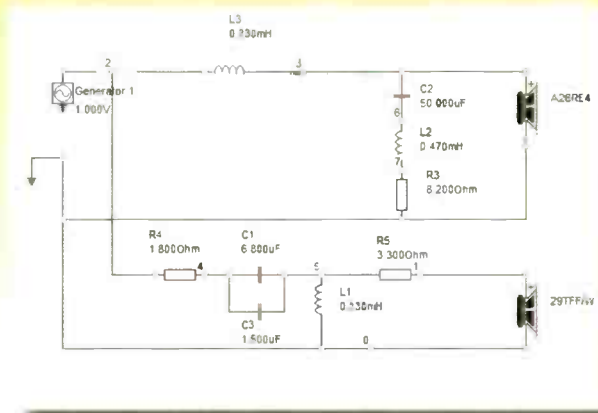
By the way, the reason the terminal panel is at the top of the rear of the speaker is to keep the crossover components well away from the bass unit magnet which can affect coil values and linearity.

With the World Designs kits we are supplying components that we've either chosen or designed to make sure the performance meets the subjective standards you would expect from a pair of speakers in the £1000 price range. More details are shown on the World Designs website.

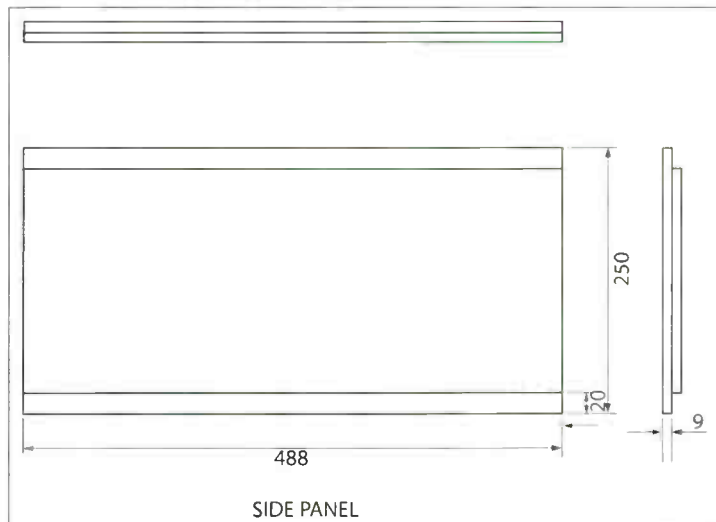
**Next month: WD25T - the floorstanding version.**



**Final Stage 3 crossover, with inductor L3 added in series with the bass unit. This crossover is for the high quality XL treble unit.**



**Stage 3 crossover with modified treble section suited to the low cost Standard treble unit.**



**ERRATA - Corrected SIDE PANEL dimensions.**

## COMPONENT LIST

### XL CROSSOVER:

- 0.56mH Ferrite or Laminated Iron core coil – max DCR 0.25 Ohms
- 0.33mH Air core coil – DCR 0.7 Ohms
- 0.47mH Air core coil – DCR 0.88 Ohms
- 6.8 uF Polypropylene capacitor
- 3.3 uF Polypropylene capacitor
- 50uF Bipolar electrolytic
- 1.5 Ohm 5W resistor
- 2.7 Ohm 5W resistor
- 8.2 Ohm 5W resistor
- 15 Ohm 5W resistor

### STD CROSSOVER

- 0.33mH Ferrite or Laminated Iron core coil – max DCR 0.2 Ohms
- 0.33mH Air core coil – DCR 0.7 Ohms
- 0.47mH Air core coil – DCR 0.88 Ohms
- 6.8 uF Polypropylene capacitor
- 1.5 uF Polypropylene capacitor
- 50uF Bipolar electrolytic
- 1.8 Ohm 5W resistor
- 3.3 Ohm 5W resistor
- 8.2 Ohm 5W resistor
- 15 Ohm 5W resistor

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# world classics

In this heavily revised section, you'll find the great and the good from audio's glorious past. Most are seminal designs which have earned their place in hi-fi history, but you'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price. Think we've overlooked something? Then write in and let us know!

## DIGITAL

**CAMBRIDGE AUDIO CD1** 1986 £1500  
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.

**CAMBRIDGE AUDIO CD4SE** 1998 £200  
A touch soft in the treble and tonally light, but outstanding in every other respect.

**LINN KARIK III** 1995 £1775  
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

**MARANTZ CD73** 1983 £700  
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical!



**MARANTZ SA-1** 2000 £5,000  
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD spinners hands down.



**MERIDIAN 207** 1988 £995  
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

**MUSICAL FIDELITY TRIVISTA** 2002 £4000  
When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

**MERIDIAN MCD** 1984 £600  
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.



**NAIM CDS** 1990 £ N/A  
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.



**SONY CDP-101** 1982 £800  
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!

**SONY CDP-R1/DAS-R1** 1987 £3,000  
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.



**SONY CDP-701ES** 1984 £890  
Sony's first ever bespoke high end audiophile machine used a 16x2 DAC to provide a clinically incisive sound; supreme build quality allied to the pure unadulterated luxury of a paperbook-sized remote control.

**YAMAHA CD-X1** 1983 £340  
Nicely built 16x2 machine with a very sharp and detailed sound; sometimes too much so. Excellent ergonomics, unlike almost every other rival of the time.

## COMPACT DISC TRANSPORTS

**TEAC VRDS-T1** 1994 £600  
Warm and expansive sound made this a mid price hit. Well built, with a slick mech.



**ESOTERIC P0** 1997 £8,000  
The best CD drive bar none; TEAC's Tokyo boys pushed the boat out in style. Brilliantly incisive, ridiculously over engineered.

**KENWOOD 9010** 1986 £600  
The first discrete Jap transport was beautifully done and responds well to re-clocking even today.

## DACs

**CAMBRIDGE AUDIO DACMAGIC** 1995 £99  
Good value upgrade for budget CD players with extensive facilities and detailed sonics.



**DCS ELGAR** 1997 £8500  
Extremely open and natural performer, albeit extremely pricey - superb.



**DPA LITTLE BIT 3** 1996 £299  
Rich, clean, rhythmic and punchy sound transforms budget CD players.



**PINK TRIANGLE DACAPO** 1993 £ N/A  
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard. Clever plug-in digital filter modules really worked!



**QED DIGIT** 1991 £90  
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

**TURNTABLES ARISTON RD11S** 1972 £94  
Modern evolution of Thorens' original belt drive paradigm, Scotland's original super-deck was warm and musical, albeit soft. Still capable of fine results today.

**PIONEER PL12D** 1973 £36  
The beginning of the end for the British turntable industry. When vinyl was the leading source, this brought new standards of noise performance and stability to the class, plus a low friction S-shaped tonearm. Later PL12D was off the pace compared to rivals



**DUAL CS505** 1982 £75  
Simple high quality engineering and a respectable low mass tonearm made for a brilliant budget buy. Polished, smooth and slightly bland sound.

**GOLDRING Lenco 88/89** 1963 £15.65  
Simple, well engineered middleweight with soft, sweet sound and reasonable tonearms. Good spares and servicing support even today from specialists.

**LINN AXIS** 1987 £253  
Simplified cut-price version of the Sondek complete with LVX arm. Elegant and decently performing mid-price package. Later version with Akito tonearm better.

**LINN SONDEK LP12** 1973 £86  
For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Beguilingly musical but now off the pace.



**TECHNICS SP10** 1973 £400  
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

**MARANTZ TT1000** 1978 £ N/A  
Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.



**MICHELL GYRODEC** 1981 £599  
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved until recently. Early examples sound cold and mechanical, but now right on the pace. Clean, solid and architectural sound.

**REGA PLANAR 3** 1978 £79  
Brilliantly simple but clean and musical performer, complete with Acos-derived S-shape tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

**GARRARD 301/401** 1953 £19  
Heavy metal - tremendously strong and articulate with only a veiled treble to let it down. In many respects, better than the seventies 'superdecks' that succeeded it.



**ROKSAN XERXES** 1984 £550  
Supposedly the first to 'better' the LP12. Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

**THORENSTD124** 1959 £ N/A  
The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.



**TOWNSHEND ROCK** 1979 £ N/A  
The product of academic research by the Cranfield Institute, this novel machine has an extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

**TRIO LO-7D** 1978 £600  
The best 'all-in-one' turntable package ever made, Trio/Kenwood threw their 'engineering best practice' book at this one with startling results. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

**TONEARMS**  
**ACOS LUSTRE GST-1** 1975 £46  
The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

**AUDIO TECHNICA AT 1120** 1978 £75  
Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

**ALPHASON HR100S** 1981 £150  
First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.



**SME 3009** 1959 £18  
Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability has made it a cult, used prices unjustifiably high.

**GRACE G707** 1974 £58  
This early Japanese example of the tonearm art has a smooth, lyrical sound. Imported by Linn, fitted to early LP12s. Sonically way off the pace now, though.

**REGA RB300** 1983 £88  
Inspired budget esoterica. Detailed, tight, neutral sound but tonally grey sounding in absolute terms. Responds well to tweaking, and its cheaper RB250 brother better still.



**SME SERIES III** 1979 £113  
Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

**HADCOCK GH228** 1976 £46  
Evergreen unipivot with lovely sweet, fluid sound. Excellent service backup.



**LINN ITTOK LVII** 1978 £253  
Arguably the first 'superarm'; Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. Now off the pace, but the final LVIII version worth seeking out.

**NAIMARO** 1986 £875  
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.



**TECHNICS EPA-501** 1979 £ N/A  
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

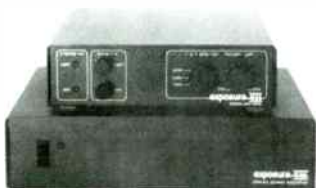
**INTEGRATED AMPLIFIERS/COMBOS**  
**DELTEC** 1987 £1900  
Fast, dry and with excellent transients, this first DPA integrated is the real deal for eighties obsessives. Ridiculously punchy 80W per channel from a tiny, half-size box. Radical, cool and more than a little strange.

**ROGERS A75** 1978 £220

The prototypical Audiolab 8000a – lots of sensible facilities, a goodly power output and nice sound in one box. The later A75II and A100 versions offered improved sonics and were seriously sweet and open to listen to.

**EXPOSURE VII/VIII** 1985 £625

Seminal mid-eighties Exposure pre-power, offering most of what rival Naim amps did with just that little bit extra smoothness and sweetness. Still, it's by no means 'sweet' by today's standards, being lean, punchy, musical. It's also possessed of that quintessentially eighties look – frumpy black steel boxes with rough silk screened logos!



**SUGDEN C51/P51** 1976 £130

Soft sounding early Sugden combo with a plethora of facilities and filters, complete with seventies-tastic DIN socketry. A sweet and endearing performer as you'd expect, but lacking in power and poor load driving ability, so partner carefully.

**VTL MINIMAL/50W MONOBLOCK** 1985 £1,300

Vacuum Tube Logic was one of the Europe's biggest tube names in the eighties, and it shows. Rugged, professional build and finish allied to a lively and punchy sound (albeit with limited power) make them an excellent used buy.

**A&R A60** 1977 £115

Sweet and musical feature-packed integrated; the Audiolab 8000A used its blueprint to great effect.



**CREEK CAS4040** 1983 £150

More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

**AUDIOLAB 8000A** 1985 £495

Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.



**MCINTOSH MA6800** 1995 £3735

Effortlessly sweet, strong and powerful with seminal styling to match.

**SUGDEN A21** 1969 £ N/A

Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

**MISSION CYRUS 2** 1984 £299

Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.



**MUSICAL FIDELITY A1** 1985 £350

Beguiling Class A integrated with exquisite styling. Questionable reliability.



**NAIM NAIT** 1984 £350

Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine phono stage, very low power.

**NAD 3020** 1979 £69

Brilliantly smooth, sweet and punchy at the price and even has a better phono stage than you'd expect. The archetypal budget super amp.



**MYST TMA3** 1983 £300

Madcap eighties minimalism, but a strong and tight performer all the same.

**ROGERS CADET III** 1965 £34

Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves



**ROTEL RA-820BX** 1983 £139

Lively and clean budget integrated that arguably started the move to minimalism.

**PREAMPLIFIERS**

**AUDIOLAB 8000C** 1991 £499

Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

**AUDIO RESEARCH SP-81982** £1,400

Beautifully designed and built high end tube preamplifier with deliciously sweet and smooth sound. Not the last word in incision or grip, but that didn't matter to those who aspired to it.

**CONRAD JOHNSON**

**MOTIV MC-8** 1986 £2,500

Minimalist FET-based preamplifier from the Yank valve specialists is brilliantly neutral and smooth with a spry, light balance in the mould of Sugden high end stuff. Something of a curio, but worthwhile nonetheless.

