



**B&W CM5:** Could this be Britain's best small speaker?  
**our verdict**

**CD players compared**

Cyrus, NAD, Roksan and more all under £1,600



# Hi-Fi Choice

**PASSION FOR SOUND**

www.hifichoice.co.uk

Issue No. **335** August 2010 **£3.99**

# Back in black

Dynamic Denons put the sparkle back into real-world hi-fi



**EXCLUSIVE**

**Vinyl's secret weapon**

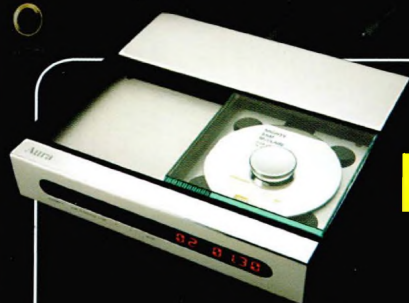
Reviewed: Luxman builds the definitive amp for LP-lovers

**Ready to play**

Tested: Three dealer-picked super set-ups

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Products **tested** including: Moon, Audio Analogue, Pro-Ject and Beyerdynamic



**The perfect hi-fi system?**

Aura's all-in-one challenges the convention of separates

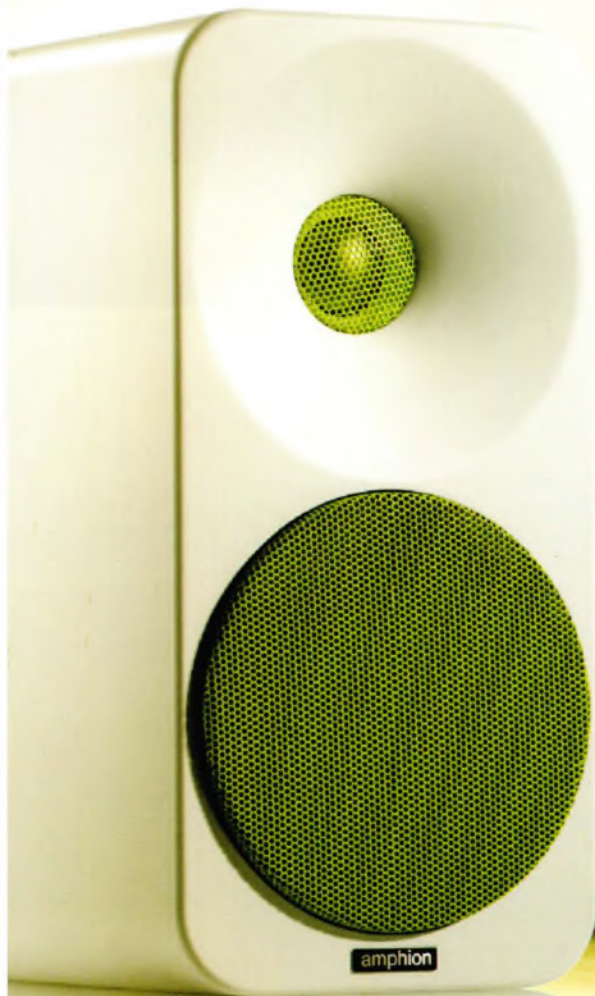
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# Hi-Fi Choice

PASSION FOR SOUND

## YOUR EXPERTS



**PAUL MESSENGER**  
**EXPERTISE:** SPEAKERS

**PAUL** is the UK's foremost expert on loudspeakers. Having worked as a speaker designer and reviewer for over 30 years Paul is internationally recognised for his ability to assess loudspeaker performance, and report on developments in the field.



**JIMMY HUGHES**  
**EXPERTISE:** SYSTEM OPTIMISATION

**JIMMY** has been involved in hi-fi for over 40 years. His knowledge of tweaking and optimising systems is unrivalled in the hi-fi industry and he brings enormous expertise to the pages of Hi-Fi Choice. If anyone can help you improve your set-up, it's him.



**RICHARD BLACK**  
**EXPERTISE:** TECHNOLOGY

**RICHARD** writes exclusively for *HFC* and brings his experience as a successful musician and recording engineer to the title. As Technical Consultant, he's our authority on tech testing, ensuring that our verdicts are beyond compare.



**JON MARKS**  
**EXPERTISE:** DIY AND VINTAGE

**JOHN** previously edited *Hi-Fi World* magazine before joining the UK's leading title, *Hi-Fi Choice*. Jon has a wealth of reviewing experience, as well as a passion for vintage audio gear and a gift for repairing and upgrading ageing kit.



**ALVIN GOLD**  
**EXPERTISE:** PERFORMANCE AUDIO

**ALVIN** is an internationally respected audio reviewer who has contributed to a huge range of magazines over the years. He has a very full 30 years of reviewing under his belt and has a passion for both high-performance and high-end hi-fi.



**JASON KENNEDY**  
**EXPERTISE:** TURNTABLES

**JASON** edited *Hi-Fi Choice* through the Brit-pop era and relinquished the helm after 17 years on the title. A hi-fi addict since his twenties, Jason fell for the beauty of vinyl and has never looked back. He's here to help you get the best from your LPs.



**MALCOLM STEWART**  
**EXPERTISE:** EMERGING TECH

**MALCOLM** is a legend in hi-fi magazine circles. A former editor of *Hi-Fi Review* he was one of the best-known and most outspoken reviewers of the 1980s and 1990s. He now writes exclusively for *Hi-Fi Choice* and he loves being 'back'.

# Welcome...

www.hifichoice.co.uk Issue No. **335** August 2010



**Exceptional hi-fi** products only come along every now and then and we're talking about **future classics**, kit that stands the test of time and demands our attention.

In this issue, we're witnessing not one, but two such wonders. Both are **standard-setting in their class**, yet both are quite different in terms of price and functionality. **Aura's Note Premier** all-in-one (p66) has blown us away at just £1,500 with its combination of style and substance, taking the crown from the ever-dominant Arcam Solo (the **new Solo Neo** arrives next issue, though!). At twice the price and with the sole task of amplification, **Luxman's incredible L550A-II** (p72) has proved itself as a driving force for turntable users, with its near-flawless phono stage.

Both products left us seeing stars this month: red ones in groups of five.

*Dan*

**Dan George** Editor  
dan.george@futurenet.co.uk

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LONDON NW1 6NW +44 (0)20 7042 4000

### OUR PROMISE TO YOU

**HI-FI CHOICE** is passionate about high-fidelity. We're dedicated to the very highest standards of sound reproduction. Our commitment is to bring you the most reliable, in-depth hi-fi equipment tests anywhere and we're backed by the UK's biggest technology publisher. Our expert writers will help you get the most from your hi-fi and guide you towards the best-performing products for your budget. Our passion is your passion.



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## A Jordan Acoustics Exclusive

S Y S T E M D E K 3 D

- Precision Turntable -

### Back to the future

The late Peter Dunlop created the very first Systemdek Turntable over 30 years ago now. From the first day of launch, it caused quite a stir among the press with its numerous innovations. Not surprisingly, it took very little time before people realized just how comfortably it outperformed the competition. Now Systemdek is back and looks set to repeat history all over again with a turntable whose performance, aesthetics and engineering push the very limits of what is achievable today.

Successors to the throne, sons Derek and Ramsay Dunlop's vast experience of building award winning analogue products alongside their father has resulted in a groundbreaking 3-point suspended precision turntable

Going back to the drawing board with a clean sheet, the Systemdek 3D utilizes some extraordinarily clever engineering to ensure it is as free from external feedback as is currently possible.

At the heart of the Systemdek 3D is a unique main bearing, mirror finished and rumble free complete with a magnetically oil damped contactless thrust bearing. The bearing is mounted directly to a solid carbon fibre sub-chassis, itself mounted in a mass damped 'hung' chassis. Due to the unique spring configuration and mass loading, setup is both simple and straightforward for any 9" - 12" arm. Other features include a beautiful Swiss precision DC motor, bespoke control box housing and any colour

imaginable allowing you to match your Systemdek 3D turntable to your particular surroundings or taste.

Peter would be proud. A true Systemdek in every conceivable sense that raises the bar way, way up.

Jordan Acoustics are both proud and honoured that the Dunlop's have chosen us as the UK's exclusive sales agent for the all-new range of Systemdek 3D turntables. It is a true testament to our position as the high-end retailer for specialist hi-fi across the UK.

For further details or to arrange your demonstration please call us on 0800 121 4772.

SYSTEMDEK

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## For more than 20 years Allnic have delighted music lovers across the world with their incredible valve amplifiers

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Attention to detail is paramount, such as the signal path where only **nickel-iron alloy (permalloy)** is used. If a component cannot be sourced or does not meet the rigid standards then Allnic literally make it themselves. A good example of this is the **41 stepped silver contact attenuators** that Allnic make for their pre-amplifiers.

The Power Supply is treated like a blood pumping heart by Allnic. In order for everything to run perfectly, the supply of current has to be both continuous and constant throughout the whole circuit.

The Allnic lineup includes Integrated Amplifiers, Pre-amplifiers, Power amplifiers, Phonostages and Step-up Transformers. Each product punches way above its class to produce stunningly accurate renditions of your favourite music. **Hearing is believing!**

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# ALLNIC

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WORTH  
**£1,140**

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# Audiofile

All the latest news and views from the hi-fi industry



## New tech price crash

Cambridge Audio slashes the price of high-res, audiophile-grade streamers with the radical Sonata NP30

**PRICE:** £400 (TBC)  
**AVAILABLE:** AUTUMN 2010  
**CONTACT:** 0870 900 1000  
**WEB:** CAMBRIDGEAUDIO.COM

**B**anishing physical music collections from shelves to hard drives is slowly becoming the mantra of many forward-thinking audiophiles in the 21st century, but turning ideal into reality has thus far involved some fairly major expenditure, if sound quality isn't to suffer. Cambridge Audio's sub-£400 NP30 is set to change all that, as it brings 24-bit/96kHz streaming right into the reach of listeners operating on a genuinely shoestring budget.

Shielded inside the small, unassuming metal case is circuitry which permits the streaming of

uncompressed audio files around the home (wired or wirelessly) and gives access to over 15,000 internet radio and streaming services.

It goes without saying that the NP30 is hardly the first network music player to handle one or more of these forms of music transmission: Linn's Majik DS is a rather more upmarket, high-resolution alternative (albeit one which is web-free), while Logitech's Squeezebox Duet adds the internet to CD-standard streaming, and can be had for a very reasonable £289 with its 24-bit Wolfson DACs and analogue and digital outputs.

What sets the NP30 apart is its



It packs an awful lot of technology into a very discrete package and heralds a new era



ability to mix the best of these two worlds at such a keen price.

Created by the team behind the legendary DacMagic, the NP30 uses a Wolfson WM8728 24-bit/192kHz-capable DAC and a two-pole Sallen-Key Butterworth output filter, as used in the 350C CD player. Allied to these are the usual stereo RCA analogue outputs, alongside optical and co-axial digital outputs.

Understandably, given its price, the NP30 is bereft of the balanced outputs fitted to the DacMagic, though it does gain a USB socket for replay from memory sticks and compatible MP3 portables.

As any listener who streams their music knows, the hardware is only half the story: poor software (and the shoddy interface it inevitably creates) has been known to push even the calmest user to the brink of hammering the living daylights out of their latest purchase. Joining the NP30 at its launch, therefore, is UuVol: Cambridge Audio's new online music service. We're not too sure how the bizarre moniker came about, but UuVol aims to simplify the process of setting up and customising your NP30, particularly for internet radio, without the need for invective or hair-loss. ●

#### INNOVATION

**CAMBRIDGE AUDIO** has been able to take full advantage of the financial and R&D clout wielded by the Audio Partnership group (which includes a broad range of other brands, such as Mordaunt-Short and Audio Innovations) in the design of the NP30. Considering its price tag, it packs an awful lot of technology into a very discrete package and heralds a new era, when high-res streamers become much more affordable. The NP30 clearly represents another nail in the coffin of mechanical CD replay.

*"Hipness is not a state of mind, its a fact of life"*  
**Cannonball Adderley**



# *Fidelity* with SOUL

## **Chord Indigo Plus Digital**

Whilst most hi-fi and home cinema enthusiasts are happy to accept the influence that interconnects and speaker cable can have on the performance of a system, many people struggle to accept that a digital cable can be equally influential.

The common reaction is that since the cable is only carrying a digital signal, the design and quality of materials used in the cable will have far less influence. Listening tests however, show this is not necessarily the case. Repeated listening tests using high quality digital to analogue converters and home cinema receivers have shown that digital cables can and do have an effect on the sound quality of the system in which they are used. Digital cables are capable of affecting levels of detail, dynamics, sound staging and the rhythmic and tonal characteristics of a system.

The improvements that the Indigo Plus Digital can bring to a system should not be dismissed lightly.



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Get advice on all aspects of hi-fi and home cinema from the Cable Doctor and sign-up for our newsletter, keeping you in touch with the latest product development news, exclusive competitions and technical tips

## A clear motive

Neat's Motive SE2 is small on size, but big on bandwidth

**A**fter its crowd-pleasing debut at the Bristol Sound and Vision show, Neat's Motive SE2 has finally arrived to slake the thirst of audiophiles on the lookout for a petite, but perfectly formed speaker.

As Pink Triangle did many years ago in its Ventrical loudspeaker, Neat has selected a planar tweeter to handle high frequencies; its low moving mass helping to provide good impulse response and extension.

In a leaf taken from the loudspeaker manuals of Roksan and Naim, Neat has also employed compliant mounts to isolate the driver from cabinet vibration.

Underpinning the EMIT tweeter is a 134-mm mid/bass unit with a coated paper cone. Firing into a smaller volume than the standard Motive 2's driver, this unit is now loaded by retuned staggered porting.

Hidden within the cabinet is the hand-wired crossover, hewn from air-cored inductors (wound with

oxygen-free copper cable) and paralleled polypropylene capacitors. More visible is the range of real wood veneers.

Gloss black is available too, as is gloss white, for those intent on keeping up with the designer zeitgeist.



**PRICE:** £1,325 **AVAILABLE:** NOW **CONTACT:** 01833 631021 **WEB:** NEAT.CO.UK

## On air

The WM-10 from France's revitalised Micromega might share its name with Monitor Audio's AirStream DAB/FM/internet radio, but there all similarities end. This latest device from the R&D team led by the company's founder, Daniel Schar, is a wireless network music player which joins that small, but growing band capable of handling music files at 24-bit/192kHz.

Micromega has nailed its colours firmly to the mast with the interface: the AirStream is controlled directly from iTunes on



users' PCs or Macs, or via an iPhone or iPod Touch using the 'Remote' app.

The main rationale for the WM-10's 24/192 support is the upgrades to iTunes, so the site can host high-res files. For listeners who can't wait for a purely iTunes solution, Amarra software can be added to Apple's own, with file support including AAC,

AIFF, Apple Lossless, MP3, WMA and WAV.

Aside from the aforementioned wi-fi connectivity (in 802.11 flavours from b to n), the WM-10's only wired connections on its rear panel are analogue outputs on stereo RCAs and an S/PDIF co-axial (there is no RJ45 socket for cable networking).

**PRICE:** £999 **AVAILABLE:** NOW **CONTACT:** 020 8971 3909 **WEB:** MICROMEGAHI-FL.COM



Class (A) double-act

**RENOWNED FOR AFFORDABLE**

components such as the classic X-DAC and X-Cans, Musical Fidelity's latest offerings are, appropriately enough, a converter and a headphone amp. The M1 features four switchable inputs (co-axial, optical, balanced and USB) and will lock onto incoming signals from 32kHz right up to 192kHz. In a nod towards Cambridge Audio's DacMagic, there are balanced as well as single-ended analogue outputs.

Joining the DAC is the M1 HPA class A headphone/preamp. Distortion is a claimed .0005 per cent, while a low output impedance should allow the amp to drive headphones of almost any impedance. The line and USB inputs, as well as the variable analogue output, point to the HPA's flexibility: headphone amp, uPnP DAC and line preamp.

**PRICE:** £399 (M1); £499 (M1 HPA)

**AVAILABLE:** NOW

**CONTACT:** 020 8900 2866

**WEB:** MUSICALFIDELITY.COM



Groovy, baby

**IT MAY NOT BE** the first turntable to offer a USB output for archiving precious LPs, but audio-technica's AT-LP120-USB is a 10kg heavyweight in an arena populated mainly by cheap, low-fi contenders. The quartz-locked direct-drive motor has been designed to run at 78rpm, as well as 45 and 33, with pitch variable by up to 20 per cent. This will be music to the ears of lovers of shellac disks.

The Audacity audio editing software supplied with the deck will output LPs in MP3, WAV and other formats.

**PRICE:** £255 **AVAILABLE:** NOW

**CONTACT:** 0113 277 1441

**WEB:** EU.AUDIO-TECHNICA.COM

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## Fritz Sennheiser dies

**IT IS WITH GREAT SADNESS** that we report the death of Fritz Sennheiser, founder of Sennheiser, just a few days after his 98th birthday on 17 May.

As an undergraduate at the Technical University of Berlin, Professor Sennheiser developed a deep interest in the analysis of speech and music. A few years later in 1945, he founded the company Laboratorium Wennebostel. Having spent its opening year manufacturing voltmeters, the firm got its first commercial break with an order for microphones from Seimens. Nine years later, Sennheiser had grown to employ 250 workers.

1957 witnessed the arrival of the first wireless microphone, but it was the following year in which two landmark events occurred: first, the change of name to Sennheiser, and second the production of the HD414, the best-selling headphone of all time.

In 1982, Sennheiser relinquished the reins of company management to his son, Jörg, but continued to teach and lecture well past his retirement age.

Justifiably proud of the firm he had founded, he remained a modest, generous family man, commenting in 2005 that "Family is number one and this is how it should always be."

## Hydra-tion

Leema's Hydra II power amp is as flexible as it is powerful

**W**hile the name Hydra might allude to the many-headed flexibility of Leema's updated power amp, perhaps Titan might be another option: working as a monobloc, this imposing beast yields a huge 785 watts RMS into four-ohm speakers, and will happily drive two-ohm loads in stereo mode (think full-range ribbons like some of Apogees infamously

tough loads). The twin hearts which beat beneath the Hydra's stylish exterior are oversized toroidal transformers, their power fed to an output stage which has the sort of low impedance common to muscle amps such as Krell's. Meanwhile, a third transformer works solely with the control circuitry, preventing any interference reaching the audio circuitry. Leema's Intelligent Protocol System, LIPS, allows the

Hydra II to run alongside the Tucana II integrated in a bi-amp or even tri-amp set-up. When used with the Pyxis preamp, the former sends a full-level audio signal to the Hydra II at all times; the volume and balance are adjusted within the Hydra using the LIPS control signals from the Pyxis, which reduces problems with induced signals within the interconnects.



PRICE: £3,495 AVAILABLE: NOW CONTACT: 01938 811900 WEB: LEEMA-ACOUSTICS.COM

## THE MONTH IN NUMBERS 1986

# 25

YEARS BETWEEN NAIM WINNING ITS FIRST SOUGHT-AFTER QUEEN'S AWARD FOR ENTERPRISE AND ITS SECOND THIS YEAR

# 100

# 400,000

is the first year Monitor Audio fitted a metal-dome tweeter to one of their speakers, the R852MD

years since Denon was founded, under the name Nippon Chikuonki Shoukai (Japan Recorders Corporation), by American trader Frederick Whitney Horn and his Japanese partners

RB250 and RB300 tonearms sold since they first went on sale in the mid-Eighties

## NEWS IN BRIEF

A selection of news-breaking stories on everything hi-fi!



• **GOOD NEWS** if you're after cut-price audio equipment: Sony's trade-in scheme includes headphones and modern Walkmans and runs until 11 July. Pure is also offering a selection of its radios as part of the Radio Amnesty. [sony.co.uk](http://sony.co.uk) and [pure.com](http://pure.com)



• **MORE NEWS** from Pure: the firm has put together a 'myth-busting' list of common questions and answers regarding DAB, including the date of the great FM switch-off. [pure.com/switchover/](http://pure.com/switchover/)



• **improveyourcds.co.uk** is offering a mail-order improvement service for CD, DVD, SACD and Blu-ray discs. The basic treatment involves the Audio Desk Systeme CD Sound Improver (HFC 332), with Russ Andrews ReVeel and Relees applied as options.



• **BRITISH FIRM** Orbitsound's new £300 T12 v2 soundbar features updates like additional digital inputs and an iDock which is now compatible with iPhones. [orbitsound.com](http://orbitsound.com)



• **ALTHOUGH THE iPhone et al** offer fine sound quality, there are few dedicated audiophile MP3 players. The Studio and Rocco from HisoundAudio hope to change that. [hisound-uk.com](http://hisound-uk.com)

## New woofer great for Bach

Unison Research's desktop speaker is sure to bring new meaning to the word 'woofer'

**W**e're not quite sure where designer Matteo Cibic found his inspiration for Hi-Fido, his latest creation, but frankly we love the result of his dogged pursuit of innovation.

Bearing a slightly bizarre resemblance to HMV's Nipper if he were to be fitted with an anti-biting

collar, Unison Research's Hi-Fido is just over a foot long and hand-made by craftsmen in ceramic, in a limited edition of 100 pieces. Fitted inside the collar is a three-inch (70mm) full-range driver with aluminium diaphragm, its rubber roll surround optimised for very wide excursion to extend its bass

response. Providing the 20 watts RMS this driver can handle, is a TPA3111 class D amplifier module from Texas Instruments

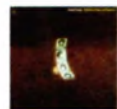
While the lead is not where one might usually expect to find it on man's best friend, we feel this does nothing, however, to diminish the charm of this idiosyncratic desktop system.



**PRICE:** £TBC **AVAILABLE:** TBC **CONTACT:** 01753 652669 **WEB:** UKD.CO.UK

## DESERT ISLAND DISCS

**Arthur Khoubessarian** of The Funk Firm reveals the tunes that keep him coming back for more



**DORY PREVIN**  
MYTHICAL KINGS AND IGUANAS

Outrageously sardonic, witty and irreverent, Previn's Mythical Kings and Iguanas is a masterpiece of lyrical observations, sculpted by a knife which cuts deeper than Joni.



**XTC**  
SKYLARKING

Listening to most XTC instantly transforms a miserable rainy day. Despite Partridge's protestations, Skylarking was a troubled production moulded to perfection by Todd Rundgren.



**RADIOHEAD**  
IN RAINBOWS

A musically rich impasto of human uncertainties, Yorke powerfully pleads acknowledgement for this humanity by manipulating the universal message of music with great individualism.



**BRENDEL**  
BEETHOVEN PIANO CONCERTO NO 4

A piece with but one singular, simple aim: to evoke emotions deep within. You have no choice but to lose yourself (in the piece). Beethoven is certainly a master of the art.

# Good news for CD owners...

## Brennan - a revolutionary new way to play music

The Brennan JB7 is a small CD player with a hard disk that stores up to 5,000 CDs. It saves the space and clutter of the CDs and provides immediate playback of any track.

The Brennan can also record from Vinyl and cassette and can load and play MP3s through the USB port. The idea is you load your entire music collection - past, present and future - then put the CDs etc. out of the way in another room or retire them to the attic. You can either use the JB7 as a source for your existing

Hi-Fi or it will drive loudspeakers directly.

The Brennan gives names to tracks and albums as you load each CD. It takes a few minutes to load a CD. The Brennan has a text search facility that shows a reducing number of matches as you press successive letters on the remote control. Once you get the hang of it you can find one track or album out of your entire music collection in a few seconds. So to find "Nessun Dorma" you would press letters "NES" or "DOR" and scroll through the shortlist of matches.

**"Huge fun to use... a great talking point"**

Daily Mail

**"Ultra simple, Superb"**

Gramophone



## Brennan JB7

### Key Points

- Browse albums by spinning the volume knob - push to play
- Display track names as they play
- Delete unwanted tracks
- Seven rainbow colour coded playlists
- One button plays the entire music collection at random
- Segue function blends one track into the next
- One touch record from Vinyl, cassette or radio
- Clock with alarm
- 60 Watt, 4.8 x 16 x 22 cm steel and aluminium construction
- Backup music to external USB hard disk for safe keeping



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To get the whole story and order visit [www.brennan.co.uk](http://www.brennan.co.uk)

# EURO star

Triangle is one of those rare breeds: a European speaker manufacturer with a UK-friendly sonic signature. **Dan George** went fact-finding just north of Paris

**A** famous hi-fi dealer once said to a keen sales rep: "There are two things I need in this world – one is a hole in the head, the other is another speaker brand." And he was quite right. Our tiny island is already saturated with great (and quite often) British-made loudspeakers. Brands come and go. Often, the biggest casualties are international newcomers trying to get established in a crowded UK market, but one worth millions. The competition is fierce and established dealers are sometimes reluctant to take on a fix for something that ain't necessarily broke.

Clearly, many 'foreign' brands have real staying power and regular readers of *Hi-Fi Choice* may have noticed that, generally speaking, Triangle's speakers have had a steady run of success over the years. Our own Paul Messenger, author of our *Blind-listening Group Test* for speakers, is a fan, too; recommending the Magellan Duetto SW2 (*HFC* 317) from the flagship range for a coveted Ed's Choice award, and giving

## DEALERS

Triangle distributes direct from France to four UK dealers including:  
**THE MUSIC ROOM (Glasgow)**  
**0845 4000 400**  
**KRONOS AV (N.Ireland)**  
**0288 775 3606**  
**MAYFLOWER SOUNDS (Yorks)**  
**01302 711528**  
**AUDIO IMAGES (Suffolk)**  
**01502 582853**  
**WEB: triangle-fr.com**



### THE RANGE

#### MAJESTIC MAGELLAN

Triangle's speaker line-up comprises three basic ranges. At the top end, there's the flagship Magellan SW2 models, comprising a six-strong range and employing the company's finest drive units and cabinet work. Key features of the range-topping series include the T22900 horn-loaded tweeter and wide bandwidth (70Hz to 4kHz), T16PG paper midrange driver and the T21GM fibreglass/paper diaphragm.

#### GENEROUS GENESE

At one rung down from the Magellan and bridging the gap down to the affordable *Espirit* models, is the *Genese* range. This three-strong line-up utilises Triangle's semi-pod, horn-loaded T22500 tweeter – a half-unbaffled unit, designed for a greater off-axis response, a twin-vent bass port, plus Triangle's famous paper mid drive unit.

#### ELEGANT ESPIRIT

Triangle's *Espirit* range represents its most affordable speaker line-up. With some trickle-down technology from the bigger ranges, the four-strong collection also offers a number of home cinema add-on products, including subs, rears and centre channel speakers. *Espirit* offers the same drive unit material compliment as its bigger brothers, including the same titanium-dome T22500 tweeter as the *Genese*, a paper mid and a fibreglass woofer.

'Best Buy' status to the more affordable *Genese* Quartet (HFC 302).

With the factory in the north of Paris and less than three hours away from London via Eurostar, we decided to head over to try and find out how and why this relatively small French speaker-builder's sonic preferences, seem so in-tune with ours here in the UK.

### Grand Designs

It all started in 1980, with architect and music-lover Renaud de Vergnette and (you guessed it) a garage. His vision, according to a Triangle spokesperson, was for "music recreation rather than music reproduction" and the same ethos lives on today. Within just five short years, the company took the critical decision to bring drive unit manufacturing in-house, giving the company maximum control over driver design, engineering and quality control.

By 1990, the company had introduced what it says was the first loudspeaker in the world to feature a curved enclosure –

**"The investment programme has provided the engineers with enough cutting-edge equipment to turn around components overnight"**

something we all take for granted today. These historical milestones in Triangle's past, in our minds, point to a company that's passionate about innovation and high standards during the manufacturing process. But, such in-house luxuries don't come cheap. Triangle proudly claims to invest ten per cent of the company's turnover back into R&D. Certainly, we saw plenty of evidence to verify the claim, considering the scale of the operation.

### Close-knit enthusiasts

Triangle today is still a fairly compact organisation. Just 27 people make up the staff at the 4,500sqm factory in Soissons,

which is about 30 miles north of Paris. At the core of the production end of the business lie two distinct R&D departments working together: electro acoustics and mechanical design. The company's aforementioned investment programme has provided the engineers with enough cutting-edge equipment to turn around prototype speaker components overnight, which serves to accelerate the design process.

Certainly, French consumers seem to have taken notice. Between 1980 and 2006, 70 per cent of Triangle's turnover could be attributed to the domestic market – one which is fiercely loyal to French-made goods. These days the brand is distributed in over forty countries worldwide, including the UK, which has four well-established dealers (see 'Dealers' boxout over the page).