**CROFT MICRO** 1986 £150

Budget valve pre-amp with exceptionally transparent performance.

**LEAK POINT ONE STEREO**

1958 £ N/A

Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fit!

**LINN LK-1** 1986 £499

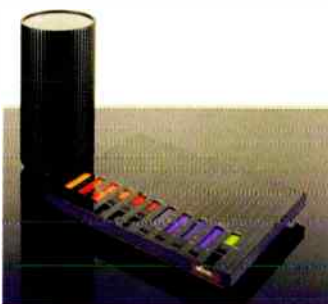
A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

**NAIM NAC32.5** 1978 £ N/A

The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

**LECSON AC-1** 1973 £ N/A

Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.



**QUAD 22** 1958 £25

The partner to the much vaunted Quad II monoblocs - cloudy and vague sound means it's for anacrophiles only.

**QUAD 33** 1968 £43

Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

**POWER AMPLIFIERS**

**LEAK STEREO 20** 1958 £31

Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically. Irrepressibly musical and fluid.



**LECSON API** 1973 £ N/A

Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**MARANTZ MODEL 9** 1997 £8000

Authentic reproduction monoblocs still more than cut the sonic mustard. Highly expensive and highly sought after.

**MICHELL ALECTO** 1997 £1989  
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

**LEAK POINT ONE, TL10, TL12.1** 1949 £28  
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical sound, that's far more modern than Quad IIs. Deeply impressive when in fine fettle.



**MUSICAL FIDELITY XA200** 1996 £1000PR  
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.



**RADFORD STA25 RENAISSANCE** 1986 £977

At the time, very possibly the least cool amplifier on the planet – and we're not talking heat dissipation here. This reworking of Radford's original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.



**QUAD II** 1952 £22  
The all-time classic valve amplifier, with a deliciously fluid and lyrical voice. In other respects though, it sounds hopelessly dated. Low power and hard to partner properly.



**QUAD 405** 1978 £115  
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound. 606 and 707 continue the theme with greater detail and incision.

**QUAD 303** 1968 £55  
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

**KRELL KMA100 II** 1987 £5,750  
Ludicrous monoblock version of the giant KSA-100 is one of the seminal eighties transistor power amplifiers. Massive wallop allied to a very clean and open Class A sound makes this one of the best amplifiers of its type, ever.

**PIONEER M-73** 1988 £1,200  
Monster stomp from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the eighties-tastic experience.



**PHONO STAGES**

**CREEK OBH-8 SE** 1996 £180  
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring G1042 for an unbeatable budget combination.



**LINN LINNK** 1984 £149  
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

**MICHELL ISO** 1988 £ N/A  
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.

**TUNERS**

**MARANTZ ST-8** 1978 £353  
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.



**CREEK CAS3140** 1985 £199  
Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the theme...

**NAD 4040** 1979 £79  
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

**NAIM NAT03** 1993 £595  
The warm, atmospheric sound is further proof of Naims proficiency with tuners.

**PIONEER TX-9500** 1976 £295  
Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

**LEAK TROUGHLINE** 1956 £25  
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed by a modern outboard decoder they're deliciously lucid with true dimensionality.



**YAMAHA CT7000** 1977 £444  
Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

**QUAD FM4** 1983 £240  
Supreme ergonomics and styling allied to a pleasingly lyrical sound with plenty of sweetness and detail made this one of the best tuners around upon its launch.



**REVOX B760** 1975 £520  
More of a semi-pro machine than a domestic bit of kit, the Revox offers superlative measured performance although the sound isn't quite as staggering as the numbers. Fine nonetheless, and surely the most durable tuner here?

**NAD 4140** 1995 £199  
Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

**ROGERS T75** 1977 £125  
Superb mid-price British audiophile design, complete with understated black fascia. Fine sound in the true Rogers mould – smooth and sweet with fine dimensionality.

**SANSUI TU-9900** 1976 £300  
A flagship Japanese tuner designed to steal sales from the likes of Accuphase and Revox, it boasts superlative RF performance and an extremely smooth and lucid sound, along with very fine build and finish.

**SONY ST-5950** 1977 £222  
One of the first Dolby FM-equipped tuners, a format that came to nought. Still, it was Sony's most expensive tuner to date, and boasted a very good sound quality allied to brilliant ergonomics.



**TECHNICS ST-8080** 1976 £180  
National Panasonic's specialist hi-fi brand was a big hitter back then, and this is no exception. Superb FM stage makes for a very clean and smooth listen with lots of detail and depth.

**ANALOGUE RECORDERS**

**YAMAHA TC-800GL 1977 £179**

Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics by modern standards, but cool nonetheless!



**SONY WM-D6C 1985 £290**

Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.



**LOWTHER PM6A 1957 £18 EACH**

This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

**TANNOY WESTMINSTER 1985 £4500**

Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.



**DIGITAL RECORDERS**

**SONY MDS-JE55ES 2000 £900**

The best sounding MD deck ever, thanks to awesome build and heroic ATRAC DSP Type R coding.



**AIWA XD-009 1989 £600**

Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

**NAKAMICHI CR-7E 1987 £800**

The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.



**PIONEER PDR-555RW 1999 £480**

For a moment, this was the CD recorder to have. Clean and detailed.

**MARANTZ DR-17 1999 £1100**

Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.



**JR 149 1977 £120**

Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEF T27 / B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity in imaging.



**PIONEER CTF-950 1978 £400**

Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



**KENWOOD DM-9090 1997 £500**

Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

**SONY TCD-8 DATMAN 1996 £599**

Super clean sound makes this an amazing portable, but fragile.

**LOUDSPEAKERS**

**ACOUSTIC RESEARCH ARI8S 1978 £125**

Yank designed, British built loudspeaker became a budget staple for many rock fans, thanks to the great speed from the paper drivers, although finesse was most definitely not their forte...

**BBC LS3/5A 1972 £88**

Extremely low colouration design is amazing in some respects - articulation, stage depth, clarity - and useless in others (both frequency extremes). Came in wide variety of guises from various manufacturers building it under licence. Partner with Rogers ABI subwoofers for an extra two octaves of bass!

**SPENDOR BCI 1976 £240**

Celestion HF1300 tweeter meets bespoke Spendor Bextrene mid-bass unit - and the result is a beautifully warm yet well focussed sound. A little bass bloom necessitates careful low-stand mounting, but these prove that the seventies did have some fine designs after all!

**QUAD ESL57 1956 £45 EACH**

Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midband performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and supertweeters.



**REVOX A77 1968 £145**

The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.



**KEF R105 1977 £785**

Three way Bextrene-based floorstander (complete with castors!) gave a truly wide-band listen and massive (500W) power handling. A very neutral, spacious and polite sounding design, but rhythmically well off the pace. The quintessential nineteen seventies loudspeaker.

**IMF TLS80 1976 £550**

Warm and powerful nineteen seventies behemoth with transmission loading and a mixture of KEF and Celestion drive units. Impressively physical wideband sound but rhythms aren't its forte.



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**MAGNEPLANAR SMGA198X** £800  
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**MISSION 770** 1980 £375  
 Back in its day, it was an innovative product and one of the first of the polypropylene designs. Warm, smooth, clean and powerful sound.



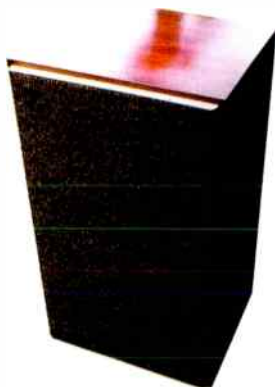
**MISSION 752** 1995 £495  
 Cracking Henry Azima-designed floorstanders combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

**HEYBROOK HBI** 1982 £130  
 Peter Comeau-designed standmounters with an amazingly lyrical yet decently refined sound. Good enough to partner with very high end ancillaries, yet great with budget kit too. A classic.

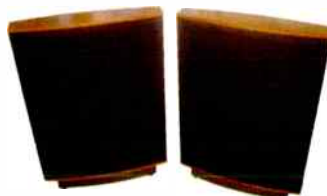
**CELESTION SL6** 1984 £350  
 Smallish two way design complete with aluminium dome tweeter and plastic mid-bass unit set the blueprint for nineteen eighties loudspeakers. Very open and clean sounding, albeit course at high frequencies and limp in the bass. Speakers would never be the same again...



**LEAK SANDWICH** 1961 £39 EACH  
 Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.



**QUAD ESL63** 1980 £1200  
 An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.



**YAMAHA NS1000** 1977 £532  
 High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



**MISSION X-SPACE** 1999 £499  
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## Letter of the Month

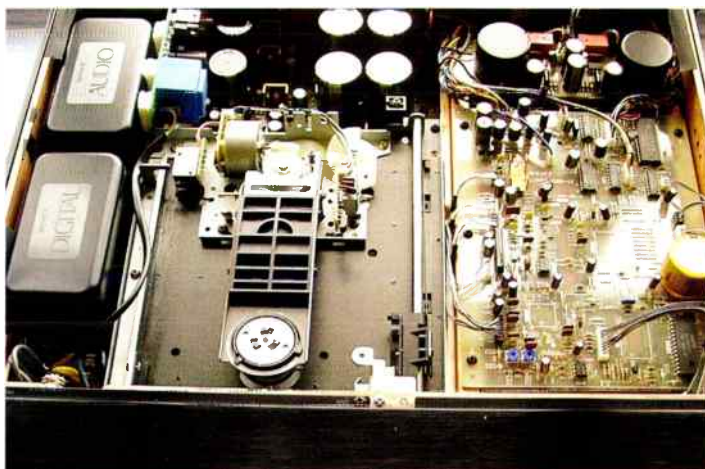
### TRANSPORT 2006

Can you explain why some CD transports sound better than others, and why some chose CD mechanisms designed for audio and others CD-ROMs or DVD-ROMs? According to a lot of forums the choice of mechanism should have no affect on sound quality and is therefore unimportant, as the mechanism produces no jitter or distortions and any errors are corrected by the error correction circuits? I am now a little confused with all this, I thought mechanisms had measurements and were not all equal? Why is there VRDS, Stable platter, Philips Pro, etc., if CD-ROM and DVD-ROM give the exact same performances – and if there are differences then in what ways can these be detrimental. And why do the CD transports I use sound different, is it some sort of placebo affect? Is a £700 DVD player as good as a £500 CD player or transport, why does my VRDS sound better than my Pioneer? What answers can I give to back up my claims of hearing a difference?

Louise

Fine questions! A short history lesson, if you will. Back in the early eighties, CD was launched and in a bid to make it as reliable as possible, most early transport mechanisms (or 'mechs', as the trade calls them) were seriously over engineered, using metal parts extensively, often including a metal disc tray. Philips, in its early transports, also used a 'swing arm' laser, which tracked across the disc in a way rather akin to a tonearm on a turntable. All these various things, 'swing arms', metal diecastings, etc., etc., conspired to produce what many regard to be superb transports. The later Philips CDM9 and I2 mechs used in nineties machines, for example, didn't seem to sound half as good as the early ones, and seem built in a dramatically more flimsy way.

One exception was TEAC, which



CD mechanisms – not all are created equal.

in the early nineties introduced the VRDS mech; as usual this came in cheaper variants (such as the VRDS-TI transport) and more expensive ones (such as the P-30 transport), but in all cases they were excellent and seemed to be getting better and better whilst the Philips mechs got worse. An interesting point is that, whilst Philips stopped supporting their mechs with spares a year or three after they'd discontinued them, TEAC continue to support all their mechs to this day – something to hold in mind when buying secondhand.

In the mid to late nineties, there was a revolution in transports; suddenly the key driver to sales became the computer market, which had a massive demand for data 'CD-ROM' readers. This pushed costs right down, and certain manufacturers like Audiolab and Meridian, to name but two, moved into ROM transports. At this time, the accuracy of the master clocks became an issue, not least because manufacturers were now able to measure 'jitter' (i.e. time domain errors). Much was talked about on this subject, but suffice to say that high jitter mechs generally produced a vague and hard(er) sound. At last, here was something that explained

the differing sound of transports!

Well, this is what many thought; but it's not the whole story.

There's no denying that low jitter is where we want to be, but two transports with very similar jitter figures don't necessarily sound the same. It's possible to get very low numbers from a modern reclocked DVD-ROM, but to my ears at least, it wouldn't hold a candle to a late eighties TEAC CMK-3.2 or Sony KSS151A with absolutely no reclocking. How so – it's down to serious build, fine tolerances and servo software designed specifically to read Red Book CDs in real time (i.e. 1x), rather than Microsoft Encarta DVD-ROMs at 48x... So where does that leave us now?

This is now a real live issue; I really don't think it's ideal to use cheapo 'parts bin' ROM mechs (and reclock them) in high end audio applications. True, notionally they work reasonably well, but I fear that designers are only doing this because of price and availability considerations, with sound a distant third? One serious high end player like the Linn Söndek CD12 uses a bespoke mech with a stunning metal disc tray that 'swishes' in and out, while another such as Meridian's 808i uses a proprietary DVD-ROM mech with

a flimsy plastic disc tray that whirs in an out like a cheap PC you'd buy from Micro Mart. I think buyers should 'vote with their feet', on this...

I've been doing some serious transport listening tests of late, concluding that they do sound different – and that the difference is not always a subtle one. Generally, well engineered bespoke Red Book CD mechs from the eighties sound deeper, more three dimensional and musical than any of the new breed of clocked ROM drives. Although the latter can be very detailed across the midband, I find them quite two dimensional and lightweight at frequency extremes. Any of the big Jap battleship players of yore (Pioneer PD91, TEAC VRDS25, Sony CDP-X77ES) show the latest mechs a thing or two about bass...

How so? Well Louise, all I can say is I don't know. I am not a transport engineer, and so can only report my findings. Rest assured, however, that I'm putting all of these thoughts and experiences together, and will be researching a feature on this very subject soon. In the meantime, any readers' experiences on this subject are welcome. DP



**Donald Fagen's 'Nightfly'**  
– classic hi-fi album cover, not 'arf great mate!

There's much debate about this. The traditional reductionist engineering view is that "bits are bits" and digital is, by its very nature, perfect. This is one view, a rather simple one, that is still floating about. It is still vigorously defended by those who need a simple belief system.

Luckily, many digital engineers nowadays acknowledge that there are indeed differences in the sound quality of digital devices like transports, discs, tape machines and what have you. They can be quite large too. In response to this a fair bit of hypothesising and measurement has been used to try and pin down what is happening, so far with limited success.

Initially, errors and error correction were invoked, and indeed they can be substantial our

measurements show, especially with poor CDs possessing pin holes in the reflective layer (you can see these by holding a CD up to bright light).

Then jitter was brought into the picture as a likely culprit. It certainly does affect sound quality, adding to that peculiar coarseness and greyness of tone of digital, but it isn't the only problem. Many engineers feel that re-clocking eliminates it, whilst others feel it only disguises timing problems, by re-translating them into another domain, so coarseness becomes vagueness or imprecision for example.

Then there's noise. Digital systems generate unpleasant forms of noise as a result of jitter and quantisation error, laser read error and what have you. This may well affect matters. We accept that noise in the form of dither smooths digital by randomising errors such that they cancel, having a remarkable affect upon low level signals our measurements show. But there is, subjectively, 'smooth' noise, like pink noise for example, and 'ripping' or 'sharp' sounding noise and it could, conceivably, be the presence of different types of noise at low level that are introducing perceived differences. High quality transports, like those from Teac, reduce all forms of error and noise, and this does translate through to better sound quality. By what mechanism we are not sure, I believe I am right in saying (there's always something I haven't read!).

I suspect it is the sum total of all these effects, plus others we don't know much about perhaps, that influence what we hear. I always recall that Yost, of the Parmlly Hearing Institute, claims we can hear down to the movement of a hydrogen atom! The human ear is capable of remarkable sensitivity and resolution under certain circumstances. At

present a lot of effort is being put into digital technology, yet we know at least one highly qualified expert in the field who claims it will never sound good until we use sampling rates far higher than today's. In the meantime we have to live with what we have, which in CD is first generation technology from the 1970s. Happily, a lot of companies and engineers are trying to improve matters and there are some real digital gems out there, amongst the prosaic. NK

### COVER VERSIONS

*Hi David – here are just a few album covers with a hi-fi connection:*

- Add N to X – 'Avant Hard'
- Large Number 'Spray on Sound'
- Stereolab 'Eye of the Volcano' (Simon Yorke cover?)

**Jonathan Hawkins**

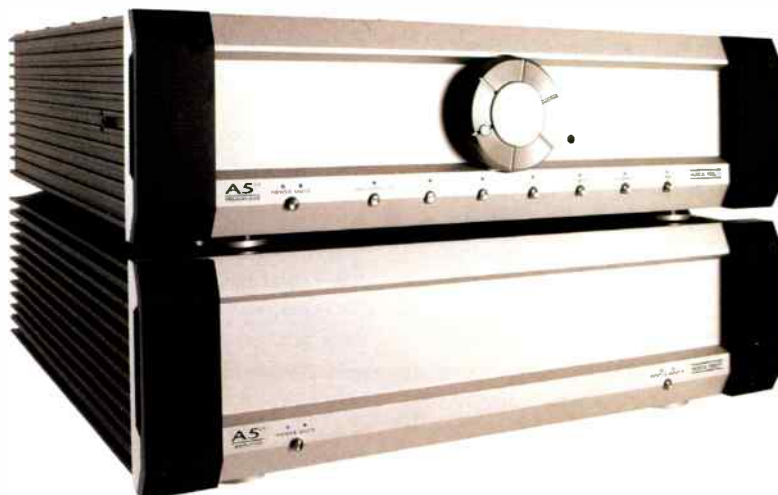
Thanks Jonathon; you forgot the brilliant Donald Fagen's 'Nightfly'. Any other suggestions welcome! DP

### SMOOTH OPERATORS

*Dear David,*  
*Last Saturday I heard the Musical Fidelity A5cr Pre and Power amplifiers at Sevenoaks Sound & Vision, and for two hours I was blown away by the huge soundstage, power and detail that they produced. But there was one exception - I played Alicia Keys' second album and it sounded too bass heavy. Is this due to the amplifiers or the recording? The MF A5cr's were tested with an Arcam CD73 and KEF IQ5, cables were Chord Chorus to connect the amplifiers and vdH First Ultimate mk2 and Chord Odyssey.*

*The question I would like your opinion on is - are the MF A5cr amps capable of playing R'n'B music, or do you think they are far too smooth sounding? I would be very grateful if you could put my mind at rest, as I love the build quality of these amps.*

**Yasvanth**



**Musical Fidelity A5cr Pre/Power.**

In a word, yes. They're very fine amps indeed – I actually prefer them in some ways to the kWVs, as they're less extreme and exacting and seem to work better in 'real world' situations. They won't tell you exactly what's wrong with your system, but instead let you get lost in music.

That extra bass on the Alicia Keys album is down to two things; first, the way it's mixed, and second the iQ5s letting go at high volumes in that particular room. At home, with different speakers and different room acoustics, it need not necessarily happen. If you like them, then buy with confidence; they're fine designs.

**DP**

## SECONDHAND NEWS

*I thought that I'd write to say how much I enjoyed your February 2006 Classic Special Issue, with its focus on old equipment! As someone who's always appreciated good hi-fi, but could never justify or afford top esoteric gear, I've either had to buy budget or second hand. This means that much of my equipment is quite old and to see how it's still rated and the comparison to new*



**Rega Planar 3 – the hi-fi world's best secondhand bargain!**

*equipment is very interesting. Perhaps you could do a regular feature on an older/secondhand system versus a new one of similar quality?*

*I have two systems, one in the house and one in my design studio and they comprise (house system): Rega Planar 3/ RB300 arm and Entrée MC and Lentek head amp, Rotel RCD 855 CD player, Creek CAS 4040 integrated and NAD 4020 tuner, plus Mordaunt Short MS208 loudspeakers. My studio system features a Marantz CD63 (bought secondhand for £60), Cyrus One integrated (£120 s/h), A&R T21 tuner (£25 s/h) and KEF C25 (£30 s/h). I think both my CD players are worthy of inclusion in the classics listings, as is the AR T21. Keep up the good work and I look forward to your next issue.*

**Terry Symonds**

Thanks Terry – this is proof positive that you don't need cash to put

together a nice sounding system.

There are some very good choices in there indeed, and I'm sure that your two systems will serve you well for years to come. Dosh helps when system building, but knowledge is more valuable. **DP**

## MP3-DOM?

*After much head scratching and hard thought about even daring to contact you about such an inferior music listening format, I wondered if you were ever going to approach this subject? My partner travels a great distance to work (some four hours in total each day Monday-Friday). Because I have a high end system, I wondered if there is an mp3 player which gets a bit closer than the rest in copying from my system or the internet? Also what about these so called 'earbuds'?*

**Lawrence Reemer**

Hi Lawrence – well, you obviously don't remember the fact that we were covering MP3s in a dedicated supplement (Computer Audio World) back in April 1999 – about five years before the rest of the



**MP3 – okay for music on the move?**

## MAKING FLIPPY FLOPPY

*I was looking on the net for turntable mod information, came across the following and wondered if you were aware of it.? Click on [www.audioorigami.co.uk/FloppyProject/FloppyDIYMotor.htm](http://www.audioorigami.co.uk/FloppyProject/FloppyDIYMotor.htm). If you've not mentioned it before it would make a great project!*

**Ian Haynes**

Thanks Ian; yes, our hats go off to the guys at Audio Origami for this one. Not only it is environmentally friendly (i.e. it recycles otherwise useless objects; I'm sure there's a hi-fi journalist joke in this sentence, but libel laws prevent me from going there...) but it probably sounds better than that ubiquitous AC motor used in everything from Logics to Aristons. **DP**

## WE ARE THE MODS

*I enjoyed the article on the Thorens 125 upgrade very much and would like more of the same in future issues. In one of the reader's letters you mention that it would be worthwhile re-building the Quad 405-II amp. I'd love to see one of your ingenious readers submit an article on it. I realize that there's plenty of mods out there on the web but seeing it in your magazine gives it more credibility. You folks don't seem have a very high opinion of the 44 pre-amp, why? Looking forward to your report on the Quad tube gear in the January 2006 issue. I have a copy of your report that was done a few years back when they were put on the market. Has something changed with the product? Is there any other tube product out there that I could use to drive my Quad 63's safely without having to rob a bank?*



**Hot property - dodgy KT88s nearly incinerated Quad's reputation for reliability.**

*I was advised by a salesperson in the trade that the new Chinese Primaluna products would be too risky (unstable) with the Quads. Your opinion would be appreciated.*

**Joe Wdowiak  
Canada**

When first released the Quad II-forty bumped into a real world problem: the KT88s it was supplied with were prone to an early exit from this mortal coil. It threatened to give the amplifier a bad reputation that was not of its own doing, so Quad chose not to encourage sales, as it were. The problem lay in one East European factory in truth. These days you will note that Quad say they supply this product with pre-tested specially selected Chinese KT88s. Our telephone fails to work properly when Quad phone to ask for their amp back, so we can reliably report that the new valves are reliable even after very heavy use.

Drive ESL63s? Why, of course. A 40W valve amp swings just the right number of volts and won't expire with a large bang and a nasty smell should Peter Walker's crowbar operate. **NK**

## VINYL DEMAND

*I was wondering if you could help me, and probably a few over people at the same time. I have always had a strong interest in music and hi-fi, possessing over 300 CDs post break in (another story). But being an avid listener of my stepdad's record collection (Rick Wakeman, Steve Hackett and the like) always aspired to owning a turntable. In September I got a Rega P3 and now own about 40 records. I like to listen loud and I'm currently using a Micromega A120 with the built in phonostage for the turntable, a gram amp 2 communicator is on order.*

*My main query is regarding isolation. I've noticed when I tap my Russ Andrews mains block or the turntable mains cable, it thuds thru the speakers. I assume that the same thing causing this is what is giving me the background noise when I listen to LPs. What would be the best road to take when it comes to sorting this?*

*My Rega is currently sitting on a marble tile with three MDF pucks glued to the underside and Russ Andrews oak cone feet screwed into these (to enable levelling), on a TNT flexi rack. I have been looking at the Isonoe feet, the cartridge man isolator, and or a new mat. Initially, I was going to make a TNT sandbox, but looking on diyaudio.com about isolation put me off that solution. Plus would the phono stage also help? I clean my records with a Disco Antistat. I would be grateful of any advice you could throw my way.*

**Carl**

From a distance I cannot tell precisely what is happening here, Carl. It sounds like you have mechanical feedback and the isolating system isn't very effective. A turntable like the P3 is fine in itself, but its own isolation is poor. You must have a firm base for the turntable and a sandbox is a great idea in my view. In the past

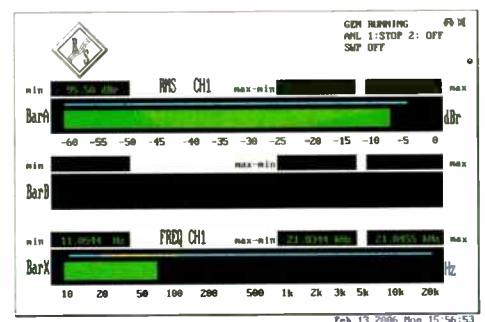
I built a huge sand filled shelf and it worked beautifully. However, it was heavily anchored into walls, as such a thing needs to be, because of its weight. I suggest you look at what your Flexirack is sitting on, or build a sandbox. I currently use a vast marble slab on a wooden base as the house is undergoing a little re-structuring and things need to be moved around, including my Garrard. You could consider such an arrangement, always bearing in mind that if anything sits on a floor, the first thing to consider is - the floor! If you have suspended wooden floors, then site the turntable close to a wall, but away from a corner if possible. And keep it away from the loudspeakers too. **NK**

## COMPRESSION DEPRESSION

*I came across the following web page today. Is this one of the reasons for CD fatigue and the general dislike of CDs? Click on: [www.mindspring.com/~mrichter/dynamics/dynamics.htm](http://www.mindspring.com/~mrichter/dynamics/dynamics.htm). How about an investigation?*

**Andy Atherton**

Doubtless this is one reason some CDs sound bad, but it is also an example of crass CD mastering. As I understand it compressors are commonly used nowadays to compress music up into the top part of CD's dynamic range, in order



*The high and lows of a Darkness CD. The top bar shows maximum and minimum signal levels, the bottom one highest and lowest frequencies. At top right you can see the highest level reached is -3.793dB below peak level, so the mastering engineer did his job properly.*

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to sound loud, as well as avoid distortion that creeps in at low levels. But peak clipping is avoidable, quite frankly, and it is not the reason CD sounds bad. When it was launched we were all told CD had enormous dynamic range, officially 96dB. As a result music was transferred to CD at quite low levels, in order to avoid peak clipping which, with digital systems, is unacceptable. Trouble is, early recording, mastering and transfer systems behaved poorly at low levels and music suffered massive and obvious distortion as a result. When the recording business tweaked what was happening they then swung around to the opposite approach; these days music is jammed up against the 0dB limit, often with the aid of compressors. However, it is possible to ensure the ceiling isn't actually hit, so triggering the production of vast amounts of distortion. This isn't the reason CD sounds bad.