But what is it that makes Triangle popular with UK ears? With only a short stretch of water between the two nations, maybe our tastes are more similar than we realise. The company is quite open about its sonic focus:

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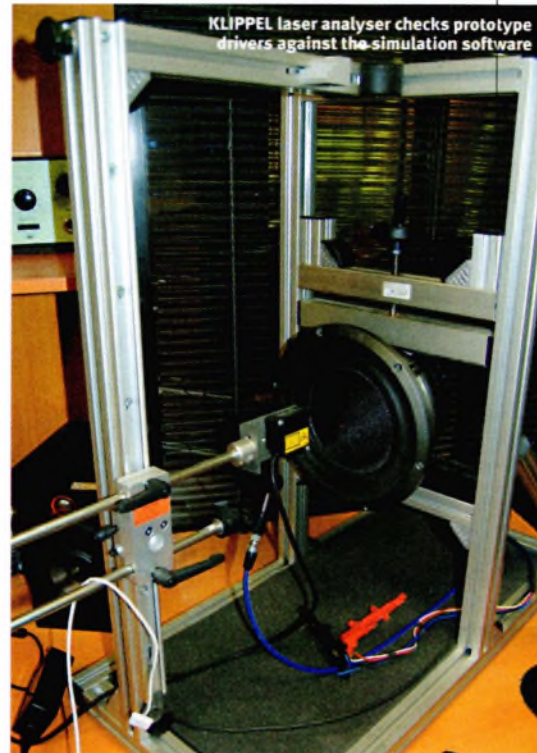
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Driver assembly by Beatrice – the steadiest hand in the whole company



KLIPPEL laser analyser checks prototype drivers against the simulation software

'A concert-like sound, as clear, dynamic and as natural as possible; a very wide but accurate soundstage; natural-sounding mids (the company insists on paper cones); and deep and articulate bass.' Triangle has, in fact, stuck with paper as a cone material for 30 years now, but is increasingly best known for its horn-loaded tweeters, which now feature titanium drivers.

Following a reorganisation in 2006, when the company changed ownership, plans were put in place for a new listening room and R&D centre. One of the biggest tooling

**“Triangle has stuck with paper cone material for 30 years, but is best known for it’s horn-loaded tweeters with titanium drivers.”**

investments around that time was a 150,000 (Euro) 3D printer, which makes sample parts from resin. “It’s made a big difference in prototyping...” said export manager Eric Dubouays, “...we can now go further in R&D before making the actual parts.”

**Speaker craft**

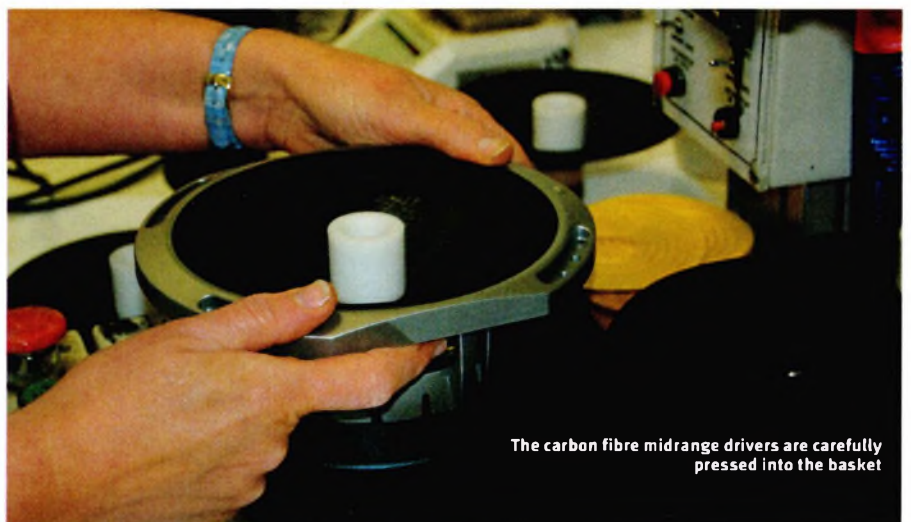
Brand manager Thomas Robert explained how the process of building a loudspeaker starts with analysing driver movement: “Simulations (computer) are used at the beginning to look at the biggest problems.” Triangle showed us the FINECone software package it uses, where cone material data is

entered into the simulator and predicted driver behaviour is calculated. This enables users to analyse the physical properties of hundreds of cone materials.

“The magnet is the next step”, Thomas added. “The software allows us to design the magnet and its size, (show) where the leaks are, and most importantly, the magnetic field.” It’s clear to see at this point, how the 3D printer comes in, allowing the engineers to mock-up resin prototypes with same-day results. Once a suitable driver has been manufactured for testing, it’s off the KLIPPEL laser analyser (pictured above). “This checks the parameters seen on the simulation software” said Thomas.

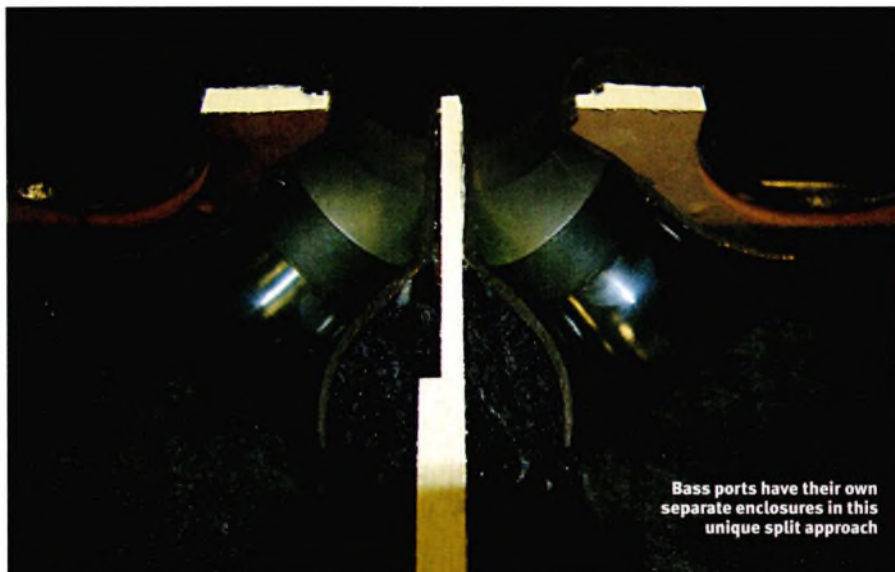


Baskets being prepared for the drive units



The carbon fibre midrange drivers are carefully pressed into the basket

## THE INSIDER TRIANGLE SPEAKER FACTORY



Bass ports have their own separate enclosures in this unique split approach



Triangle's generous warehouse means there's little waiting time



Finished drivers awaiting their cabinets

### Facilities management

Although the organisation is fairly small, the facilities are impressive. 2009's overhaul has provided the team with a range of high-quality equipment, from driver and listening room analysis tools, to a fine engineering workshop with the latest test gear. Indeed, Triangle's anechoic chamber (main picture) is one of the better examples we've seen.

A recently designed listening room remains the subject of ongoing tweaks, much like any hi-fi system. The company employs CATT-Acoustic modelling software to, "try and get the rooms perfected." The software analyses the room and finds problems for the engineers to solve. We enjoyed extensive listening to the flagship Magellan Grand Concerto SW2 on the end of Esoteric electronics, despite forgetting to take our Vanessa Paradis CDs.

A later part of *HFC's* tour took us to the prototypes room (where photos were banned!) and the engineering/repair department, where we met Christophe Riffard, the company's "unofficial historian and curator", according to Eric. In charge of after sales and repair, Christophe is able to repair any Triangle drive unit since 1985 (since manufacturing went in-house) and with a sister who works in the Champagne region, he's clearly a useful man to know.

### Partners in rhyme

Keen to visualise the perfect Triangle-ended system, we asked Eric Dubouays which

**"Although the organisation is fairly small, the facilities are impressive, with a range of high-quality equipment."**

electronics brands he felt worked well with his speakers. "They like Class A designs very much". "Sugden and Triangle work well, NAD, Unison Research and Pathos Class A kit, as well as Esoteric (we spotted a CD and amp in the main listening room, along with a Naim HDX) and Audio Analogue." System-matching is clearly important to the company; "they don't like anything (electronics) with 'highs'." added Eric.

Our tour ended, quite suitably, in Triangle's listening room, which unlike most factory demo rooms, had a reasonable selection of good music. Earlier, we stated our mission to discover why Triangle's sonic signature seems to fit with UK ears. We admit, that whilst our testing has revealed that not every model is a sure-fire winner, the ones that do deliver, hit the spot well. Maybe it's our analogue heritage – Triangle's love Class A and they're also highly efficient, accordingly. Or maybe it's the passion for quality control that simply results in a highly polished product. Either way, this small, French underdog seemingly has lots to offer the UK audiophile.

*Not wanting to leave empty-handed we managed to prise a pair of Lyrr's, from the Genese range, out of the factory manager's stock cupboard, which will be reviewed by Paul Messenger in two issue's time, HFC 337 (October issue). ●*

We asked Triangle for its view on what the biggest technological developments in speaker-building have been over the last decade. "Suspension stiffness has been one big change over the last ten years", said Thomas. "Driver technology has stayed the same... we're aware of the problems as the simulator helps us understand how the cones are working."

Finished cones are then taken to an assembly area, where the voice coils are wound, cones are glued into place and the whole driver assembly and basket is built.

Bowers & Wilkins



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For the PMC iB2

# The science of cartridges

For many, moving coil cartridges are high-end devices, period. **Richard Black** weighs up the pros and cons of the humble MC

It seems I have written quite a few analogue-based technology columns recently, so here's another prompted by this month's MiniTest of phono stages (p100). I was measuring the noise performance of each amplifier in both moving-coil and moving-magnet mode and reflected that it might be worth explaining why there are differences and how they relate to the cartridges themselves.

Electronic noise has previously been a subject of this column and it's a surprisingly tricky subject. In fact, I think it's fair to say that a good many electronics engineers (low-noise specialists apart) don't fully understand it. It's intrinsically a rather mathematical subject, but most of the concepts involved are actually quite straightforward.

The first thing one needs to know is that any resistor, or indeed any part or component with some resistance to it, generates a small noise voltage across its terminals just as it sits there doing nothing. The size of this voltage depends on the value of the resistance, or on the square root of its value, so the voltage across a 100-ohm resistor is ten times that across a one-ohm resistor. In audio terms, by the way, we're talking typically of less than a millionth of a volt.

The next consideration is that any amplifying device also generates noise when it is working. To some extent, the magnitude of this noise depends on the 'source impedance' of whatever is feeding into the amplifying stage – the resistance, inductance and/or capacitance of the signal source.

Third, the various noise sources in a signal chain add together. They add as power, not

voltage, but what's important is that two similar-sized noise sources both contribute significantly. In other words, any noise source that's not much smaller than the most critical one in a signal path must be taken into consideration.

## Times three

It turns out that three noise sources in an LP replay chain are roughly equal in level: surface noise, phono amplifier noise and the noise generated by the cartridge itself. At first, one might think that this works strongly in favour of moving magnet cartridges as they have a higher output, but the important consideration is noise relative to the signal level and that's what I mean here. Because MM cartridges have a higher resistance (typically a few hundred ohms against the 5-40ohms of most MC models) they generate a good deal more noise, something like five to eight times as much noise voltage.

That still means they have a slightly higher signal-to-noise ratio because their output level is generally ten times that of an MC, but the advantage is quite small. And there's the consideration of the phono amplifier – will that have more or less noise for an MM or MC cartridge?

Again, the answer isn't entirely straightforward and again the reason is the differing output levels and impedance of the two cartridge types. Not only is the impedance of an MM cartridge higher, but because of the very high inductance of most such models it rises to several kilo-ohms at high frequencies, putting rather different

constraints on the noise performance of the amplifier that follows. This, incidentally, is why it is just about impossible to optimise one input stage for both MM and MC cartridges and the best phono amps often have completely separate circuits for each.

In practice, the end result is that there isn't much in it for noise performance between the two types, but MC amplifier performance is rather harder to optimise in practice: transformers are one good way to do it but they're expensive, if done well. As for mechanical differences between the two cartridge types, that will have to wait for another technology column! ●

Electronic noise is a surprisingly tricky subject, I think it's fair to say a good many electronics engineers don't fully understand it



**A must-have MC: Dynavector's Karat 17D3 (£699)**



**RICHARD BLACK**  
A musician and recording engineer, Richard knows a thing or two about hi-fi – he's been writing about it for over two decades

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# Follow us on Tweeters

Tweeters have undergone considerable evolution in the last few years and, as **Ed Selley** discovers, the future may prove dangerous

**T**he role of the tweeter in the performance of a loudspeaker is nothing if not demanding. It is required to effortlessly handle the upper registers of the frequency range, all the way to the point where the human ear ceases to register. Many of the sounds it produces are difficult and although slight in comparison to other parts of the register, it can undermine the entire performance of the speaker if not reproduced convincingly. At the same time, the potential of high-resolution music (if not actually matched by sales) to raise this bandwidth much further has added to the pressure. With these key requirements fixed, it is small wonder that speaker manufacturers have been keen to make use of technology developments across engineering to help them towards this goal.

An ideal tweeter must be stiff, light and possessed of good damping – the accuracy of these frequencies depends on how rapidly the tweeter can start and stop. The pursuit of the ‘ultimate dome’ finds us in 2010, with some of the more extreme ends of the periodic table being probed in the pursuit of these goals. Metal tweeters have been around since the 1970s and over time, the pursuit of improved performance from the classic dome shape has led to the use of beryllium, by mass the fourth lightest element in the periodic table.

Rare, expensive and difficult to work with, manufacturers such as Focal persist with beryllium for the simple reason that a typical 25-millimetre tweeter dome made from the same will be three times lighter than its aluminium equivalent, whilst possessing more benign breakup and resonance characteristics.

## The ultimate material

The ultimate metal for tweeters literally faces stiff competition from work undertaken by Bowers and Wilkins among others, with synthetic diamond. When seen up close, a diamond tweeter is rather disappointingly lacking in the ‘bling’ factor we might normally associate with the material. A diamond dome also cannot match the sheer lack of mass possessed by a beryllium dome. Where it starts to pull back the advantage is in stiffness. There is no material harder or stiffer than diamond and the result is a dome that is almost entirely free from breakup or resonances, whilst still being light enough to respond to frequencies up to the 40kHz range.

The production process for diamond tweeters is, to all intents and purposes, as hard as



**“Darling – happy anniversary, I’ve bought you some diamonds.”**

beryllium refinement, featuring as it does phrases such as ‘vacuum deposition’ and the costs are likely to remain high unless the quantities involved increase dramatically.