Just to show I am not talking out of the top of my hat I have played a recent CD. One Way Ticket to Hell (and Back) from The Darkness, via our Rohde & Schwarz UPL analyser, set to show Maximum and Minimum amplitudes and frequencies. You can see the highest level recorded is -3.793dB below 0dB (2V). I am sure some CDs dive through 0dB as stated on the website you quote, but this is an exception rather than a rule. **NK**

### SG ON DAB & DVB

Dear Mr Green,

I was very interested in your article 'Radio Gaga' in October 2005's *Hi-Fi World*, and having been following it up I seem to have got to a dead end: my supplier for hi-fi seems to know nothing about the subject, telling me that I don't need a dish, while you say I do. I should point out that I have no TV, but do have an Arcam NICAM TV sound receiver which gives me hi-fi sound for TV music broadcasts on BBC2 and Channel 4. It seems that all I need is a tuner for satellite DAB radio and a dish, yes or no? Could you recommend a dealer, preferably in NW London or thereabouts who has the requisite knowledge?

**Hans Cohn**

Dear Hans - I think your hi-fi supplier thinks you're asking for a DAB tuner, when in fact what you want is a satellite receiver. I'll try and explain the terminology and the differences between the systems below.

First, DAB is the standard used for the UK's terrestrial-based digital radio system. And when you hear someone on the radio refer to DAB they're referring to this

terrestrial-based system. But, just to confuse matters, digital radio is also distributed via all of the digital TV systems, including digital satellite, Freeview and cable. The digital TV systems, or digital TV platforms as they're sometimes referred to, use the DVB standard, which stands for Digital Video Broadcasting, and is different to DAB, which stands for Digital Audio Broadcasting.

In the 'Radio Gaga' article I discussed why DAB came to be in the sorry state that it's now in, where the vast majority of radio stations are being broadcast at a poor level of audio quality, and I mentioned that the audio quality of many radio stations is better on Freeview, digital satellite and cable. The reason the



**Get a satellite dish if you want quality digital radio.**

audio quality of the radio stations on the digital TV platforms is better than on DAB is due to the bit rate (i.e. the data rate) at which they transmit being higher on the digital TV platforms than on DAB, and it is the bit rate that sets the nominal level of audio quality. For example, on DAB the BBC uses 128 kbps (kbps stands for kilobits per second, or thousand bits per second), 128 kbps, 192 kbps and 128 kbps for Radios 1, 2, 3 and 4, respectively, whereas on the digital TV platforms all of these stations are broadcast at 192 kbps. And the BBC reduces the bit rate of Radio 3 to 160 kbps in the daytime and Radio 4 to mono in the evening when the part-time station Radio 5 Sports Extra is transmitting. All of the BBC's digital stations are at higher bit rates on the digital TV platforms than they are on DAB, and most of the commercial radio stations use a higher bit rate on digital satellite than on DAB.

In the following month's issue of *Hi-Fi World* I wrote an article about the German public service broadcaster ARD launching all of its 54 stereo radio stations at very high bit rates (320 kbps) on the European digital satellite system. And because the bit rate levels are so high the audio quality of these stations is

very good, and much better than the UK broadcasters provide on any of the digital systems. I've attached an MS Word version of that article to this email. In the same article I also mentioned that there are quite a few classical music stations broadcasting on the European digital satellite system that also use high bit rates, so the audio quality is good, and overall there are literally hundreds of radio stations to choose from on the European satellites.

There's also a wider choice of UK stations on digital satellite than there is on DAB, Freeview or satellite -- there's about 85 UK stations on satellite, 25 on Freeview, about 30 - 40 on cable and 50 to 60 in London on DAB, and less on DAB elsewhere. The only advantage of DAB over the other platforms is that you can receive local radio on DAB, but you can't on the digital TV platforms, apart from Capital Radio, Radio London and LBC also broadcasting on satellite.

So, if you do want to get digital satellite, the first requirement is that you can install a satellite dish that has a clear path to the satellite, which is in the direction south-south-east, and about 10 degrees elevation. So it might not be possible to install digital satellite if there's a building or trees blocking the path to the satellite.

You then need to decide on whether you want to just be able to receive the UK stations or the European radio stations as well. Either way, you only need one digital satellite receiver and one satellite dish. But if you want to receive the European stations as well as the UK stations you need more than one LNB, which stands for Low Noise Block, and you'll need a DiSEqC switch to switch between satellites. It isn't much more expensive to get the European satellites, but it is a bit more tricky to change between stations on different satellites than if you only receive from the UK satellite.

Also, I should point out that you don't have to pay a subscription to Sky, because all of the UK and European satellite stations are what is called free-to-air, which means that they're not encrypted.

Unfortunately, however, hi-fi shops don't seem to realise that the audio quality of radio stations on satellite and Freeview are higher than they are on DAB, and hi-fi shops only stock DAB tuners. So if you want to buy satellite equipment you need to contact a shop that sells satellite equipment, or a satellite installer. There will be quite a few of these shops / installers in the Yellow

Pages, and there's quite a few satellite equipment retailers on the Internet as well. Here's a list of websites and phone numbers for three of the UK online satellite equipment retailers:

www.sateuropa.co.uk  
0845 130 3111  
www.hisat.com 0117  
972 1814  
www.wizardsatellite.com 01455  
444404

The equipment you need is different depending on whether you just want to receive the UK stations or both the UK and European systems. I'll list the equipment you need to buy for both options. To receive the UK stations you need a digital satellite receiver, one small satellite dish, such as a 60 cm diameter dish, and one universal LNB. To receive the UK and European stations you need a digital satellite receiver, an 80 cm diameter satellite dish, a DiSeqC switch, and three universal LNBS (one for each satellite). Prices of equipment are about £50 and upwards for digital satellite receivers, £30 and upwards for dishes and £15 and upwards per universal LNB. You also have to budget for installation costs, which are variable.

One thing to bear in mind in terms of audio quality is I would strongly recommend that you buy a digital satellite receiver that has an S/PDIF digital audio output and route that to a DAC on your hi-fi system. If you don't have a DAC you can use a Sony MiniDisc as a DAC by making sure there's no MiniDisc in the player then pressing record, which puts the MD player in DAC mode. Unfortunately there doesn't seem to be any low price DACs available, so a Sony MD player is a good, reasonably priced alternative to buying a stand-alone DAC. Most, but not all, Sony MD players do have a digital audio input. Mine has both coaxial and optical digital audio inputs, so if you do go down this route you'll need to make sure both the digital satellite receiver and the Sony MD player have corresponding sockets.

The reason I'd recommend using the digital audio output rather than the analogue output from the digital satellite receiver is because digital satellite receivers are usually relatively cheap, so the analogue audio output circuitry isn't usually designed to a high standard and this could limit the audio quality you get. I hope this covers everything, but if you'd like any further advice or clarification on the above, then don't hesitate to email me, care of the magazine. **SG**



### Linn Linto – DP's choice of £1,000 phonostage?

#### PHONO FIX

*My current system has given me many hours of musical pleasure over the years, mainly classical records and CDs, but recent experience suggests that upgrading some aspects of the amplification might improve things. Current system - Linn front end (LP12, latest Akiva cartridge and Ekos tone arm, Lingo Mk1 power supply - all serviced and upgraded three months ago; Musical Fidelity A1 amplifier (at least twenty years old, serviced once by MF and still performing well); Musical Fidelity Nu-Vista CD player; Lowther London loudspeakers with latest EX4 drive units (these are very large corner horns, requiring little power to drive them); REL Stentor 2 sub-woofer.*

*My listening room is about 15' by 30', so a decent size, and the system can fill the room with sound at very high SPLs if required! The low electrical power, high efficiency speaker route works very well for me and I am committed to the Lowthers for the long term. Having recently upgraded the Linn front end, I was amazed at the improved retrieval of information from LPs; truly staggering. This has led me to think about upgrading the amplification, specifically to add a well-matched phonostage and preamp, and also to upgrade the Lingo power supply to the latest model. I have been considering the new Sugden 21SE amplifier, but what phono stage should I use?*

**Anon**

It all depends on how much you want to spend. For my money, £299 is where the action starts – in the shape of the Trichord Dino. This can be upgraded to 'plus' spec for £200, but then you're getting into Graham Slee Era Gold V territory (£480), and this is more lucid and musical device, with slightly better finesse. It's very sensitive to hum though, and a pain to position as a result. Note too that it lacks MC capability, although the Extender EXP (£499) adds full MC

capability (it's an old fashioned 'head amp', that boosts MC signals to MM levels, not to line levels), and very nice it sounds too (owners of valve phono stages suffering from lack of gain with MC take note!). Together, the Graham Slee combo makes very sophisticated and naturally musical sounds. By comparison, the Trichord Diablo/PSU1 (£695/£295) is more bracing, upfront and in your face, as well as being infectiously musical and powerful too. Moving up to Whest Audio's PS.20/MSu.20 (£1,274), and you have an obviously smoother, silkier, smoother sound with a very subtle, finessed nature and wonderfully accurate tonality. The Linn Linto (£995) is obviously pacier than the Whest, in my opinion, imparting a caffeine-fuelled listening experience. In this respect it's closer to the Trichord Diablo, but it is tonally drier and more two dimensional, even if it's ultimately superior at timing.

My answer, then, is that you pay your money and makes your choice; it's really up to you to find what you're looking for here. I'd suggest the Whest, but that's only my taste; I hope you can use my previous paragraph to get an idea of what you're after.

As for the main power amplification, if you like your Musical Fidelity A1, then you'll more than likely find the Sugden A21SE to be your dream come true. It does everything the old A1 did, and then some. As I've said, I think in some systems, it's my favourite amplifier ever; brilliantly bouncy and musical, it romps along like a dog with a bone. I'd not recommend it for all systems though, as it needs a serious helping hand with speakers – but fortunately your Lowthers seem just the job.

Another, even wackier thing to consider is Croft's Vita tube preamplifier, which has an excellent MM phonostage – all valve! – and

a Lyngdorf SDA2175 Semi-Digital power amplifier. This is bonkers, but it sounds great; tubes plus Class D is an unusual combo, but it's rich, sweet, musical, open and massively powerful for the same money as a Sugden A21SE. Ultimately, you don't need all that grunt with your Lowthers, so I'd stick with the Sugden, but others might like to cogitate over this seemingly silly system! **DP**

With a sensitive horn like the Lowther London I would suggest you listen to a good, low power valve amplifier before making any choice at all. Then you will get an understanding of the differences between solid-state and valve. I would suggest a 2A3 based amplifier and we are getting just such a device in from AudioNote shortly, so look out for our findings on this. The holographic imaging of a low power, purist valve design is more apparent on a loudspeaker like the London, so try it if you can and then decide. **NK**

### THREE'S COMPANY

I have recently acquired a pair of Trio separates, about which I would like to know a little more. The amp is model number KA3055 and the tuner is KT3133. I am extremely impressed with the build quality and solid feel of all the controls. The main tuner control is beautifully weighted and the rotary controls on the amp go through steps that feel both soft and positive at the same time. I have never experienced Trio equipment before and I must say I am mightily impressed. I realise they are probably no longer in production but wondered if you have ever reviewed them in the past and what your impressions were as to their performance and standing.