Of course, there is always someone willing to push the envelope and at this point Lansche audio should take a bow. Lansche eschews anything as mundane as a permanently formed dome for the reproduction of music, however stiff or light they may now be. Instead, it uses a sphere of ionized plasma to create the lowest mass driver that any reasonable interpretation of current physics suggests is possible.

A gas field tweeter is capable of output past the 100kHz point, which should allow for both improvements in recording and any unexpected jumps in human evolution. The system is not without some drawbacks, however, as the speaker needs the power to generate plasma in the first place and one of the more vexing limitations of doing so is the production of ozone which (whilst welcome in the upper atmosphere) is a less desirable gas to build up in a listening environment.

Nonetheless, plasma tweeters represent an intoxicating glimpse into the possibilities afforded to the reproduction of high frequencies and history suggests that today’s extreme high end can often find itself available at more terrestrial price points in the years to come. ●

Plasma tweeters represent an intoxicating glimpse into the possibilities afforded to the reproduction of high frequencies



**ED SELLEY**

Ed worked in retail before joining some of the biggest names in the hi-fi industry creating and supporting audio products

## WHAT DO YOU THINK?

Is plasma taking things a bit too far? After, all, what’s wrong with good ol’ fabric? Email us now: [hifichoice@futurenet.com](mailto:hifichoice@futurenet.com)

# Roksan

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In an age where product longevity and second hand resale values are constantly under threat, Roksan wish to reward their loyal customers by allowing their warranty to be transferrable from owner to owner. Thus, the warranty stays with the product from initial date of sale to 5 years old as long as it remains within the country of origin.

\* terms available upon request



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# Lust at first sight

Back in the 1970s, a Swiss watchmaker launched a tonearm. For audio nut **Jimmy Hughes**, hi-fi would never be quite the same again

I first encountered the Breuer tonearm back in the late 1970s. It was lust at first sight. I wanted to own one more than anything in the world. Despite a fabulous price tag of around £500, supplies of this hand-made jewel were extremely limited. Being impossible to get only fuelled the legend – the Breuer arm became almost mythical.

Now, there's nothing like being told you can't have something to make you want it even more. Apparently, Breuer made something like one arm each week, so there was a very long waiting list. It was like buying an exotic sports car – it didn't matter how filthy-rich you were, you still had to put your name down and wait.

Then, sometime in the mid 1980s, I got a call from the new UK importer. A Breuer Type 8 arm had unexpectedly become available (no doubt, someone died waiting) and would I be interested? It cost a lot of money, but I threw caution to the wind and said Yes. I wasn't disappointed.

The Type 8 felt completely different to any arm I'd ever encountered. Taking the arm from its packaging was a bit like handling a tiny newborn baby for the first time – it felt incredibly delicate. The arm was amazingly light. Headshell and arm tube were wafer-thin, yet (paradoxically) the impression was one of strength and rigidity.

Most arms go down the mass and damping route – thick arm tubes and big fat chunky headshells. But with the Breuer, it seemed as though these parts had deliberately been made as thin as the designer could get away with. That the arm felt surprisingly solid and rigid only added to its charm.

The military-spec gimbal bearings felt silky-smooth, with ultra-low friction and no perceptible free play. And then there was the way the various parts slid together – each section seemed a perfect fit with its counterpart. Even for someone used to handling high-quality precision tonearms, the Breuer felt different and special.

The headshell was milled from a solid billet, and hand-drilled to make it lighter. Such attention to detail, plus a gorgeous finish, created an overriding impression of luxury – a custom-made item, individually hand-crafted, rather than mass-produced. The Breuer looked and felt like a labour of love – you almost felt it had a soul.

## Pick-up

Herr Breuer produced his own pickup cartridge (a modified EMT) and his arm was designed to



To most audiophiles, the Breuer Type 8 tonearm's abilities are legendary

match it. The Breuer arm was not offered as a 'universal' component, so there was just one (rather heavy) counterweight. For weighty cartridges (Koetsu), this counterweight was fine. But it proved too heavy for low-to-medium-weight pickups.

Breuer's low mass/undamped approach would only work if the arm bearings were outstanding. Not absorbing cartridge vibration through the headshell and arm tube ensured that most of this energy would find its way to the bearings. Fortunately the arm bearings were able to handle this resonance without any unwanted chatter.

As a result, the Breuer arm sounded remarkably lively and open, making other arms sound thick and opaque by comparison. Initially you'd notice that pickups mounted in a Breuer had a tonal balance that was more open and energetic. Then, you'd realise the music sounded significantly more dynamic and immediate.

That was it; the Breuer arm had a liveness that made it special and unique. As a result, it was not a kind 'forgiving' component. If used with a poor cartridge and/or badly set up, it could sound rough and aggressive. But heard at its best, the sound had an airy silvery-brilliance that was quite unlike other tonearms.

Although the Breuer arm has gone through quite a few updates and improvements over the years, all the essential aspects of the design can be found in the original Type 5 from the 1970s. Back then, there was nothing to touch it. And even today there is still (arguably) no real alternative. ●

Then I got a call from a new importer; a Type 8 arm had unexpectedly become available (no doubt, someone died waiting)



JIMMY HUGHES

A hi-fi enthusiast for four decades, Jimmy's knowledge of system-matching and record-collecting are unmatched in the industry

## WHAT DO YOU THINK?

Is there really nothing to touch the Breuer arm today?

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# Letters



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## A hard day's listening

I really enjoyed your 'Remasters of the Universe' feature (HFC 333) and would love to see more of the same. After all, great though it is to read reviews of esoteric system components, most of us are (or should be) into hi-fi for the music.

However, I'm now extremely worried because although you didn't deal with The Beatles Remasters in depth. You say that they "finally got it right" with *The White Album*, but on my Cyrus-based system, *Long, Long, Long* has a truly horrible bass sound, which both my car stereos reproduce equally horribly.

The original vinyl was never brilliant, but this is no improvement. Is it my hi-fi or are you missing something? I would love to read a review of

these remasters played on your top-grade equipment, because I for one have bootlegs that sound fresher than these and suspect that these CDs possess little more than equalisation for the iPod generation.

I do have a couple of the vinyl reissues from the 1990s, which are quite good and rumour has it that they are all being reissued. Perhaps we need to wait for them to finally do The Beatles justice on modern equipment. Keep up the good work!

**Ken Vettese, via email**

**HFC** Mark Prendergast, author of the feature, comments:

Dear Ken, *The Beatles' White Album* came out of their time spent in Rishikesh in India. In May 1968 they gathered at

Harrison's Esher house and recorded 23 demos. They then moved to Abbey Road and began an intensive period of spontaneous recording which lasted until November that year.

Abbey Road Studios 1 and 2 were used along, with four-track equipment, as well as a new eight-track machine at the external Trident studios. An anything-goes spirit pervaded the sessions, with instruments placed in corridors and, for *Yer Blues*, the band recorded the track all together in a cupboard. Many tape sources were utilised from the Abbey Road library, both mono and stereo, and in the end the album was an enormous collage that took a marathon 24-hours to assemble and track, thus producing results of a range of sonic qualities.

*Long, Long, Long* was a track that was spontaneously caught and worked upon over three days in October 1968. Its strange use of C minor and G minor chords, and the rattling of a wine bottle atop McCartney's Hammond organ, were defining sounds.

According to Abbey Road's Steve Rooke, "*Long, Long, Long* presented no more challenges than any of the other tracks. And we went through all the past release formats for comparison, including original vinyl copies."

The method for all the remastering remained the same over a period of four years for the seven-man team. Initial tests were carried out on the analogue tapes for dust build-up before they were played on an EMI TG analogue console. Machine heads were checked constantly. Then the music was transferred using Pro-Tools Workstation at 24-bit/192kHz. De-noising technology was used on only 1/100th of the music with overall limiting used sparingly. All early vinyl pressings, plus later CD mixes were then loaded into Pro-Tools for comparison during the EQ process. When the tracks were finished, they were all auditioned by the Project Engineers in Studio 3. Further

auditions took place off-location to complete the process.

Steve Rooke admits to getting a cleaner sound by removing distortions like electrical clicks, lip sibilance, pops or accidental bumps in the studio, but he never touched the sound of the performance itself. As Rooke concludes: "Everybody hears things differently and after two weeks everybody, including The Beatles themselves, EMI, Apple and George Martin, were extremely happy."

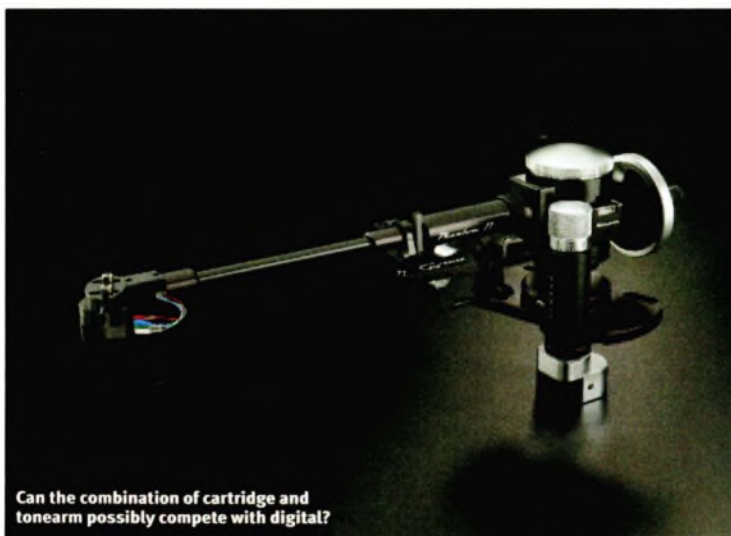
## Digital: not the best thing since sliced bread?

I don't know why Jimmy Hughes should find it puzzling in his review of the Linn Uphorik (HFC334) that the LP has a more musically satisfying sound, after all, music flows like a river; it is an analogue process. It comes in all sorts of colours and tones, which is why we can differentiate between an Oboe, Clarinet or Cor Anglais.

Non-musicians may not always be sure which is the Oboe and which the Cor Anglais, but they can hear the difference which arise as a result of the type of reed used, the length of the pipe, etc.

As to why digital sounds different, for illustrative purposes one can think in terms of bread from different sources. Imagine that one day you pick up your multi-grain loaf and it weighs half as much as it did last week. The vendor will tell you that it is the new 'Digital Bread': it seems to be the same size and is in the same packaging, but for your convenience they have cut it into 2,000 slices and disposed of half of them, replacing them with invisible, tasteless gaps of the same thickness. Removing 50 per cent must have an affect on the taste as perceived by buyers.

The digital conversion process does exactly that, thereby removing some of the information that would distinguish between a Stradivarius and a Grancino. The software designers and engineers fiddle about with oversampling and other techniques to fool the ear into thinking nothing is missing, but it is all smoke and mirrors: 50 per



Can the combination of cartridge and tonearm possibly compete with digital?

cent has been rubbed out, removed. Vinyl carries all the information in a continuous uninterrupted stream, just the way it was played or sung.  
**Jonathon Briggs, via email**

**HFC** You raise some interesting points Jonathan, though it has to be said the technicalities and effectiveness of digital recording and playback are well rehearsed and fully understood. A lot of very clever engineering has gone into what might superficially appear to be a system with the sorts of failings you mention.

We don't have even remotely enough space in these pages to cover those technicalities in any depth, but if you trawl the web, you'll find them explained in exhaustive depth and trust us, it isn't just jargonistic sophistry. Equally, vinyl's shortcomings are laid bare by measurement equipment, amongst them vast amounts of distortion and limited dynamic range. We asked Jimmy himself to respond to your main points too:

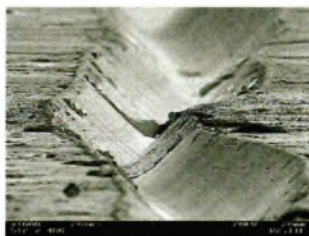
Ah, the old analogue/digital debate; still going strong after 30+ years! One big problem with these debates is being able to distinguish between being faithful and accurate to the original, as opposed to simply pleasing the ear. For me, the whole analogue/digital debate was always more of an LP versus CD issue. A digitally recorded LP, played via a top-class system, still retains many of the musical attributes one associates with analogue – despite the source being digital.

While reviewing Linn's Uphorik phono stage, I listened to Lorin Maazel's early digital recording of

*Dvorak's 7th symphony with the Vienna Philharmonic on Deutsche Grammophon (410 997-1). The richness and depth of the sound was amazing. Yet, when I originally bought this LP in 1984, the recording seemed thin and edgy, with poor dynamics and ambience – the sort of disc that got early digital a bad name.*

*I still have my original vinyl pressing from 1984 and also have the CD. LP easily beats the CD for naturalness and rich spacious clarity. Put simply, it sounds more 'real' – which seems to indicate that LP reproduction has improved more than CD over the past 25 years! However, which of the two gets closest to the original master tape? Do I prefer the LP because vinyl produces lots of nice additives that 'enhance' the sound? Ultimately, is it important?*

*Listening to music is about enjoyment. Absolute accuracy is difficult to judge; we can only voice opinions about which sound is more believable and authentic. Regardless of the technology involved – who makes it, or what it cost – if a recording sounds 'real', and conveys the spirit of the music and its performance, then that's it – job done.*



Given how crude a storage system the vinyl groove is, it's amazing it even works, let alone sounds great

## LETTER OF THE MONTH

### DAB: Dire Audio Broadcasting?

PRIZE  
WINNER!



There's fight in the old format yet: FM can sound superb through a great tuner

**I DON'T KNOW** if it's just my imagination, but a lot of radio listeners on sites across the internet don't seem to be too happy about 'the powers that be' deciding to turn off FM in five years' time: comments look as if they're running at least 75 per cent against the idea.

I do my listening to Radio 3 on a Magnum Dynalab 102 (with valves) through a Naim 200/202. It never sounds less than superb, but that obviously hasn't stopped the wingnuts in Downing Street wanting to remove it in order to sell off the spectrum and force us all to buy DAB receivers to improve our balance of trade with China!

**Ian Hall, via email**

**HFC** For an update on what might lie in FM's future, have a look at our news pages: DAB manufacturer Pure has put together a handy document to clear up some of the confusion surrounding the switch-over. The question now is whether, in fact, it will happen when originally mooted, since UK plc is under new management.

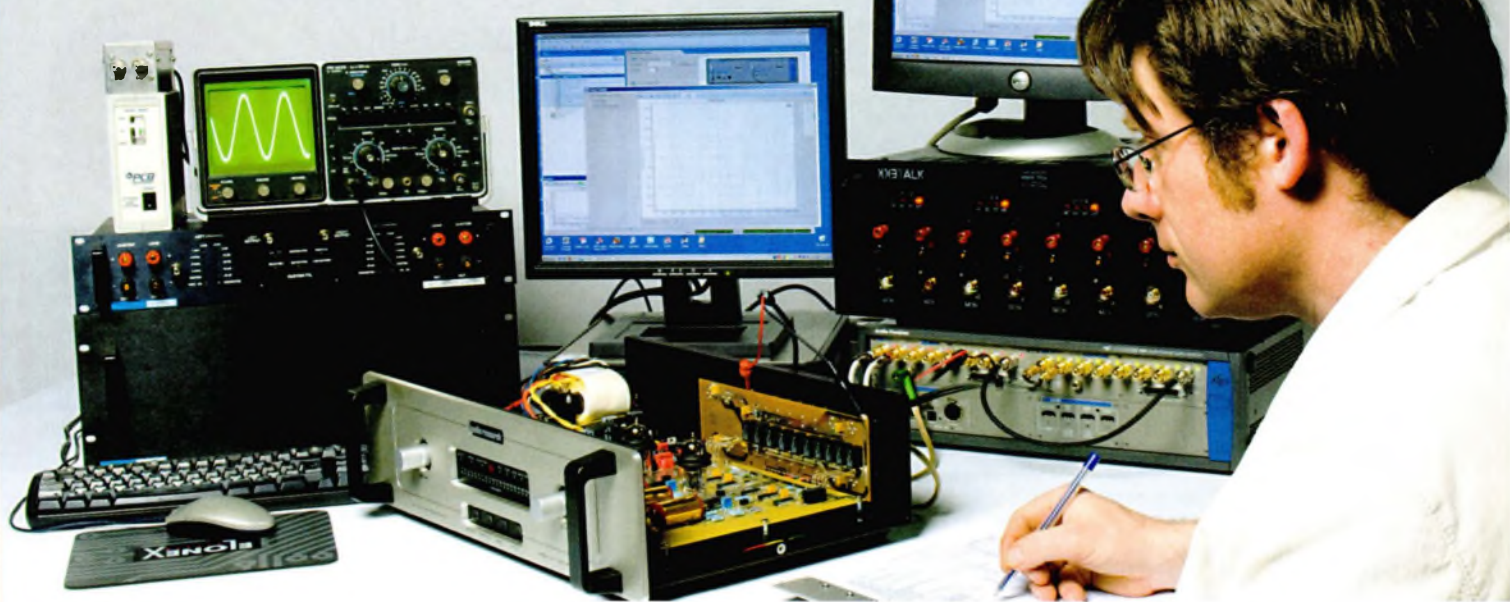
**WIN A RUSS ANDREWS POWERMAX MAINS LEAD WORTH £45!**

Letter of the Month winners will receive an impressive Russ Andrews PowerMax mains lead worth £45, so drop us a line now: [hifichoice@futurenet.com](mailto:hifichoice@futurenet.com)



# How we test

Hi-Fi Choice employs the most rigorous test and measurement regime in the business and here we explain why our definitive verdicts count



## Hi-fi reviews

No other magazine offers a more reliable standard of hi-fi testing. Technical Consultant **Richard Black** explains...

### EXPERT TESTING

FOR OVER THREE decades, *Hi-Fi Choice* has been trusted for its combination of subjective and technical review expertise. The crucial consideration for any audio component is how it sounds, but it is important to back this up with laboratory measurements for many reasons – everything from the wish to check basic performance to the possibility of uncovering peculiar behaviour under conditions, perhaps slightly different from those of the subjective tests.

#### Listening

Subjective testing doesn't necessarily require the world's sharpest ears. What's more important is the experience to analyse the sound arriving from the hi-fi and this is where our subjective reviewers come in: they have been listening critically to audio equipment for aeons and have learned to identify the characteristics that make kit informative, involving or just plain dull.

#### Measurement

But even the most experienced listener, with a stack of familiar recordings heard in familiar surroundings, can't always know what is causing a particular

characteristic in the sound. Brightness, for instance, may be a function of frequency response or distortion and this is where measurements come in. We analyse a range of parameters to see just where the correlation lies between sound and design. Our test equipment has been tried, tested and added to over the years and again our experience with it is unrivalled.

#### Straightforward presentation

We call on that experience to boil down the measurements to simple bar charts, which show at a glance how well a component behaves relative to others in its category. It's this combination of subjective and technical expertise that makes our reviews the most useful in the field.

“crucial consideration for any audio component is how it sounds, but it is important to back this up with laboratory measurements...”

#### OUR AWARDS



**EDITOR'S CHOICE:** Awarded to those products that are judged to deliver reference-standard performance



**RECOMMENDED:** The products we feel meet a certain high standard of performance



**GROUP TEST WINNER:** Comparative tests can only have one true winner, and this badge says it all

## STATE-OF-THE-ART HI-FI TECH

HFC's test equipment is the most advanced kit available



AT HI-FI CHOICE, we have access to some of the most advanced test equipment currently available on the market, including the Audio Precision APx585, which you'll find in the labs of many top hi-fi manufacturers. The 585 can be configured to test a variety of key hi-fi products, such as amplifiers, CD players/DACs and – with the help of a specially-calibrated microphone – loudspeakers.

In conjunction with some conventional lab equipment at our disposal, the 585 will also be used to test analogue playback equipment including phono stages and turntables. These objective measurements – which conform to recognised industry standards – are designed to complement subjective evaluations such as the listening panels organised by our internationally respected reviewers.

The standard of our test facilities is unrivalled in the UK press. Quite simply, no other magazine offers this level of cutting-edge testing, making the verdicts in *Hi-Fi Choice* the only ones you can really trust.

# Unrivalled group tests

*Hi-Fi Choice* is the only magazine to offer blind-listening group tests, fully backed up with objective data

## BLIND-LISTENING TESTS

**THIS CRUCIAL** test involves relatively rapid-fire comparisons of the test units for a panel of three listeners who are not aware of which product they are listening to. Levels are accurately matched and the test is conducted with the minimum of distractions, playing the same programme through each system while the listeners take notes of whatever pleases or bothers them.

In this way, an evaluation free of prejudices based on brand, price or appearance can be made, while the different tastes and sensitivities of each listener help round out the analysis and make it more widely applicable. Occasional repeats of kit give a 'sanity check', while years of experience help make the process efficient and reliable.

## SIGHTED LISTENING

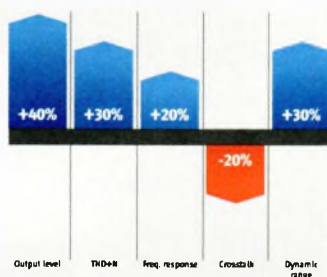
**IN ADDITION** to the 'blind' test, the author also spends a longer period listening to each system with various items of partnering equipment and a wider range of music. Apart from the obvious fact that this is how most people listen most of the time, this also has the advantage that interesting aspects of the sound can be investigated and different musical

styles tried out to see what works, not to mention experimenting with such variables as listening level.

Long-term reference pieces of equipment (some from past reviews) get substituted for the kit under test from time to time, in order to check on performance relative to the rest of the audio world, while recordings made by the author provide a live reference.

## TECH LABS

### RESULTS AT A GLANCE



**FOR THIS MONTH'S CD player *Blind-listening Group Test***, we pressed into service the APx585 audio analyser (see boxout opposite). This highly sophisticated PC-controlled instrument can simulate many items of lab equipment, including an oscilloscope, audio voltmeter, chart recorder, phase monitor and test signal/sweep generator.

For CD players, the APx585 is used in conjunction with a specially created *Hi-Fi Choice* lab test disc to measure a number of key performance criteria. There are five of these – which are summarised for each of the reviewed products using our unique bargraph system. Anything out of the ordinary is commented on in the lab report which compares like with like across the whole six-way group.

### OUTPUT LEVEL

We measure the output levels of both right and left channels, with a standard 0dBFS (full-signal) stereo 1kHz test tone. For a CD player, we should expect both channels to be around two-volts RMS.

### THD+N

Part of our testing procedure involves measuring THD+N with much lower-level signals (-20dBFS and -60dBFS). THD+N will increase as signal level decreases, owing to the limitations of CD's PCM technology.

### FREQUENCY RESPONSE

With CD players, you should expect a flat frequency response from 20Hz to 20kHz. The Tech Labs measure this by conducting a frequency sweep between these two frequencies and monitoring the output.

### CROSSTALK

We measure leakage from the left channel to the right and vice versa. The higher the figure, the better. There should be little difference between the two figures, and what's listed here is the average of the two.

### DYNAMIC RANGE

This spec expresses the difference between the highest amplitude distortion-free signal a CD player can output (a sine-wave is used here). The higher the figure, the better. In theory, 16-bit CD has a dynamic range of 96db.

### TESTING EQUIPMENT USED

**Source:**  
Pink Triangle PT Export/SME309/Highphonic MC-A3

**Speakers:**

•B&W 803s

•ATC SCM20

•Rogers LS3/5A

**Cables:**

Atlas, Wireworld, van den Hul

### TEST MUSIC USED

**OTIS REDDING:**  
*The Dock of the Bay*



**IAN DURY:**  
*The Bus Driver's Prayer and others*



**PALLAVICINO:**  
*Madrigals*



## THIS ISSUE'S BLIND PANEL

This month's panel of experienced listeners from within the industry are:



**REUBEN KLEIN**  
**JOB:** SALES AND SERVICE MANAGER  
**REUBEN IS** a music lover, high-resolution, two-channel enthusiast and a specialist in HDMI transmission systems. He was formerly involved with amp manufacturer ECS.



**STEVE REICHERT**  
**JOB:** PR MANAGER  
**NEARLY FORTY** years in the business, Armour's PR man is also the 'Golden Ears' for its QAcoustics loudspeaker and QED cable brands.



**MARTIAL ROUSSEAU**  
**JOB:** RESEARCH ENGINEER  
**MARTIAL STUDIED** physics and acoustics in his native France, before completing a doctorate in the aerospace industry. He is currently employed at the Bowers and Wilkins Research Centre.

## DEFINITIVE VERDICTS

No other magazine offers an equivalent listening programme

Few, if any, magazines in the world can equal our dedication and thoroughness in combining blind and sighted listening with extensive lab tests and detailed internal examination of equipment passing through our hands. Each of these is equally important and it's not just that we do them – we also bring to the table decades of audio experience.

Our listeners in the *Blind-Listening Group Tests* for example, are experts from within the hi-fi industry. Each and everyone of them is used to listening critically during product development and initial product testing. In fact, many of them also get involved in making recordings and their own music.

One of these is *HFC's* Technical Consultant Richard Black, who has been involved with designing, testing and evaluating audio equipment for a quarter of a century.

It's the culmination of all the aspects mentioned on these pages that makes for the most reliable hi-fi verdicts in the business.

TESTED THIS MONTH: CD PLAYERS  
**TURN OVER NOW!**

# A timeless musical experience



REFERENCE 5  
Vacuum Tube Line-stage Preamplifier

■ ■ It is the best  
**valve preamplifier**  
I've ever used. ■ ■

Ken Kessler | Hi-Fi News | Jan 2010



REFERENCE CD8  
Compact Disc Player

■ ■ Quite possibly  
the best all-round  
**single box CD**  
**player** I've heard. ■ ■

Roy Gregory | Hi-Fi+ | Issue 64



REFERENCE PHONO 2  
Vacuum Tube Phono Preamplifier

■ ■ The most  
**persuasively**  
**lifelike** phonostage  
I've heard. ■ ■

Jonathan Valin | The Absolute Sound | Jan 2010

Over 40 years Audio Research has established a new syntax of emotional, evocative sound. Motivated by the uncompromising pursuit of the ultimate musical experience, Audio Research has created a succession of products that have each gained iconic status. Built by hand with the end user always in mind, Audio Research components combine innovation with longevity – all units being repairable to original performance standards, no matter how old.

The Audio Research collection encompasses both valve and solid-state technology, delivering some of the most critically acclaimed CD players and amplifiers yet devised. The three components featured above – the latest additions to the world-famous Reference line – have already received the rapturous reception one expects of this prestigious marque.

Like all true musical legends, Audio Research creates timeless classics; whichever component you choose, you'll find it's the ultimate sound investment. For details of the full range and your nearest dealer, contact Absolute Sounds.

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HIGH DEFINITION

**absolute sounds ltd**  
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**FOR YOUR** chance to win this superb system, please answer the following question:

**What type of amplifier is the Amp Box SE?**

**A: Class D**

**B: Class A**

**C: Class of '83**

For your chance to win this Pro-Ject system, text SYSTEM A, B or C to 87474 or visit [futurecomps.co.uk/system](http://futurecomps.co.uk/system) and follow the instructions, leaving your selected answer and details where prompted

**THIS SYSTEM** may be small, but Richard Black discovered in *HFC 333*, that it's perfectly able to pay its way amongst full-size components, the individual units gelling into a whole which is detailed, as well as musical.

In fact, Class D amplification not only consumes less space than

traditional analogue designs, it's also considerably more power-efficient. This has enabled the cunning designers at Pro-Ject to shoehorn an 80-watt amplifier into the Amp Box SE's tiny enclosure.

Partnering the amp in this enjoyably rhythmic and well-balanced trio is the CD

Box SE CD player, which benefits from commendably low levels of jitter; an important fact given its co-axial S/PDIF output for an external DAC.

Rounding out the roster is the clean, uncluttered Pre Box SE preamp, with its four line inputs and an output for recording.

TERMS AND CONDITIONS To enter the Pro-Ject competition, you can either (a) text your answer to 87474 at any time between 24.06.10 and 21.07.10, or (b) enter online at [www.futurecomps.co.uk/system](http://www.futurecomps.co.uk/system) with your entry being received between 24.06.10 and 21.07.2010. By sending your entry you agree to these competition rules and you confirm you are happy to receive details of future offers and promotions from Future Publishing Limited and carefully selected third parties. If you do not want to receive information relating to future offers and promotions, please include the word STOP at the end of your text message or at the end of your postal entry. Texts will be charged at £1.00 plus your standard network tariff rate.