**Graham Brook**

Hi Graham – Trio was the UK name for Kenwood electronics, which used the latter moniker in all other markets, and then latterly in Britain too. The products to which you refer were from the company's 1979 model year I believe, which was a high water mark for all Japanese hi-fi in my humble opinion. The Yen was still weak, but the quality was oh-so-high; even three years later you could see things were being seriously cost cut across all Jap brands, and that sort of build you speak of became the sole province of the high end stuff. (Have to say, though, the little Onkyo A-933 we tested last year was brilliantly built at the price (£400), and the sound is stunning too). Sadly, Trio/Kenwood has now pulled out of separates hi-fi, and gone chasing sales in the 'consumer electronics'

market – how the mighty fall! Lest we forget, we had Acos, Aiwa, Akai, Aurex, Hitachi, JVC/Victor, Micro Seiki, Mitsubishi, Nagaoka, Nakamichi, Pioneer, Sansui, Signet, Sony, Supex, Technics and Trio all doing serious Japanese audio products thirty years ago, and now it's just Audio Technica, Dynavector, Denon, Marantz, Onkyo, TEAC/Esoteric and Yamaha (by my reckoning). Shame! **DP**

professionals tend to spend money on equipment that has the best specification on paper. This tends to explain the DL103's ruler-flat frequency response to 50kHz, the decent spec. on paper, and the accurate, reproducible production standard.

Thirdly, I would be very willing to accept that hordes of DL103 aficionados are barking mad (woof!) but I just can't shake the notion that a cartridge still



**Remember Trio? Analogue addicts can never forget...**

### OH NO, NOT AGAIN!

You seem to have had a lot of correspondence lately from the parallel universe where the Denon DL103 is a good cartridge, DP is the king and NK is the Lord Beelzebub. As I am looking for a cheapo cartridge to replace the slightly iffy Rega item in my otherwise adequate Rega Planar 3, I decided to look into it.

Firstly the DL103 is eighty quid whereas the Ortofon Rondo and Kontrapunkt devices that you cite as its rivals will cost you £500. Not a particularly fair comparison. Even the well-regarded Goldring's are more expensive.

Secondly, the DL103 was originally produced for the broadcast market and, despite your recent remarks about the standard of equipment used in professional music industry circles, the

in production after forty years is worth looking at.

So I'll be getting myself a DL103 and, if it doesn't work out, maybe I'll have enough money left over to try an Ortofon MC15 Super II – the nearest like-for-like competitor in the Ortofon range. Some say it's as bland as supermarket bread and similarly low in bass fibre but, like the DL103, I like the look of the technical spec. and will take it from there.

**Steven Whittard-Swift**

Hi Steven – may I suggest that you save your £80 for the DL103 and the £120 for the MC15 Super II (that you will invariably buy when you've lost the will to draw another breath listening to the Denon) and pool your resources for the rather lovely Dynavector DV10x4 (£199)



**Anyone wanting a Denon DL103 should buy a Dynavector DV10x4!**

which is a stunning sounding entry level high output moving coil. Add a Michell Tecnoweight for your Rega's RB300 tonearm and you'll be happy as Patrick Cleasby in an Apple Store. **DP**

As you say, the DL103 was developed for the broadcast market, to withstand broadcast conditions. Heavy duty construction was a prerequisite. A lot of people like Harleys - and the DL103 has similar dynamic properties. You may well like it, but don't be surprised if others - er - differ in their views.

A ruler flat response to 50kHz as well, eh? That is interesting, because there is only one test disc in existence I know of that reaches up past 20kHz, JVC Victor's TRS-1005, and it is as flat as camel's whasits above 20kHz. If a DL103 really did ever measure flat to 50kHz I think they were referring to its physical progress in the groove, not its electrical output. It is as willing to change course as a Harley. You are listening to false prophets Steven, who wave worthless scriptures at you. Believe me. **NK**

**PRICE FIXING**

I think the mocking reaction from Noel and yourself to the letter from Anthony Carroll about price fixing in the hi-fi market (March 06) suggests that he touched a raw nerve. The economics of the hi-fi market are a little more complex than Noel describes. Whilst in certain areas (lower end audio and video) the market does operate freely, this is not true across the board, as you must know.

At the lower end, dominated by far eastern major electronic companies, there is frequent model turnover and volume driven sales. Buyers purchase on price, appearance, paper specification and brand name, often without



**Price fixing is a serious business. Doh! Wrong Price!**

considering performance. We find intense competition here, now driven by the internet and a market mechanism operating much as Noel suggests. This is fine, and it is perfectly possible to source a £50 Sony DVD from a discounter, as I did, to play the freebies from the posh Sundays to a perfectly acceptable level.

Once you get into the middle market things become more complicated. For many years hi-fi was exempt from the resale price maintenance legislation and developed a set of marketing arrangements that has continued into the present era. For example, most British and European manufacturers (and those from the far east for their middle and upper market products) generally operate a franchised dealer system where they will sell only through these dealers and not on the open market.

From the manufacturer's perspective, this is justified as providing appropriate standards of service, including staff training, product knowledge, demonstrations, and repairs handling to maintain brand value. Other restrictions, which again may have their

justifications, have included not allowing dealers to mail order product.

These sorts of restrictions may have the effect of maintaining retail prices and reducing competition. Indeed, I have in my hand a manufacturer's price list which was also, until recently, on their website which gives the price at which these goods are offered for sale by their dealers. These are restrictive practices, but not necessarily (except in the latter instance) illegal. Indeed a well known computer company, active in the portable music market, was able to defend in law its practice of maintaining higher prices through its franchised dealers in Great Britain than in the rest of Europe.

Now we need to consider whether such mechanisms which support prices are in the consumers' interest. On the one hand they allow the very things which I require when I am buying on more than price and brand - a pleasurable afternoon listening to music on several different combinations of equipment, over a cup of coffee and in the company of pleasant and helpful staff, who allow you to try the chosen

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**Proof that a conspiracy to fix prices above market level exists, says John Hurley, because Richer sell it cheaper.**

product at home before making a final decision.

On the other hand, dealer franchising maintained car and servicing prices well above European levels, and it is only after the franchised dealer system was weakened that prices have started to fall. It has however increased the rate of bankruptcy amongst independent dealerships.

In conclusion, you dissemble in your denials that there are mechanisms in the hi-fi market that support prices at very similar levels, above those that would occur in a free market.

On the other hand hi-fi provides a very good example of why the free market is not always the best idea from the consumers' point of view, and building minimum standards of service into the final price may benefit the buyer. If you do not like that you can always go to Mr Richer, who is being locked out by most major British brands, bought some bankrupt ones of his own and sells reputedly excellent CD players and amplifiers under an old British name at about half the price of equivalent equipment in a franchised dealer - if you want it off the shelf and in a box.

**John Hurley**

Thank you John, for a most erudite description of the UK hi-fi retail sector, although I still can't really find any proof of your contention here. I think it's normal for hi-fi dealers to work on fixed margins (as do any other dealers), and these give them a small amount of flexibility on price, plus the ability to serve coffee, throw in interconnects, do home installs, etc., as deal-makers or 'sweeteners' for customers. I can't see what is particularly sinister about this; products across all markets have notional 'recommended prices', and the manufacturer sets this and then hopes the dealer sticks to it. If he doesn't, the manufacturer is at liberty

not to sell his products to the dealer anymore. I can't see how this could be changed, except with clumsy anti-'price fixing' legislation, which would (as per most government initiatives) be the bureaucratic equivalent of using a hammer to crack a nut. It would also probably bankrupt all the specialist dealers, at a stroke, too, as how else are they supposed to train their staff, 'add value', etc.?

As you rightly say, the logical upshot of this would be minimum wage staff with no product knowledge, people skills or anything else for that matter (no offence to those on the minimum wage; mine is an implicit criticism of your employers for not training you well and paying you more!), with hapless buyers left to fight it out with companies' customer service help lines at £1 per minute...

All the same, I still can't see any direct evidence of collusion (i.e. all the manufacturers sitting round a table together and deciding on how much to charge for their new mid-price CD players, etc., by common consent - in the way that one suspects the powers that be fix oil prices)... **DP**

My response to that letter was based on my own personal experience of

manufacturing, including Far East sourcing. I also happen to know how the hi-fi business works, inside out, and by-and-large it is tooth and claw, not jaw jaw.

I take your point about car servicing costs, running a car that is fundamentally unreliable, but burdened with excessive spares and servicing costs (it's British!). All the same, I do not see this as a conspiracy against me. I can freely buy something that is reliable and cheap to run. Equally, there's plenty of really cheap, so called "hi-fi" available. But most Hi-Fi World readers are happy to spend more, feeling they get commensurately greater pleasure. There will always be people that shout "rip off" however, at such prices. This isn't conspiracy, it is market economics and free choice.

Julian Richer's own brands are surprisingly effective, but this is more a reflection on the efficiency of the company that designs them in the UK (and sources them in China).

No, in the end there is no conspiracy to maintain prices and certainly no mechanism in place to do so. There are market mechanisms, whereby prices have to be maintained if small volumes of highly specialised items are to be made at all. And some of those items, when their price is amortised over time, turn out to be a lot less expensive than their initial price might suggest.

Nowadays, we are also being urged to reduce consumption, and very high quality hi-fi can manage just this, with a lifespan of up to 30 years or so. Seeing product like this as a conspiratorial rip off is not only misleading, but counter productive.

I am absolutely happy that cheap hi-fi is available to all, if only to demonstrate what a insipid emotional experience it provides and what poor value it is in the long term. **NK**

#### **HARD STUFF**

*There seem to be one or two highly priced CD players with hard drive storage on the market. Are these likely*



**Hard disk servers - the future of music?**

to become more commonplace and reasonably priced in the near future? I would like to store a considerable number of CDs in an uncompressed state thereby, I feel, ruling out MP3 players. I would appreciate your opinion.  
**Colin Pegley**

Yes! Someday, many CD players will be made this way – or should I say 'digital media centres'? As I said in my last reply, we're seeing the computer industry encroach upon hi-fi at an ever-increasing rate, and the forward march of the iPod (et al.) proves how effective it can be. Hard disk drives are well suited to storing large amounts of audio, as Linn's superb Knekt Kivor shows, but as usual it's not what you do, it's how you do it. Cheapo HDD-based machines are noisy, vibration packed and not very hi-fi; more expensive designs such as the Cyrus Linkserver work very well. The cheapest I'd go down to is the Cambridge Audio Azur 640H, which can be had for under £600 with 160GB hard drive – enough even for my record collection! **DP**

#### DAC MAGIC

I have been reading your magazine avidly over the last year and would like to thank you for the quality and variety of your editorial – keep it up. Many of your competitors blatantly ignore manufacturers who do not advertise through them and it is nice to see that you have no axes to grind in this or other respects. I have been building a system over the last year in anticipation of moving to a larger house. The move is now imminent and whilst I am getting closer to my ideal system I still find that it lacks that wow factor. I would like to increase the soundstage significantly and bring a bit more excitement in the process.

The system currently comprises of a Musical Fidelity X-Pre V3 and two XP-200's driving Dynaudio 1.3SE speakers (I also have the 1.8 Mk2's but these have not been tried yet). The sources are a Musical Fidelity A3.2 CD player run via a Musical Fidelity X-10 tube buffer and a Denon AVC-11 multiplayer. I also have a Wilson Benesch Act Turntable and Trichord Delphini Phono Amp, but these need a little work to get them up to scratch. My one First Ultimate cable goes from the MF CD player to the buffer, the remaining interconnects are Eichmann Series 6 and speakers cable are QED XT300's.

Musically, I like a very broad range equally split between classical, pop/easy listening and rock. I find that classical plays best on my system as it is. The sound is clear, and well mannered across the audible range, perhaps lacking a little at the very high-end.

I like the idea of an offboard DAC, particularly if it would help improve recording quality (when I get round to copying my many LP's onto CD and DVD Audio). I have therefore been thinking about a Musical Fidelity Tri-vista 21 or a Chord 64 DAC. I also hope that

If you want sound staging, depth and an easy presentation, try Sendor's excellent S8es, Castle Howards, Quad electrostatics of any pedigree - but be prepared to have them serviced - or even some KEF References. Today's loudspeakers



#### Sendor S8e - a classy sound that's smooth and easy, but has weight.

a Music First Passive Pre-Amp might help improve the system further. Can you advise on the merits of my upgrade path (are there any other suggestions that you could make) and is my cabling up-to-scratch? You should probably know that I have a cupboard full of failed e-bay purchases, including a Croft Epoch Elite pre-amp, which did not do the trick. And yes I know you have warned against this, but it is fun.

**Nigel Howorth**

You have some interesting source equipment, feeding a fairly uninspiring amplifier and loudspeakers Nigel. It's a random e-bay cobble up, you seem to be saying in your last sentence. Time to get a grip!

have increasingly sophisticated drive units, better crossover components and generally manage greater sense of stage depth, insight and image sharpness. Granted, tweeters are going nowhere and bass quality hasn't improved much either recently, but you can't have everything! I hope your new home has a decent sized living room, meaning at least 16ft long, and preferably around 20ft. When you've got your speakers and amp sorted, THEN get a DAC64. Otherwise, the outcome will be as satisfactory as shoehorning a V12 into a Trabant. Simply because they may be available on e-bay doesn't mean they work well together.

**NK**

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## ENJOYING YOUR MUSIC?

The main problem that most customers experience is not really enjoying the music they listen to on their system as much as they feel they should. It's hardly surprising as even walking around the various 'Hi-End' shows, whether here in the UK, or as I've recently done in Las Vegas, it's surprisingly difficult to find a sound that really engages one. One of the problems is invariably the music they play, though frequently exhibitors are borrowing equipment they don't make, from other manufacturers/distributors, who seem only too happy to get their products on display as often as possible. It doesn't however mean that it will work in a given system, however good it may be. System matching is vitally important, which is why a complete system from AVI for example, which I am always recommending, will sound great as it was designed as a system. With a CD player and Integrated 200w/ch amplifier at £1500 each, plus a pair of Duo Floorstanders at £1300, you have a system for £4300 plus cables, that you cannot but enjoy. (For cables I would still recommend the Abbey Road Cables I referred to in an earlier advert, though they are not cheap). To improve the above system you only have to go up to the separate Pre/power combo (far more than just the integrated in two boxes - see www.avihifi.com), or either of the larger speakers namely the Trio at £3250 or the Brio at £4500. I can also recommend the Nola range of speakers (www.nolaspeakers.com), which also go extremely well with the AVI electronics, and if you have room for the larger Electrocompaniet units, then the EC 4.7 Pre and 220 Power will do a great job. We don't go in for hundreds of makes, but only select a small group of equipment which we have evaluated and know work well together. Soon hope to be trying the Chapter Audio Precis Integrated and will report on that later. But whatever your budget, do give us a call and I'm sure we can sort out a system you will enjoy listening to!

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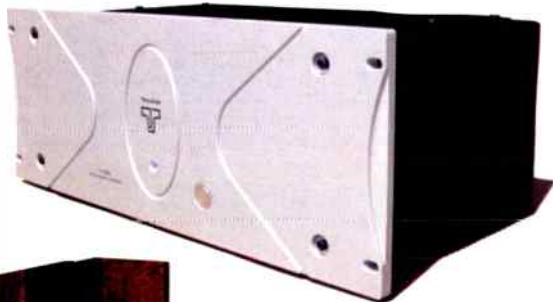
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16. Densen Beat B-340. Power amp. New. Albino. £1500.
17. Densen Gizmo. I have two of these - both brand new in boxes. £150 each.
18. Moon i5 integrated amp. Black. No remote. Remotes are available separately from importer or me. ED. £1950.
19. LFD LS1 linestage pre amp. Black. SH. No box. £375.
20. Plinius SA102 power amp. Black. ED. £2995.
21. Plinius M8 pre amp. Black. ED. £1600.
22. Red Rose Spirit amp. ED. £695.
23. Red Rose Rosette amp. ED. Brilliant - especially partnered with R3 speakers. £1250.
24. Red Rose R3 speakers. Maple. SH. £1750.
25. Red Rose R3 speakers. Maple. ED. £1995.
26. Red Rose Rosebud 11 speakers. Piano Rosewood. ED. £2250.
27. Red Rose Spirit speakers. Rosewood. ED. £650.
28. Red Rose Spirit speakers. French Afrosmosia. SH. £700.
29. Proac Tablette 2000 speakers. Walnut. ED. £425.
30. Acoustic Energy Reference AE1 speakers. Gloss Black. With stands. ED. Very little use. £1850
31. Musical Fidelity A3CR pre amp. Silver/Gold. ED. £650
32. Musical Fidelity A300CR power amp. All Silver. ED ( unused ) £1500.
33. Musical Fidelity A3.2 integrated amp ( last model ) Unused. £650.
34. Consonance J5000 Plus 300B integrated valve amp. ED. £1095.
35. Consonance M100 Plus 300B integrated valve amp. ED. £1150.
36. Wadia 301 Mk 1 cd player. Variable output. Silver. ED. £2250.
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43. Exposure XX111 pre amp. New. £995
44. Exposure XXV111 power amp. New. £995
45. Exposure XX11 CD player. New. £995.
46. Exposure 2010S CD player. New. £350
47. Exposure 2010 ( Not " S " ) power amp. New. £275.
48. Exposure 2010 ( Not " S " ) integrated amp. New. £325.
49. Consonance Cyber 50 valve line pre amp. Mahogany top. ED. £725
50. Consonance Cyber 40 valve phono stage for m/m and m/c. Cherry top. ED. £650.
51. Living Voice Auditorium speakers. Cherry. Black plinths. ED. £1250.
52. Audio Synthesis Passion phono m/c phono stage. £795.
53. Audia CD One cd player. Black/Silver. ED. £2750.
54. Audia Flight pre amp. Black/Silver. ED. £2750.
55. Audia Flight 50 power amp. Black/Silver. ED. £3000.
56. Vienna Acoustics Haydn speakers. Rosewood. ED. £400.
57. Vienna Acoustics Mozart speakers. Beech ( one grille is broken ) ED. £850.
58. Vienna Acoustics. Beethoven speakers. Black Ash. ED. £1500.
59. Anthony Gallo Reference 3 speakers. Black/Silver. ED. £1800.
60. Harbeth HL-Compact 7ES speakers. Birds Eye Maple. ED. £950.
61. Harbeth HL P3ES 11 speakers. Cherry. ED. £550.
62. Michell Technodek/RB250 turntable. New. £475.
63. Talk Electronics Thunder 3.1B cd player. Fixed output. Silver. ED. £1450.
64. Talk Electronics Hurricane 3.1B pre amp. Black. ED. £1350.
65. Talk Electronics Tornado 3.1B monoblock 200 watt power amps. Black. ED. £2150.
66. Veritas " 20 " speakers with matching stands. Piano Black. ED. £995.
67. Veritas H3 Floorstanding folded horn speakers. 102db sensitivity Gloss Black. ED. Paul Messenger rated these as one of his products of the year when he reviewed them ( cost new £5995 ) £3500. No boxes.
68. Totem Model 1 speakers ( not Signature version ) Cherry. SH. £750.
69. Chord Co Signature interconnect cable ( RCA ) 1m. ED. £300.
70. Chord Co Signature interconnect cable ( RCA ) 1m. New. £350
71. Alon 1 speakers. Light Oak ( cost new £1695 ) ED. £650.
72. Alon Petite loudspeakers. Walnut ( cost new £1295 ) ED. £600.
73. Drigin Live Encounter tonearm. Little use. ED. £650.
74. Proac CC1 Centre channel speaker. Mahogany. Slightly marked. ED. £350.
75. PS Audio P600 Multiwave mains regenerator. ED. £1995.
76. Audionote ANE/SpX speakers. Light Oak. ED. With dedicated MAF stands. £1500 Incl stands.
77. Audionote ANK/SpX speakers. Walnut. SH. £550.
78. Audionote P Zero 8 watt push-pull valve mono block power amps. Never used !! £400.
79. Audionote AZOne speakers ( the original design ) Never used. £250.
80. Proac Response 1.5 speakers. Black Ash. ED. No boxes. £750.
81. Meadowlark Swift speakers. Light Oak. ED. £500
82. Philosophy Audio Gold Series speaker cable. 5m Bi Wire terminated with banana plugs. This cable is one of the very very best. ED ( Cost new £1875 ) £1200.
83. Audionote AN-Vx Interconnect terminated with AN-P Silver phono plugs. 2m set. ED ( cost new £1024 ) £650.
84. Musical Fidelity X-80. New. £275.
85. Musical Fidelity X-150. New. £495.
86. Musical Fidelity X-PreV3. New. £495.
87. Musical Fidelity X-150. ED. Never used - displayed only. £450
88. Musical Fidelity X-80. ED. Never used - displayed only. £250.
89. Wheaton Triplanar MKV11 tonearm. With fly lead terminated with RCA phono plugs. Brand new and unused. Complete with manual and gauges. £2750.
90. Pathos Logos hybrid valve amp. ED. £2150.
91. Shanling CDT100 valve cd player. ED. £1250.
92. Isol-8 Powerstation 200 mains regenerator. 2 mains outlets. Perfect for cd players, phono stages and pre amps. Not for big power amps. ED. £995.
93. Quad ESL 63 electrostatics. Still a world class speaker. This pair are in Walnut, 25 years old but serviced by Quad within the last two years and in perfect working order. No boxes. SH. £750.



### SOUND DEAD STEEL ISOPLATMAT £79.95

Placing the mat on any deck's platter is quite amazing; flick the circumference of the platter without the SDS mat and it 'tings' (especially if it's metal, or glass rather than Acrylic) – but then add the SDS mat and repeat the exercise and it's far more akin to a dull 'thunk'.

This shows how the mat takes so much mechanical energy out of the platter, deadening it down more effectively than any rubber, felt, glass, cork or Sorbothane mat I've ever tried. If the 'finger test' proves its mechanical efficacy, then you should hear the difference it makes when records are spun in anger.

This is the best turntable mat I've yet heard. It may not work with every deck equally and may also require some experimentation (rubber mat on or off, arm VTA up or same, etc.), but I've tried it on a wide variety of decks (budget and high end, belt drive and direct) and every time I've wanted to keep it on rather than reverting back to stock. At well under £100, it's a bargain!

David Price - Hi-Fi World January 2006

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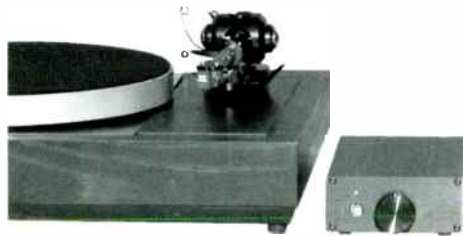
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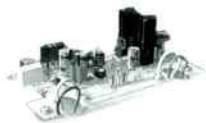
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### CD/HDCD/SACD/DVD/MD PLAYERS

NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### PRE-AMPS

NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### POWER AMPLIFIERS - VALVE

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NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### SPEAKERS

NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### POWER AMPLIFIERS - SOLID STATE

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NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### POWER CONDITIONERS

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NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

### MISC

NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...  
NEW - F... AVFA... WITH... T... W...

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NEW - F... AVFA... WITH... T... W...  
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ARCAM SOLO AMP/CD PLAYER/AM/FM/DAB  
SONUS FABER MUSICA  
CONRAD JOHNSON PFR REMOTE CONTROL PRE AMP (£3000 NEW)  
MUSICAL FIDELITY A-100  
ELECTROCOMPANET EC 4.7 REMOTE PRE AMP  
PASS LABS ALEPH-P PRE AMP LEGENDARY!  
MUSICAL FIDELITY A-300 REMOTE INTEGRATED MM/MC PHONO  
DPA 50S PRE AND POWER C/W LONG SPEAKER LEADS/INTERCONNECT VERY RARE  
AVI 2000 SERIES PRE AMP & LARGE SYSTEM REMOTE  
CLASSE CP-60 REMOTE 2 BOX PRE AMP  
JEFF ROWLAND MODEL 5B POWER AMP  
CLASSE CA-400 POWER AMP  
GRYPHON S-100 CLASS-A POWER AMP  
PLINIUS SA-102 CLASS A POWER AMP (CURRENT MODEL £4700 NEW)  
SONY TAE-1 PRE & TAN-1 POWER AMPS (AWESOME)  
'THE ALCHEMIST' HUGE 220 WATTS/CHANNEL POWER AMP (RARE £5000 NEW)  
'THE ALCHEMIST' REMOTE PRE AMP (£5000+)  
'THE ALCHEMIST' 2 MONOBLOCS (£9000/£10,000 NEW)  
MERIDIAN 565 PROCESSOR  
MERIDIAN 562V  
ROKSAN LS-2 PRE  
AVI S2000 PRE AMP & TWO MONOBLOCS

MINT/BOXED £695  
BOXED £1295  
MINT/BOXED £1695  
BOXED £275  
BRAND NEW/BOXED £995  
MINT £1150  
MINT/BOXED £895  
MINT/BOXED £1250  
£1795  
MINT £1650  
EXCLT £2495  
VGC £3250  
MINT £2895  
MINT £2750  
MINT/BOXED £6500  
EXCLT £2795  
EXCLT £3450  
EXCLT £4750  
TBA  
TBA  
EXCLT £395  
EXCLT £795