By taking part in a Competition, you agree to be bound by the Competition Rules, which are summarised below but can be viewed in full at [www.futurenet.com/futureline/competitionrules.asp](http://www.futurenet.com/futureline/competitionrules.asp). Late or incomplete entries will be disqualified. Proof of posting (if relevant) shall not be deemed proof of delivery. Entries must be submitted by an individual (not via any agency or similar) and, unless otherwise stated, are

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By entering a Competition you give permission to use your name, likeness and personal information in connection with the Competition and for promotional purposes. All entries will become the property of the Company upon receipt and will not be returned. You warrant that the Competition entry is entirely your own work and not copied or adapted from any other source. If you are a winner, you may have to provide additional information. Details of winners will be available on request within three months of the closing date. If you are a winner, receipt by you of any prize is conditional upon you complying with (amongst other things) the Competition Rules. You acknowledge and agree that neither the Company nor any associated third parties shall have any liability to you in connection with your use and/or possession of your prize.

# Blind-listening Group test

CD PLAYERS £820-£1,600

## Can CD players learn a valuable lesson from vinyl?

As CD slowly but surely gives ground to downloads, **Richard Black** tries out the very latest disc players to see how evolutionary tech is maximising CD quality

**PERHAPS OUR HEADLINE** sounds a little alarmist, but there is a valid analogy between CD and LP in at least one respect: each has lost its place in the audio mass market. But, as both formats still find favour among audiophiles and music-lovers, there's absolutely no reason to suppose that CD players will cease to exist in the near future.

While it's true that sourcing some of the constituent parts (especially optical bits) might, in the foreseeable future, prove a little difficult, it's more than likely that CD players will still be around a couple of decades from now. What's more, there are still plenty of labels putting out CDs – the closure of record shops is as much to do with internet retailers such as Amazon as it is to do with iTunes.

All things considered, then, it's not in the least bizarre that manufacturers continue to put new models on the market. But to what extent are these models actually new? Technologically, there's not been all that much progress

in digital audio in the last ten years. Practically all DAC chips have specs well ahead of CD's requirements, while the power supply and analogue parts have hardly changed. The honest answer is that, at least in the affordable market, changes have been small and evolutionary rather than revolutionary.

**“... there's no reason to suppose that CD players will cease to exist in the future.”**

A tweak in circuit layout here, or some new control software there, are the kind of things that single out the latest players. Similar changes, in fact, to those we've witnessed in amplifiers, changes that can only add up to a marked improvement in performance.

So, if you haven't heard a new CD player in a while, then the models in this *Blind-listening Group Test* might offer some pleasant surprises.



### PRICING

Averaging around £1,200, many would consider the CD players included here to be in the mid-price range, although that definition may be shifting a bit as budget players slowly disappear.

The cheaper Micromega and Roksan players don't have either the features or the impressively smart looks of the top-priced NAD.

Internal appointments don't vary vastly (apart from the multi-channel NAD) and on the whole this is one of the most uniform groups we've tested of late.

### ON TEST



**Audio Analogue Rossini VT 2.0 £1,200 P37**  
The 'unique selling proposition' here is the valve in the analogue circuit, which allegedly gives just enough character to the sound, without distorting details or images. The use of a CD-ROM transport is also unique in this group, although it's not uncommon in general, while the look and feel is distinctively impressive.



**Cyrus CD85E £1,300 P39**  
The latest in a long line of Cyrus players, the SE features Cyrus's own transport. Mechanical parts have been bought in, but the control software is unique to the company and is claimed to optimise sound. Apart, perhaps, from the display, the Cyrus look has lasted well over the years without ageing and the slot-loading transport is nice to use.



**Micromega CD-10 £820 P41**  
Slimline, simple and unpretentious, this player is very much of a piece with the products that made Micromega's name. Its features are basic but perfectly adequate and its lightweight aluminium case probably does no harm at all in keeping mechanical resonance at bay. Special attention to the power supply is claimed.



**Moon CD.5 £999 P43**  
The base model from this Canadian maker, whose range includes some decidedly high-end products. Perhaps not the most stunning looker, but it's a businesslike and very efficient machine that's a joy to use. Again, not much in the way of features, but build quality is very good and the unit is highly robust.



**NAD M5 £1,600 P45**  
The outright winner on features, this is the only SACD player in the group and one of remarkably few players currently available that will play multichannel CDs. It even has completely separate stereo and multichannel outputs. Add compatibility with MP3 and WMA discs and you have a horse of a rather different colour from the rest.



**Roksan Kandy K2 £899 P47**  
The latest version in Roksan's well-established Kandy mid-price range, with features closely matching those of the others here (except NAD). It includes an AES/EBU digital output, making it compatible with pro-oriented DACs. Its display and control buttons are distinctive and it comes with an unusually sexy remote control.



# DEFINITIVE AUDIO

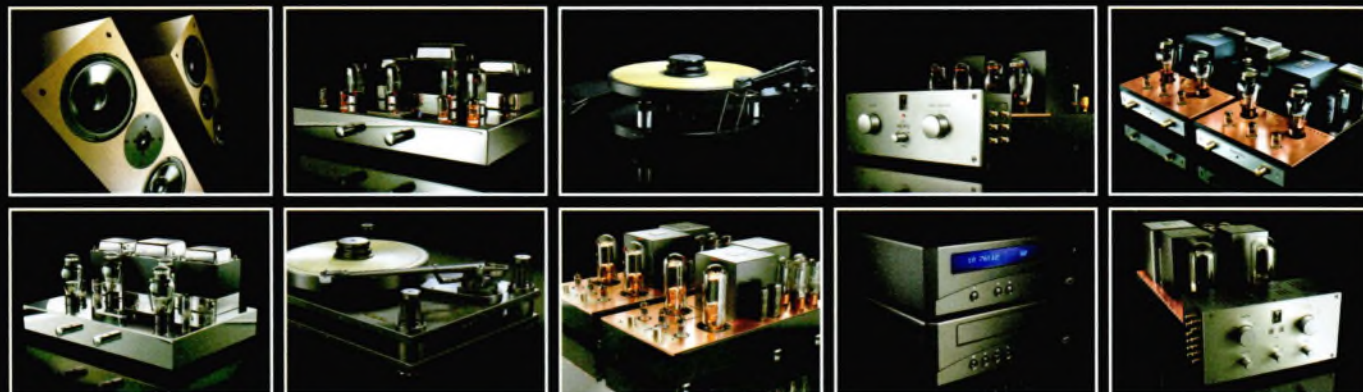
THE WORLD'S FINEST HI-FI SYSTEMS



LIVING VOICE

Loudspeaker Systems

**Main image:** Living Voice OBX RW loudspeaker in Santos Rosewood



**L to R:** 1. Living Voice IBX R2 2. Art Audio Concerto integrated amplifier (GE) 3. SME 10 & Series V arm 4. KSL Kondo Neiro integrated amplifier  
5. KSL Kondo Gakuoh 300B mono amplifiers 6. Art Audio Argento 300B integrated amplifier (WE) 7. SME 2012 & KSL Kondo lo-J cartridge  
8. KSL Kondo Gakuon 211 mono amplifiers 9. Resolution Audio Opus 21 CD player 10. KSL Kondo Ongaku 211 integrated amplifier

T. +44 (0)115 973 3222 E. shout@definitiveaudio.co.uk [www.definitiveaudio.co.uk](http://www.definitiveaudio.co.uk)



# Audio Analogue Rossini VT 2.0 £1,200

The addition of a valve in the output stage gives this player a distinctive character all of its own

## DETAILS

**ORIGIN:**  
Italy  
**WEIGHT:**  
8kg  
**DIMENSIONS:**  
(WxHxD)  
445x90x359mm  
**FEATURES:**  
• Analogue output:  
single unbalanced  
• Digital output:  
electrical S/PDIF  
**DISTRIBUTOR:**  
Audio Futura  
**TELEPHONE:**  
0039 0572 954513  
**WEBSITE:**  
audioanalogue.com

**V**ersion 2 of a product can signify something as trivial as a new front panel layout, but this CD player looks distinctly different internally, from the original Rossini.

It's unique in this group, in that it incorporates a valve; a 6922 twin triode (one section per channel) in the audio output stage, which is likely to give it some degree of distinctive character.

In fact, Audio Analogue acknowledges, with admirable candour, that the valve adds some 'colour' to the purity of digital sound. Those audiophiles who are never quite happy with the high-feedback world of op-amps will appreciate the output circuit, which uses discrete transistors, along with the valve in a low-feedback structure.

The disc transport is a CD-ROM-type made by TEAC, which has apparently been optimised for audio duty. We don't recall hearing such an idea before, but there's no reason at all why it can't be done. The digital output of the drive feeds what is effectively a complete DAC circuit (so a digital input might be an option one day?) using chips from respected maker AKM.

The DAC circuit board is physically separate from the board-carrying power supply and analogue output parts and uses surface-mounted components while the latter uses

through-hole types (valve voltages and surface-mount technology don't mix). Ergonomics of the player are OK, if not great: the button layout takes some getting used to (and labelling is small), while the transport is a little slow and clunky and rather noisy in use.

## Sound quality

Our blind-listening panel quite enjoyed this player, but were not greatly moved by its presentation. Their positive comments mostly referred to the specifics of the sound, rather than overall musical involvement. Praise was also voiced for the deep soundstage and the general sense of space around instruments and voices, something one can't necessarily take for granted even at this kind of price.

However, imaging is better with small groups than big ones and our Shostakovich excerpt (as large a bit of orchestra as one is likely to encounter) actually seemed a little reduced in scale compared to some of the group.

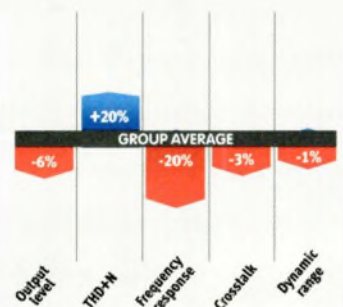
The most successful track was the Pallavicino madrigal – five solo voices recorded in a generous acoustic, which benefitted from the player's slightly smooth character and made the most of its imaging prowess. This had very good flow and intelligibility and generally sounded natural and lifelike. By contrast, the Ian Dury track lacked some precision

## TECH LABS

### LAB REPORT

A strong set of results, crosstalk and output measurements showing reasonable matching between channels. This tube-buffered CD player is well-engineered inside and out – which is more than can be said of the handset, a cheapie that would be more at home with a £20 supermarket DVD player. The drive is an IDE-interfaced CD-ROM mechanism, the TTL-level S/PDIF output of which feeds the DAC board. Although power consumption in standby is less than one watt, it rises to 28 watts (thanks in no small part to the power-supply for that tube, a 6922 double-triode) when playing. No digital errors were noted. THD+N measurements, although low, dwarf those of the rest of the group. Is that glassware responsible?

### RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY**  
★★★★★  
**LIKE:** Smooth character, plus good imaging in smaller-scale music

**VALUE FOR MONEY**  
★★★★★  
**DISLIKE:** Seems a little afraid of getting 'down and dirty'

**BUILD QUALITY**  
★★★★★  
**WE SAY:** Suits mellifluous styles well, but falls short of the mark with energetic material

**FEATURES**  
★★★★★

### OVERALL



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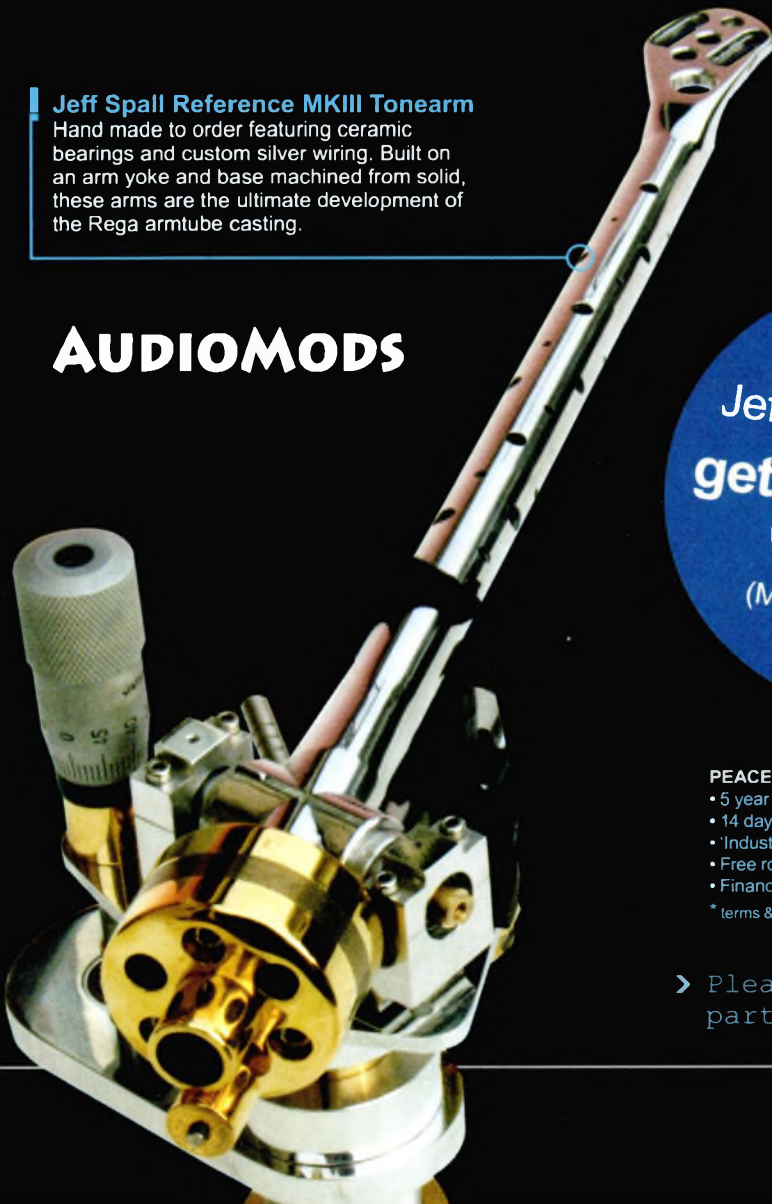
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## Cyrus CD 8SE £1,300

Cyrus has included its own servo evolution platform, bringing CD replay close to perfection

### DETAILS

**ORIGIN:**  
UK  
**WEIGHT:**  
3.5kg  
**DIMENSIONS:**  
(WxHxD)  
215x75x365mm  
**FEATURES:**  
• CD-Audio  
• Analogue outputs:  
dual unbalanced  
• Digital outputs:  
electrical and optical  
S/PDIF  
• PSX-R upgradable  
connector  
• MC-Bus in/out  
**DISTRIBUTOR:**  
Cyrus Audio  
**TELEPHONE:**  
01480 410900  
**WEBSITE:**  
cyrusaudio.com

**W**e've seen this model before (*HFC 310*), but it has been very slightly revised, so we thought a re-test might be a good idea.