## CD/DVD

ARCAM SOLO CD/AMP/DAB/AM/FM  
DENON DVD-A1 DVD AUDIO FLAGSHIP PLAYER FABULOUS BUILD (£2500 NEW)  
PERPETUAL TECHNOLOGY PA-1/PA-3 MONOLITHIC PSU ALL SIG-2 LAST 1  
CHORD 1500E 2 DACS + EXTRA 96/192 KHZ MODULE & VOLUME CONTROL (£6800 NEW)  
ALCHEMIST FORSETTI APD33A TRANS. & APD34A DAC INC.VOL.CONTROL  
AUDIO ANLOGUE PAGANINI  
SONY SCD-1 FLAGSHIP SACD/CD (£4500)  
SONY SCD-1 AS ABOVE  
PIONEER PD-95 ULTRA RARE FLAGSHIP PLAYER  
WADIA 8 TRANSPORT AES/BNC/AT&T GLASS  
MSB LINK DAC 24/96khz MODULE  
THETA CARMEN CD/DVD TRANSPORT RARELY ON THE MARKET.  
AUDIOMECA DAMNATION TRANSPORT AES/EBU BNC/COAX  
PRIMARE V-25 DVD PROGRESSIVE SCAN ETC (£1000) LAST ONE!  
TECHNICS SLP-2000 REF.PLAYER (APPROX £1000 TRICHORD UPGRADES)  
Z SYSTEMS Z-3src UPSAMPLER (£1450 NEW)  
TEAC P-500 TRANSPORT  
AVI CD PLAYER  
DENON 200 CD MULTIPLAYER

MINT/BOXED £695  
MINT £795  
BRAND NEW £1895  
MINT/BOXED £2795  
MINT/BOXED £1695  
MINT/BOXED £450  
MINT/BOXED RING  
MINT/BOXED £1895  
MINT/BOXED £1250  
EXCLT £1450  
MINT/BOXED £375  
MINT/BOXED £1695  
EXCLT £575  
NEWBOXED £495  
MINT £795  
MINT/BOXED £450  
EXCLT £350  
GC £350  
BOXED £195

## VALVE AMPS

ROGUE AUDIO TEMPEST MAGNUM ( FEW HOURS DEM USE £2800)  
ROGUE AUDIO 66 MAGNUM REMOTE PRE AMP  
ROGUE AUDIO 88 MAGNUM POWER AMP  
ROGUE AUDIO 99 MAGNUM REMOTE PRE INC. PHONO STAGE  
ROGUE AUDIO STEREO 90 POWER AMP  
ROGUE AUDIO STEALTH PHONO STAGE (NOT VALVE £800 NEW)  
AUDION REFERENCE PRE AMP INC. PHONO STAGE (£2500+)  
GAAAF 50/50/POWER AMP  
CROFT SUPER MICRO-AII C/W MC. PHONO STAGE (REVALVED)  
AUDIO INNOVATIONS 1000 SERIES 111 (6L6 VALVES)  
LUMLEY M-120 MONOBLOCS TRIODE SWITCHABLE CHROME FINISH (£4500 NEW)  
UNISON RESEARCH 845 INTEGRATED (SUPER AMP)  
UNISON RESEARCH C-5 REMOTE PRE AMP MM/MC PHONO STAGE  
EAR 834P MM/MC/VOLUME CONTROL  
JADIS DEFY-7 (STEREOPHILE CLASS A AMP)  
AUDIO RESEARCH VT-150SE MONOBLOCS (£17500? NEW)  
MICHAELSON AUDIO CHRONOS 2 BOX PRE & MONOS (ULTRA RARE £10,000 NEW)

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EXCLT/BOXED £995  
EXCLT/BOXED £995  
CURRENT SPEC £1495  
CURRENT SPEC £1295  
EX DEM £395  
NOS £995  
AS NEW £1395  
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MINT/BOXED £1250  
MINT/BOXED £1695  
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EXCLT £695  
MINT £395  
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EXCLT £3995

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ALPHASON SONATA/SEPERATE PSU/HR-100 MCS ARM VD.HUL WIRE  
EAR 834P MM/MC/VOLUME (VALVE PHONO PRE AMP)  
LINN LP-12/VALHALLA/CIRCUS/AKITO/K-9  
LINN LP-12/VALHALLA/BAKIK PLUS/CARTRIDGE  
LINN LP-12 BASIK LVV CURVED TONEARM/VMS20E LOVELY ORIGINAL SPEC.  
LINN AXIS/BASIK PLUS TONEARM/CARTRIDGE  
LINN AXIS  
ROKSAN XERXES COGNOCENTV/PSU/REGA ARM & CARTRIDGE  
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EXCLT/BOXED £1150  
MINT £395  
EXCLT £695  
EXCLT £450  
VGC £395  
MINT/BOXED £295  
MINT/BOXED £225  
MINT/BOXED £795  
MINT/BOXED £950

CLEARAUDIO CHAMPION LEVEL -1 & UNIFY ARM 20 HOURS USE (RETAIL £2200 +) 20 HOURS USE £1595  
SYSTEMDECK IIX-900 GC £150  
SYSTEMDECK TRANSCRIPTION 2 SPEED T/TABLE EXCLT £175  
ARISTON Q-DECK/ARM BOXED INSTRUCTIONS ETC £99  
ROGUE AUDIO STEALTH PHONO STAGE MM/MC (£800) EX.DEM £395  
LEHMAN BLACK CUBE SE (RETAIL £650?) LAST ONE! BRAND NEW/BOXED £450  
DENSEN DRIVE MC. PHONO STAGE & PSU VGC £275

## LOUDSPEAKERS

HORNING AGATHONS BEAUTIFUL £1995  
PMC TB1+ MINT £395  
KEF Q4 FLOORSTANDERS MINT/BOXED £275  
SNELL TYPE A-II EXCLT £2750  
TDL REFERENCE MONITORS (WALNUT) EXCLT £1150  
(IMN SARA'S & DEDICATED STANDS MINT/BOXED £495  
TRINITY AUDIO TRIDENT FLOORSTANDERS TRI-WIRE EXCLT £1150  
CURA CA-30 BIRDS EYE MAPLE (£2700+? NEW) MINT/BOXED £895  
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ACOUSTIC ENERGY ASW FB-110 SUBWOOFER AS NEW £350  
REL STORM-1 SUBWOOFER VGC £395

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SOUNDSTYLE XS-100 BRAND NFW/BOXED £195  
SOUNDSTYLE XS 105 5 SHELF BRAND NEW/BOXED £195  
SOUNDSTYLE STATUS RANGE ST-105 BRAND NEW/BOXED £275  
SOUNDSTYLE STATUS RANGE ST-100 BRAND NEW/BOXED £250  
SONUS ELITE 4 SHELF MINT £295  
SOUNDSTYLE XS 105 EX.DEM £149  
TARGET R-2 FILLED STANDS SILVER OR BLACK EXCLT £225  
ATTACAMA R-274 FILLED 24 INCH STANDS VGC £149  
ATTACAMA R-274 LEAD FILLED MINT £195  
ELEMENTAL 20 INCH LOUDSPEAKER STANDS FANTASTIC SEE PIC ON WEB MINT/BOXED RING

CABLES PLEASE SEE WEB FOR FULL LIST

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TARA LABS PRIME 1800 18 FEET!! PAIR BI-WIRE AS NEW BOXED ETC £795  
PS.AUDIO X-TREAM BI-WIRE 3 METRE PAIR £750  
CHORD CO RUMOUR-2 4 METRE PAIR EX.DIS £70  
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AUDIONOTE AN-L 3 METRE PAIR( FACTORY TERMINATED SILVER SPADES) £225  
MIT MH-350 3 METRE PAIR £195  
NORDOST FLATLINE-GOLD BI-WIRE 3 METRE TBA  
QED XT-350 4MM AIRLOC PLUGS TBA

## INTERCONNECT

BLACK RHODIUM ORATORIO BALANCED XLR 1 METRE (£997 RETAIL) BRAND NEW £395  
BLACK RHODIUM ORATORIO BALANCED XLR 2 METRE (£1500+ RETAIL) BRAND NEW £650  
BLACK RHODIUM ORATORIO 1 METRE RCA BRAND NEW £295  
BLACK RHODIUM CONCERTO AWARD WINNING CABLE 0.5 METRE OR 1 METRE BRAND NEW £75/95  
BLACK RHODIUM SYMPHONY 1 METRE BRAND NEW £65  
ACOUSTIC ZEN SILVER REFERENCE 1.5 METRE RCA £595  
ACOUSTIC ZEN SILVER REFERENCE 12 FT PAIR BALANCED XLR £1450  
HOVLAND G-3 1 METRE XLR BALANCED AS NEW/BOXED £275  
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XLO 3 METRE PAIR (PHONO) EX.DEM £225  
TULSA HURRICANE JUNIOR BALANCED XLR 6.5 METRE PAIR £299  
TULSA HURRICANE JUNIOR BALANCED XLR 1 METRE PAIR £55  
AUDIOQUEST DIAMOND 2 X 2 METRE PAIRS £450 EACH  
AUDIOQUEST LAPIS 4 METRE PAIR £450  
NEOTECH PROFESSIONAL CABLE 0.5 METRE PAIR EX.DIS BOXED £199  
CABLE TALK-3 DIGITAL COAX 1 METRE NEW/BOXED £50  
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EAR	GAMUT	EAR	AUDIO ANALOGUE
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web . [www.midlandaudiox-change.co.uk](http://www.midlandaudiox-change.co.uk)



## Ex -demo and second hand items

	Was	Now		
<b>Digital</b>			Martin Logan Aeon I Oak BNIB	3189 2500
Accuphase DP55V CD Player x-demo	2999	1999	Partington Stands 60cm S/H	179 99
Audio Synthesis DAX Decade 22 Bit Single ended S/H	2999	1499	Pen Audio Rebel 2 x-demo	995 699
Electrocompaniet ECD1 24/192 Khz multi-input DAC BNIB	1299	699	Pen Audio Charisma x-demo	1995 1199
Meridian 206 CD Player S/H	N/A	399	Pen Audio Chara x-demo	1600 995
Mark Levinson 31 Transport S/H	9999	3799	Rega ELA Cherry X-demo	749 549
Mark Levinson 30.6 DAC S/H	16000	7999	Rel Acoustic Stadium III light Oak S/H	1500 795
Musical Fidelity Nu Vista CR 3D Player S/H	2999	1699	Sonus Faber Leather Stands, fixed height, x-demo	310 220
Orpheus labs One DAC with anagram x-demo	3150	1799	Spendor SP3/1p Oak S/H	750 399
Primare V10 CD/DVD Player x-demo	795	499	Townshend Super Tweeter Black S/H	800 579
Theta Generation V Balanced S/H	6290	1799		
Theta Pro Basic II DAC with Oscom/Balanced S/H	2990	895		
<b>Analogue</b>			<b>Cables and Accessories</b>	
Audio Research PH3 Phono Stage x-demo	1699	1099	Cardas Neutral Reference 1m RCA-BNC S/H	550 375
Kuzma Stabi/Stogi S Turntable New & Boxed	N/A	1399	Cogan Hall Intermezzo EMD 0.75m RCA S/H	N/A 199
Roksan Xerxes Alphasen Xenon XPSII S/H	N/A	599	Kudos S50 60cm Stands S/H	199 79
<b>Preamplifiers</b>			Nordost Valkyrja 1m RCA-RCA interconnect x-demo	1469 795
Audio Analogue Bellini Remote Preamplifier X-demo	625	499	Nordost Valkyrja 1m XLR-XLR interconnect x-demo	1503 829
Conrad Johnson PV10bL valve Preamplifier x-demo	1299	799	Madrigal MDC1 1m AES/EBU 110ohm Digital Cable new boxed	420 249
Conrad Johnson PV14L Remote controlled valve x-demo	2399	1750	Mana Acoustic Mini table S/H	295 129
Densen B250 Preamplifier 2 weeks old S/H	1100	699	Siltech SPO18M 4m Mains cable IEC-Shuko x-demo	495 295
Krell KRC HR Balanced Preamplifier S/H	6949	2299	Siltech FT 12.G3 2x0.8m Silver Speaker cable x-demo	540 275
Mark Levinson No380 Preamplifier S/H	4999	2499	Siltech LS188 Classic 2x3m Silver & Gold Speaker cable BNIB	3950 2995
Mark Levinson No30 Preamplifier S/H	3999	1799	Spectral MI-350 15ft Interconnect RCA-RCA x-demo	1400 799
Roksan L1 Line Preamplifier Silver S/H	2250	799		
Roksan DS4 Black PSU S/H	449	199	<b>GREAT DEALS ON SILTECH AND SPECTRAL CABLES!!</b>	
Spectral DMC 30s Reference Preamplifier S/H	7600	4999	<b>CHECK WEB-SITE FOR DETAILS!!</b>	
<b>Amplifiers</b>			Sound Organisation Record Rack with CD insert S/H	N/A £40
Audio Analogue Donizetti Mono Power Amplifiers X-demo	1050	729	Transparent Music Wave Bi Wire 2x8ft S/H	499 249
Audio Research VM220 Valve mono Amplifiers x-demo	9000	7499	Transparent Balanced Music Link 2x3m Interconnects S/H	649 325
Audio Research VT60 Re Valved S/H	1999	995	VDH CS-122 HYBRID 2x3m pair Speaker cable ex-demo	172 85
Audio Research CL60 Re Built S/H	N/A	1399	VDH Goldwater 2x3m pair Speaker cable ex-demo	48 25
Conrad Johnson MV60 SE Valve Amplifier S/H	2500	1895	VDH D-352 HYBRID 2x3m pair Speaker cable ex-demo	205 99
Bryston 7BST mono amplifiers Silver S/H	4400	2599	VDH MAGNUM HYBRID 2x3m pair Speaker cable ex-demo	280 149
EAR-Yoshino 890 Power Amplifier S/H	3075	1649		
Electrocompaniet ECI 1 Class A Integrated S/H	3289	995	<b>Tuners &amp; Tape decks, power supplies</b>	
Electrocompaniet ECI-3 BNIB amplifier	1499	899	PS Audio PS300 multiwave x-demo	1750 999
Electrocompaniet AW220 Stereo Power Amplifier S/H	1499	749	Quad FM4 Grey /Phono Tuner S/I I	N/A 249
Electrocompaniet AW120 Dmb Stereo Power Amplifier S/H	2499	1399	Rega radio 3 Silver X-demo	398 279
ECS EA1 Mono Amplifiers (pair)	6500	2999	Rotel RT 950BX Am/FM Tuner S/H	N/A 99
Naim Audio NAP250 Silver Bumper Amplifier S/H	N/A	850	Tice Solo Powerline Enhancer S/H	N/A 249
Naim HiCap Silver Bumper S/H	N/A	375	Tice Solo AV Power Conditioner S/H	N/A 249
OCM 500 Soloist stereo power amp, awesome S/H	2700	899		
Pathos Classic 1 Mk.1 Hybrid integrated amplifier	1250	749	<i>Suppliers and installers of High Quality Audio Systems</i>	
Pathos Logos valve Hybrid S/H	2750	1699	47 Laboratory • Living Voice	
Sugden Master Class Integrated S/H	3250	1799	ATC • Lyra	
Red Rose Sprit Integrated x-demo	1000	649	Audio Research • Magnum Dynlab	
Rega Maia Power amplifier Black x-demo	548	399	Cardas • Mark Levinson	
Roksan S1 Power Amplifier Silver S/H	1499	499	Clearaudio • Martin Logan	
Spectral DMA150 Amplifier x-demo	6850	4750	Conrad Johnson • Mimetism	
<b>Loudspeakers</b>			Copeland • Nordost	
Audio Physic Yara Monitor Cherry x-demo	549	399	Cyrstal Cables • Primaluna	
Audio Physic Yara Floorstander x-demo	999	749	Dartzeel • Primare	
Audio Physic Virgo 3 Maple x-demo	4500	2999	dCS • ProAc	
Avalon Acoustics Symbol x-demo	2900	1999	Densen • Rega	
ATC Active SCM10 SL x-demo	1650	1199	DNM/Reson • Siltech	
ATC Active SCM50ASL Maple S/H	7989	3999	Electrocompaniet • Sonus Faber	
ATC SCM7 Cherry x-demo	499	375	Finite Elemente • Sugden	
JM Lab Diva Utopia Light wood S/H	7600	4999	Jadis • Transparent Audio	
JM Lab Electra 926 Rosenut S/H	2300	1299	Koetsu • VPI	
JM Lab Electra 927 be Anniversary last pair! New	2800	2400	Krell • Wadia	
JM Lab Micro Utopia Anigre with Stands S/H	3999	1599	Kuzma • Wegg 3	
JM Lab Sib XL x5 Grey S/H	1000	650	Lavardin • Wilson Audio	
Martin Logan Clarity Cherry 4 months old S/H	2498	1999		

Midland Audio X-change are looking for Audio Research, Krell, Mark Levinson, Naim Audio, SME, Wadia.

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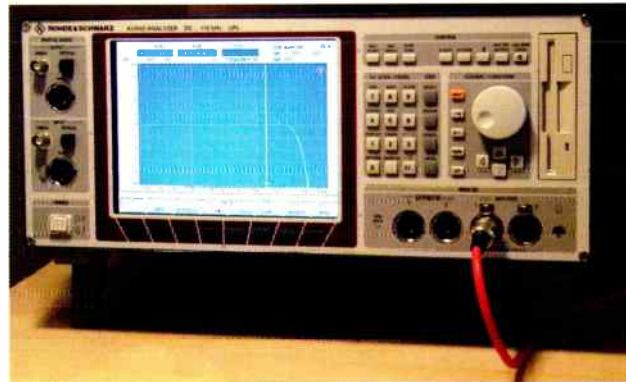
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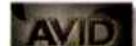
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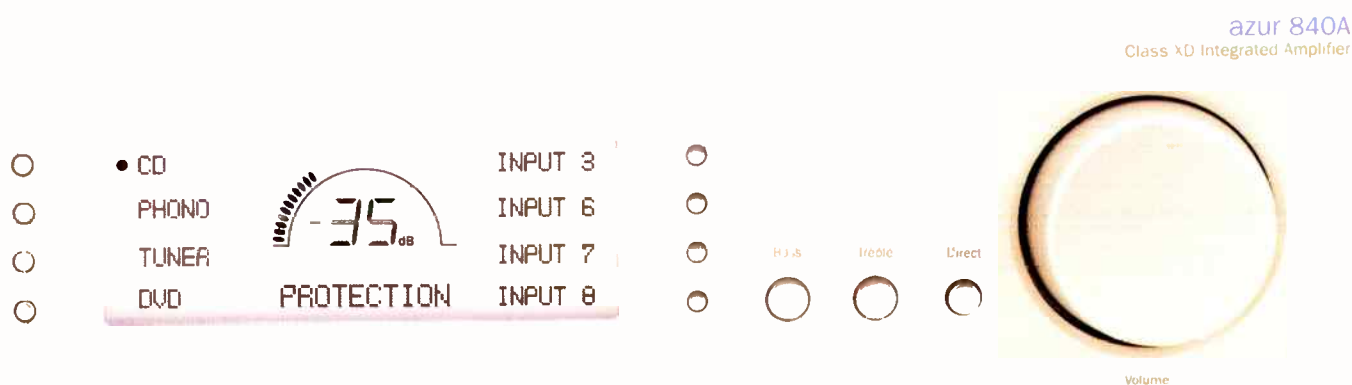
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NEXT MONTH

# BUDGET ESOTERICA



May 2006's *Hi-Fi World* is about affordable esoterica. Is it possible to assemble a serious system with modest money? We try a range of highly innovative products promising great sound per pound. David Price looks at the art of building budget systems, while Channa Vithana, John May and Dominic Todd report on three one-make systems from Eastern Electric, Rega and Marantz. We take the world's very first look at the new Cambridge Audio 840A amplifier (above), promising great things from its 'Class XD' technology, and Noel Keywood speaks to designer Douglas Self. And here are some of the other great budget products we hope to bring you next month:

- Channel Islands tube headphone amplifier
- Audiozone Amp-1 integrated amplifier
- Clearaudio Smart Phono phonostage
- Linn 110 Komponent loudspeakers
- Jungson JA-88D power amplifier
- Magna Acoustica loudspeakers
- Goldring DR150 headphones
- Audiolab 8000CD CD player
- Onkyo DS-A1 iPod dock

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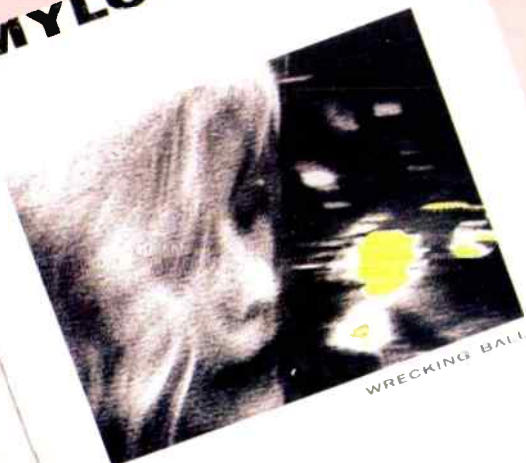


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## EMMYLOU HARRIS



# EMMYLOU HARRIS

## WRECKING BALL

### 1995

**"T**he few people who don't get it are people who think that I should be doing what I did before. But that's confusing to me because I don't think I've ever stuck to just one formula. But I will admit that, as much as I've zigged and zagged over the years, that this was a pretty big zag." - Emmylou Harris

That was 'Wrecking Ball', an album recorded live in Nashville and New Orleans with two core session bands consisting of the producer, Daniel Lanois, Malcolm Burn, U2's Larry Mullen Jr., Brian Blades and the Neville Brothers' Tony Hall. The album includes songs by Harris's contemporaries Steve Earle, Lucinda Williams and Rodney Crowell. But the album didn't stop there, it also investigated material by rock icons such as Bob Dylan (in 'Every Grain of Sand'), Neil Young (with that title track) – who lends a hand on background vocals and harmonica – and, of all people, Jimi Hendrix (with 'May This Be Love').

It was the collaboration with Daniel Lanois that raised eyebrows throughout Harris's country fan-base. Lanois was, in their terms, from a foreign land. He was different, he was strange – he should be exterminated with extreme prejudice. Well, some musos can become quite emotional. For Harris, however, the prospect filled her with excitement. "For me, the collaborative aspect of music has always been a driving force," she said. "You play off of people. I am inspired by working with different people,

people who have a different musical point of view, something unique to bring."

Harris met Lanois through his records, principally Lanois' solo album and his work with Bob Dylan on the No Mercy album. From that moment, Harris was hooked. Looking for other works that exhibited the Lanois stamp, she stumbled over albums by Peter Gabriel, Robbie Robertson and the Neville Brothers, as well as U2. "So then, when I was sort of given a green light to work with anybody I wanted, I said I wanted to work with Daniel Lanois," Harris explained. "So some phone calls were made and it turned out he had some time and interest. I didn't meet him in the flesh until we were talking about working together."

The end product of that collaboration was a dramatic change in artistic direction. Emmylou Harris, country's silvery voice visionary, produced her most experimental album to date. The album was dark, it was moody and had alt.rock written all over it. Gone were her trademark rootsy undertones but it remained Emmylou Harris which elevates this album's content over its controversial form. Indeed the content, backed by that unique voice, does Harris a service because it shows what a cracking singer she really is – moving from lower registers to wispy highs. On the title track, she flits over the deep bass-driven drum beats, sometimes almost breathless with emotional anticipation as she asks her partner to meet her at the Wrecking Ball, to "go dancing tonight". 'Deeper Well' has an almost

techno-roots beat. Think American Indians invading the drum machine. With a underlying roots vibe, the song, partly penned by Harris herself, moves into a determined folk rock rhythm fronted by a deeper, serious Harris vocal before giving way to Dylan's 'Every Grain Of Sand', a swaying beat that allows Harris to up the register. On this track her voice transforms into a weather-beaten framework – a vocalised desert floor exhibiting cracks and imperfections.

"It was very comfortable; we just sang and played together," Harris remembered of her studio time with Lanois. "I just basically sort of trusted what he was doing because everything that I had heard him do was so interesting and different but it had the common denominator, which was his sound. Certainly, this is a natural move for me but there is an overall sound to this record that is different from anything else I have done and that is due to the presence of Daniel Lanois. He made it rougher and rockier and a little rustier and moodier and still kept it very musical."

The CD itself is still generally available and is well mastered. The album displays lots of ambient detail along with a whole heap of memorable low end, featuring a clear, bottom-heavy portrayal of the toms and bass drum. Apparently that lot was recorded using ribbon mikes which might explain a lot. For those with access to an HDCD-capable player, grab the HDCD version of this album which improves the clarity and overall focus. A gem.

PR



# Jas-audio

It was only a matter of time before they matched the sonic performance of their indigenous designs to the astonishing material content and this year we've seen the first evidence. (JAS-Audio Orsa, hi>fi+, issue 43).



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## JAS-Audio Orsa (shown above) - £1,399

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