Many of these revisions are cosmetic, including a new window for the display and a redesigned bezel, which fronts the slot-loading transport and puts the mind at rest about scratching discs (not that we hand any such concerns in the first place).

But there have also been some changes to the software which controls the disc-reading servo. This servo was the 'big news' about the 8SE (the letters standing for 'Servo Evolution') and was something of a novelty for a specialist manufacturer such as Cyrus, in that it optimised disc-reading from a high-quality audio standpoint, rather than the more common trade-off between read quality and performance with dodgy or damaged discs.

A few commentators were surprised that Cyrus has built this into a slot-loading transport, but we've no problems with it: indeed it seems greatly preferable to a fragile loading tray. It operates just as fast and makes no more noise, so we're very happy with it.

It feeds a pair of circuit boards, which use a good-quality DAC chip

and an unusually generous number of op-amps (seven of them, two different types), which perform the analogue filtering and buffering functions. Power supply arrangements include separate toroidal transformers for analogue and digital sections, plus an upgrade socket for connecting Cyrus's well-established PSX-R upgrade power supply.

### Sound quality

Our listeners didn't entirely agree with the bass presentation of this player, but liked most other aspects of its sound. Indeed, the bass was praised in terms of speed and attack, but it's a little light compared with some in the group and that was noted as a comparative point.

It's worth mentioning, though, that if the CD 8SE is heard in isolation, then the lightness is much less apparent and the rhythmic qualities are more obvious in terms of character.

Imaging divided opinion a little, but it's clearly generally good, sometimes excellent. It slightly falls short in terms of depth and precision in very complex recordings, a common enough failing to be sure and not terribly serious in extent. Width information is clearly presented and images are invariably stable under any conditions.

Our listening panel made no mention anywhere of tonal qualities in midrange and treble and sure enough, we couldn't persuade ourselves that there is any coloration in evidence. Detail is very good,

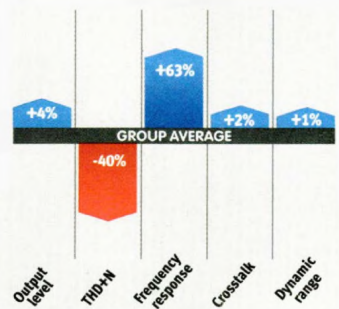
clear but unemphatic. Mention was also made of this player's good handling of musical flow and indeed, it does seem particularly good at that. Taken with good rhythmic properties, the 8SE seems better suited overall to the listener who simply wants communicative music, rather than to the audiophile whose keen to have all the specifics painstakingly attended to. That seems to us a perfectly acceptable philosophy!

### TECH LABS

#### LAB REPORT

Even with the internal two-transformer power supply (as opposed to the PSX upgrade), the CD8SE turned in an impressive set of results. We're intrigued to note the use of a Burr-Brown PCM1738E DAC (configured in differential-mono mode) for each channel, and a high-grade Burr-Brown OPA2227U op-amps. However, the test sample was less than happy with CD-Rs – these would take some time to recognise – although standard discs played fine. In standby, this player consumes six watts – in use, it draws 12 watts. No digital-error troubles were experienced.

#### RESULTS AT A GLANCE



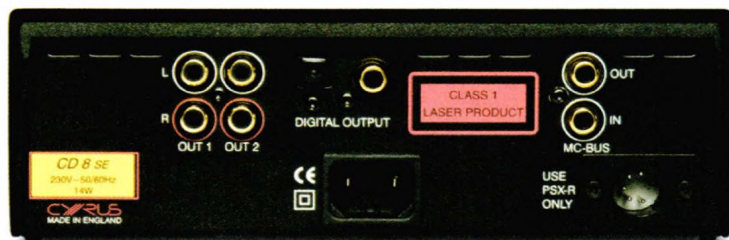
### Hi-Fi Choice

#### OUR VERDICT

**SOUND QUALITY**  
★★★★☆  
**VALUE FOR MONEY**  
★★★★☆  
**BUILD QUALITY**  
★★★★☆  
**FEATURES**  
★★★★☆

**LIKE:** Good musical flow and tight rhythm; easily upgradeable  
**DISLIKE:** A little bass-light and not always confident with imaging  
**WE SAY:** Unimpressive at first, perhaps, but satisfying in the long-term

#### OVERALL



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# Micromega CD-10 £820

It has a limited repertoire, but this player still divides opinion on its performance abilities

## DETAILS

**ORIGIN:**  
France  
**WEIGHT:**  
3.5kg  
**DIMENSIONS:**  
(WxHxD)  
430x70x270mm  
**FEATURES:**  
• Analogue output:  
single unbalanced  
• Digital output:  
electrical S/PDIF  
**DISTRIBUTOR:**  
Absolute Sounds  
**TELEPHONE:**  
020 8971 3909  
**WEBSITE:**  
micromega-hifi.com



micromega's name was made with mid-price CD players, and the company continues to enjoy a high

reputation for such devices. As the baby of the range, this model doesn't do anything particularly surprising, but it's clearly a carefully designed piece of kit. Micromega makes particular mention of the power supply arrangements, which start with an R-core transformer.

The R-core design originated in far-Eastern budget audio, but as Micromega points out, one of its characteristics is a rather narrow frequency band, which isn't ideal for all applications but, in low-power equipment like CD players, it effectively contributes a degree of mains filtering. Subsequent measures include shunt regulation with associated current sources, a slightly more complicated arrangement than the usual series regulators but one capable of very high performance.

The transport is a regular CD-Audio type, feeding a DAC chip from Analog Devices, which includes an oversampling digital filter, while the analogue filter and output stage use op-amps as usual, most components being surface-mount types which, as Micromega points out, allows signal paths to be kept short and simple

Operation of the player is fine, though it's a little confusing that the stop button is actually labelled 'Disc'

– it does function as eject as well, but some indication of this dual purpose would have been nice.

## Sound quality

Something of an opinion-splitter, this player seems to have been liked and disliked for much the same reasons. Its balance is a little on the light side, so if deep and powerful bass is very much your thing you may stay disappointed. On the other hand, it's also very fast, not just in the bass but across the band, with excellent articulation and very good dynamic agility. Very much the equal of the rapid rise and fall in level that characterises any decently recorded human voice. It made more sense than any of the others in the group of the five-part madrigals, clearly presenting voices of distinctive character.

It does seem to be just a touch uncommitted in heavier repertoire, probably because of the bass lightness, and even the most complimentary among our listeners felt it missed some of the energy in the Ian Dury track.

It was more successful in the Shostakovich, but still seemed a little dry and oddly slightly distant, too. There's some good detail to be had, however, and images are clear and stable laterally if, perhaps, a touch constrained in depth. But something about the highest treble doesn't

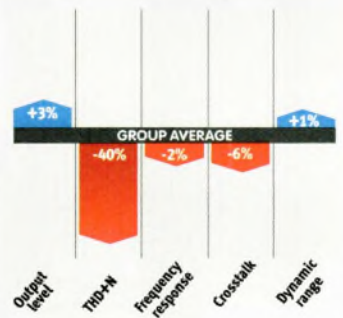
always quite click: it can be rather lacking in sweetness. Because of this, we felt the long-term listening experience is not as involving as one might wish for, despite the clearly admirable energy and the considerable degree of insight. Most successful with vocal and small-ensemble music, this is not quite a full all-rounder – but as the cheapest in the group it puts in a distinctive and not unattractive performance.

## TECH LABS

### LAB REPORT

Another solidly built player and the only one of the group to support CD-Text (rarely found on commercial discs, but a feature of PC CD-burning software like Nero). A strong set of results overall, although we noted a significant disparity between our left-channel-to-right (-89.2dB) and right-channel-to-left (-82.1dB) crosstalk measurements. Having said that, even the worst of these two figures is highly unlikely to impact on areas like stereo imaging. In standby, power consumption is nine watts – this increases only by two watts during playback. We encountered no digital-error pitfalls.

### RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY**  
★★★★☆  
**VALUE FOR MONEY**  
★★★★☆  
**BUILD QUALITY**  
★★★★☆  
**FEATURES**  
★★★★☆

**LIKE:** Good detail, excellent agility and very good with voices  
**DISLIKE:** Rather bass-light and seems to lack some treble sweetness  
**WE SAY:** A good value player, which will appeal to listeners enamoured of the human voice

### OVERALL



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## MARANTZ KI PEARL



When you first encounter the new KI Pearls, the first thing you notice are their unique 'Silk Pearl' finishing - but it's the magic that Ken Ishiwata has created inside the box that really gets the pulse racing. He has built-in everything possible to ensure that the music is reproduced exactly as the original artist and recording engineer intended.

Underneath the Pearl SACD player's 5mm aluminium cover is a XYRON Disc Tray with Precision Super Audio CD Drive along with the latest Toroidal transformer and Marantz's exclusive HDAM SA2 circuitry. Together they work sublimely with all the other carefully selected components to deliver precision high speed signal handling over the widest possible frequency range.

The Pearl integrated amplifier is just as stunning as its combining SACD player - its 90 watts per channel into 8 ohms or 140 watts into 4 ohms means it can keep even the most demanding of loudspeakers under total control. While its two-stage circuit construction guarantees a breathtaking signal to noise ratio and spectacular stereo imaging.



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# Moon CD.5 £999

Inspired by some cutting-edge technology, the Moon has a few surprises in store

## DETAILS

**ORIGIN:**  
Canada

**WEIGHT:**  
6.3kg

**DIMENSIONS:**  
(WxHxD)  
430x90x335mm

**FEATURES:**

- Analogue output: single unbalanced
- Digital output: electrical S/PDIF

**DISTRIBUTOR:**  
Renaissance Audio

**TELEPHONE:**  
0131 555 3922

**WEBSITE:**  
simaudio.com

**M**oon's range extends upwards from this simple and businesslike model to some quite fancy players, including the two-box Andromeda which is well over ten grand's-worth of cutting-edge technology.

While it's hard to see many physical constituent parts that have 'trickled down' from the Andromeda, the design aims seem consistent across the range. For instance, Moon is keen on integer oversampling, rather than the asynchronous 'upsampling' which has been in vogue for some years. The differences are subtle, but among other things Moon's technique does, at least, mean the output from the digital filter will be the same every time, which certainly isn't true in the asynchronous case. Still, both techniques have been used with success and we're not about to pre-judge the issue.

In either its black or silver finish, this is a very smart player and also a distinctly unpretentious one. The display is clear and simple and the controls operate swiftly and efficiently. The general theme of simplicity is continued inside the case, with no more circuitry than is needed to do the job. An audio transport is fitted, feeding a good-quality DAC chip and a straightforward output stage based around the venerable 5532 op-amp. Components are all

surface-mounted apart from a few plastic film capacitors in the analogue filter.

## Sound quality

Given our past experiences with Moon equipment, we weren't entirely surprised to find that this player didn't exactly blow our listeners away – that's just not what the brand is about. The qualities that commend it are very much of the 'less is more' variety, especially where sonic character is concerned. That's to say that the CD.5 does very little to the sound, leaving it between the recording and the listener without any attempt to mediate, polish, improve or comment. As a result, it succeeds in the long term, but won't necessarily impress on a short audition.

We wouldn't want to imply that our listeners found it uninviting, though: their comments clearly show that they appreciated it from several viewpoints. For a start, it is very detailed, in a way that you notice progressively as a track wears on. There's no instant 'wow' about it, but one does spot the odd little detail that had been missed before and, after a while, it becomes evident that there is an awful lot of stuff going on, without any song and dance.

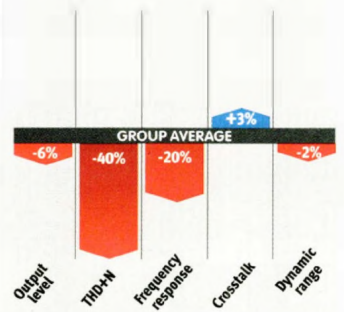
The tonal balance is very even as well, but again it's so deftly handled that one can easily fail to notice at first. However, when something

## TECH LABS

### LAB REPORT

The distinctive-looking CD.5 employs a different Burr-Brown DAC (the PCM1793) to that used in the Cyrus, plus proprietary 24-bit/352.8kHz upsampling. Distortion, frequency-response and channel-matching were all fine although the 94dB dynamic range lags ever so slightly behind the group. Simaudio's attentions to other aspects of the player – 8 stages of DC voltage regulation and careful PCB design – has helped the CD.5 to the lowest crosstalk figures of the group. In terms of energy consumption, the CD.5 ranks very well; three watts in standby and a mere eight watts during playback. No digital errors noticeable.

### RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY**  
★★★★★ **LIKE:** Excellent detail, presented with unflappable sang-froid

**VALUE FOR MONEY**  
★★★★★ **DISLIKE:** Very slight dryness and constriction of images at times

**BUILD QUALITY**  
★★★★★ **WE SAY:** A fine choice for those who like their music straight from the source

**FEATURES**  
★★★★★

### OVERALL





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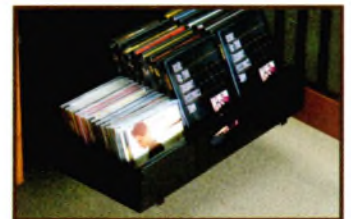
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# NAD M5 £1,600

Judged for its CD performance only, this multi-format player managed to hold its own

## DETAILS

**ORIGIN:**  
Canada/China

**WEIGHT:**  
8.6kg

**DIMENSIONS:**  
(WxHxD)  
435x100x300mm

**FEATURES:**

- Other formats: SACD, MP3, WMA
- Analogue outputs: unbalanced and balanced (XLR)
- Digital outputs: Electrical and optical S/PDIF, AES/EBU (XLR)
- Multichannel audio out, video out, RS232

**DISTRIBUTOR:**  
Armour Home Electronics

**TELEPHONE:**  
01279 501111

**WEBSITE:**  
nadelectronics.com

**H**ere's a multichannel SACD player, competing on the strength of its CD performance. Although it should be noted that the M5 offers the full gamut of SACD replay, stereo and 5.1, complete with bass management and a video output for use in setting up (though an external display's not actually essential).

That much will already make it appeal to lovers of true high-fidelity surround-sound, but there's plenty more behind the attractive all-metal fascia. One of the most interesting features is the two small metal enclosures towards the rear of the audio board, which house NAD's own 'Class A Low Noise Line/Drive Amplifier' modules. These replace the more common op-amps with configurations built up from discrete transistors, including some power devices which use the screening cans for heatsinking. These promise low distortion and high current and drive the main stereo outputs – both the phono sockets and the balanced outputs on XLR connectors.

Another unusual feature is the inclusion of both linear and switch-mode power supplies, for analogue and digital parts respectively, a combination we don't recall seeing before. High-quality DACs provide

conversion, with the multi-channel outputs being buffered by op-amps. The transport is separately screened internally, while the front panel display is informative but occasionally a touch confusing, we found.

## Sound quality

Presented as a CD player, the only way we could fairly compare it with the rest of the group – the M5 drew a rather lukewarm response from our blind-listening panel. They liked its smooth detail in the orchestral track particularly, but were underwhelmed by its slightly lacklustre rhythm and general lack of panache.

There are good points, though, including decent rendition of voices and a nice sense of flow to mostly melodic music. Actually, more dramatic and punchy stuff is quite well-served too, especially in the specifics, with good bass extension and control married to open, natural treble. But there's no denying that the overall result doesn't quite gel.

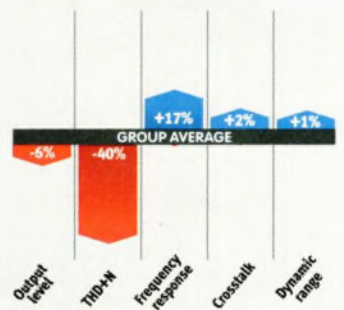
This makes it paradoxical that the SACD performance seems to be considerably more assured. Although it was not part of the formal listening, we did try a small section of an SACD with the listening panel present and there was unanimous agreement that the SACD layer sounded clearer,

## TECH LABS

### LAB REPORT

Arguably the most sophisticated player of the group, the Masters Series M5 can also play SACDs in multi-channel. However, NAD has paid more attention to the front channels – in addition to a better-quality DAC and relay muting, they also benefit from a pair of screened amplifier modules constructed from discrete surface-mounted components. The results we obtained couldn't be faulted – distortion, crosstalk and dynamic range are towards the top of the group – although one can criticise a player that consumes 18 watts in use (a separate linear power supply for the analogue audio) but 14 watts in standby! Once again, no digital errors were detected.

### RESULTS AT A GLANCE



## Hi-Fi Choice

### OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Strikingly fine sound from SACD
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Perversely disappointing with CD, lacking bite, impact and involvement
- BUILD QUALITY** ★★★★★ **WESAY:** An attractive SACD player with excellent stereo. If only CD replay was comparable
- FEATURES** ★★★★★

### OVERALL



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# Roksan Kandy K2 £899

With a highly competitive price tag, Roksan pushes all the right buttons on this fine player

### DETAILS

ORIGIN: UK

WEIGHT: 9kg

DIMENSIONS: (WxHxD) 432x102x380mm

#### FEATURES:

• Analogue output: single unbalanced

• Digital outputs: electrical and optical S/PDIF, AES/EBU (XLR)

DISTRIBUTOR: Henley Designs

TELEPHONE: 01235 511166

WEBSITE: rokstan.co.uk

**B**est known as a purveyor of all things analogue, Roksan has had a CD player or two in its catalogue for many years, the Kandy K2 being the cheaper of the two currently on offer. In essence it's pretty much what you'd expect from a player at this price – straightforward with no frills.

The look is distinctive, though, as is the display, which is indeed a bit of a throwback to the 1990s. We mean that in a good way, as it gives a little more information than most. To be fussy it's inconvenient to read off-axis, but it's no big deal. The real touch of class is supplied by the remote control, though, which has a touchscreen as well as regular buttons. (Like most these days it can control a whole gamut of its maker's kit.)

Roksan has built this player around a CD Audio transport, which is quick to load and respond, but makes rather more mechanical noise than most. It feeds a high-end DAC chip, which is followed by several op-amps in the analogue filtering and buffering stages, all powered by a decent-sized toroidal transformer.

Digital outputs include the professional-style AES/EBU balanced connection on an XLR socket as well as the usual S/PDIF (both flavours).

Our only complaint about ergonomics is the lack of a fast-forward facility on the front panel, a common enough failing.

### Sound quality

More than any others in the group, this player pushed all the right buttons for our listeners, quite an achievement given that they clearly had different priorities and expectations – but it seemed to rise to all the challenges across our range of listening material and tick practically all the boxes.

Most strongly praised was its rhythmic assurance and integrity. This has always been regarded as a Roksan speciality so it's nice to see traditions upheld and, of course, it's particularly welcome in any type of music where rhythm is an obvious feature (such as rock, or any kind of dance music). It's also beneficial in more melodic styles, such as the madrigal track in our listening programme. This, we felt, was more gripping and immediately communicative than with any of the other players.

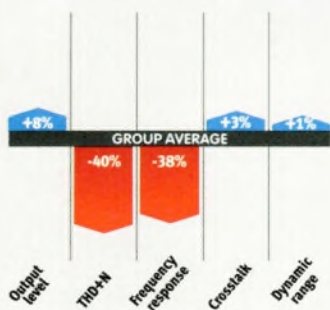
There was the odd word of criticism too, mostly about a trace of coloration, which most noticeably affects lower-sounding melody instruments and male voices, making them sound a touch thin. There's also

### TECH LABS

#### LAB REPORT

Looking inside this player reveals a lot of empty space for cooler running, but what is present demonstrates a good standard of engineering overall. Having said that, placing electrolytic capacitors (albeit 105° centigrade-rated ones) in immediate proximity to voltage regulators is not sensible practice. It's just as well that the Kandy K2 doesn't have a standby mode, therefore forcing you to turn off the player when it's not in use (only seven watts were drawn during playback – an excellent figure). Once again, our measurements reveal nothing to be ashamed of – a strong dynamic range and flat frequency response being among the characteristics. No digital errors.

#### RESULTS AT A GLANCE



### Hi-Fi Choice

#### OUR VERDICT

SOUND QUALITY ★★★★★

VALUE FOR MONEY ★★★★★

BUILD QUALITY ★★★★★

FEATURES ★★★★★

**LIKE:** Rhythmically top-notch and generally full of life and verve

**DISLIKE:** Just a shade light in the lower midrange and bass could be better controlled

**WE SAY:** An excellent all-rounder, this player makes the most of any music

#### OVERALL



# Conclusions

We've spun the discs, we've listened to the results; now's the time to choose

**FIVE OF THESE PLAYERS** compete very closely on grounds of features and are not that far apart in price either. The odd man out, the NAD M5, costs £400 more than the dearest of the rest but adds considerable functionality, most significantly SACD replay. And it's as a SACD player that we are happy to recommend it. It's cause for regret that it wasn't better liked when playing CDs, though, as this does limit its appeal as an all-round disc spinner.

We feel a little mean scoring the Micromega CD-10 as low as three stars overall, but its higher rating under 'value' reflects its status as the cheapest of the group. Conversely, the rather dearer Audio Analogue Rossini VT 2.0 scored higher overall as its sound is a little more assured, but we marked it lower for value.

What's really more important than the numerical scores, is the details of what they do well, as that's what will make them appeal: the Micromega does very well on the agility front, while the AA has a smooth character that's a perfect match to music for smaller forces.

The Cyrus CD 8SE is a smart bit of kit in any company, though we imagine plenty will sell as part of a complete Cyrus system. Don't overlook it on its own, though, as it is a musical and very attractive player. It may not do the ultra-detailed audiophile thing, nor the last half-semitone of bass extension, but then not everyone requires that. The Moon CD.5 is not wholly dissimilar, offering laid-back detail and a nicely even tonal balance. If you don't lust after extrovert sounds it may be just your thing. ●



**AMPLIFIER:**  
 Arcam A-38 **£1,450**  
 A detailed and very musical amplifier that's at home with all music styles.

**LOUDSPEAKERS:**  
 ATC SCM19 **£1,499**  
 Needs a powerful amp, but rewards with detailed and revealing sound.

**BOWERS AND WILKINS 8055**  
**£1,400**  
 Can sound underwhelming at first, but it's a real grower thanks to its musical character.

**THE WINNER IS...**

**THE PLAYER that got the most favourable comments from our listening panel, and also gave us great pleasure in our sighted listening sessions, is the Roksan Kandy K2. In many ways it seems the epitome of unfussy sonic assurance, but its real trump card is its great sense of musical excitement. Without ever going over the top, it brings an extra frisson to any music and encourages protracted listening sessions. At an attractive price, how could we not recommend it?**



## RESULTS AT A GLANCE

Make/model	Audio Analogue Rossini VT 2.0	Cyrus CD8SE	Micromega CD-10	Moon CD.5	NAD M5	Roksan Kandy K2
Price	£1,200	£1,300	£820	£999	£1,600	£899
Sound	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Value	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Build	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Features	★★★★	★★★★★	★★★★	★★★★	★★★★★	★★★★★
Overall	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Conclusion	Could use more drive and energy. Suits mellifluous styles, but falls short of the mark with complex material	Assured player: gives good musical involvement and reveals plenty about a performance	A smart player which will appeal to listeners enamoured of the human voice and of chamber music	A very fine choice for those who like their music straight from the source, uncoloured and unvarnished	One of the most attractive SACD players around, with excellent stereo results and multi-channel output	An excellent all-rounder that's a pleasure to listen to. This player really makes the most of any music style

### Key features

Dig output elec/opt	1/0	1/1	1/0	1/0	2/1	2/1
CD text	No	No	No	No	No	No
CDR-W	Yes	Yes	Yes	Yes	Yes	Yes
Balanced output	No	No	No	No	Yes	No
Other formats	-	-	-	-	SACD, MP3, WMA	-

### Lab conclusions E = Excellent | G = Good | A = average | P = poor

Output level	1.96Vrms <b>A</b>	2.17Vrms <b>G</b>	2.14Vrms <b>G</b>	1.99Vrms <b>A</b>	2.00Vrms <b>A</b>	2.24Vrms <b>G</b>
THD+N	0.01% <b>A</b>	0.002% <b>G</b>	0.002% <b>G</b>	0.002% <b>G</b>	0.002% <b>G</b>	0.002% <b>G</b>
Frequency response	0.13dB <b>A</b>	0.04dB <b>E</b>	0.11dB <b>A</b>	0.13dB <b>A</b>	0.08dB <b>G</b>	0.15dB <b>A</b>
Crosstalk	-90.2dB <b>A</b>	-93.4dB <b>G</b>	-82.1dB <b>A</b>	-93.6dB <b>G</b>	-92.9dB <b>G</b>	-93.6dB <b>G</b>
Dynamic range	95.0dB <b>A</b>	96.0dB <b>G</b>	96.0dB <b>G</b>	94.0dB <b>A</b>	96.0dB <b>G</b>	96.0dB <b>G</b>





Wood you?

aircoustic  
BY VIVANCO

# Wood is good

for some things at least

The greatest speakers and instruments in the world are crafted from wood; this is of course due to its renowned acoustic properties.

In striving to create perfection, we chose not to ignore this natural choice.

aircoustic Wood is good  
BY VIVANCO





# Real-world heroes

An integrated amplifier and SACD player for £1,800 is, as **Jimmy Hughes** discovers, a great combination of sound quality and value for money

**A**ffordable. One of those deliciously nebulous words that can easily mean vastly different things to different people. For the serious high-end audiophile, these Denon components definitely fall into the 'affordable' category. Indeed, at £900 each, they're something of a steal – at least in comparison to expensive audiophile esoterica.

Those with an ear for quality and an eye for value, will immediately appreciate that Denon is making a serious attempt to offer outstanding performance at a reasonable price. Both 1510 components borrow technology from Denon's 2010 flagship models – but do so with a saving of about £1,500!

That said, for non-audiophiles, £900 for a CD player or amplifier is

## ▶ DETAILS

**PRODUCT:** Denon DCD-1510AE and PMA-1510AE

**ORIGIN:** Japan

**TYPE:** SACD player and integrated amplifier

**WEIGHT:** 8kg (DCD-1510AE) 15kg (PMA-1510AE)

**DIMENSIONS:** DCD-1510AE (WxHxD) 434x134x331mm PMA-1510AE (WxHxD) 434x134x410mm

### FEATURES:

- System remote control
- Gold-plated speaker terminals
- MP3/WMA support
- USB port and iPod playback

**DISTRIBUTOR:** Denon

**TELEPHONE:** 02890 279830

**WEBSITE:** [denon.co.uk](http://denon.co.uk)

still a huge amount of money. But quality never comes cheap. Of course, you could pay less and get something that looks similar. But, the link between performance and price is hard to break. A hi-fi system can easily look the part without actually sounding it.

## Specs appeal

The PMA-1510AE is a fully featured integrated amplifier offering 70 watts into eight ohms and 140 watts into four ohms. It offers five line-level inputs, plus an MC/MM phono stage for vinyl users. Extra features include the provision of bass and treble tone controls, stereo balance control and a socket for headphones.

The tone controls and balance control can be bypassed using the Source Direct button. The bass and treble controls offer around 8dB lift or cut – sufficient to correct tonal imbalances in recordings – without being excessive. Denon claims great



**VIRTUALLY ALL TRUE audiophile amplifiers are notable for their spartan simplicity – the absence of ‘superfluous’ extras like headphone sockets, left/right stereo balance, and tone controls. While these things tend to be missing from many audiophile amplifiers, the PMA 1510AE has them. The bass/treble tone controls offer 8dB lift and cut – not massive, but still helpful for correcting recordings that need a little assistance. There’s a bypass button for those wanting the cleanest shortest signal path. In this respect, Denon is catering for hi-fi purists along with more general users who want good sound. The DCD 1510AE also has a Direct button, that switches off the illuminated display and cuts the digital output.**

attention has been given to circuit layout to ensure signal paths are kept as short as possible.

Two sets of speaker outputs are provided – to enable bi-wiring and the speaker outputs are switched via the headphone socket – as soon as you plug the headphone jack in, the speakers fall silent. This is helpful, but it would’ve been nice to have had a set of direct speaker terminals that avoided this switch.

Usefully, the remote control operates the amplifier and the CD/SACD player – plus the optional tuner – avoiding the inconvenience of separate handsets for each item. All inputs/outputs are unbalanced – balanced operation is not offered. A separate selector for tape output enables you to record from one source while listening to another.

**“It’s like fizzy orange compared to freshly squeezed orange; SACD’s flavours are more delicate.”**

For those wanting to use the PMA-1510AE as a power amp, there’s a Power Amp Direct button that separates preamp from power amp. A set of preamp outputs allow an external power amp to be used and also enable you to connect a couple of sub-woofers. Transformer hum (physical buzz) is very low with both items, incidentally.

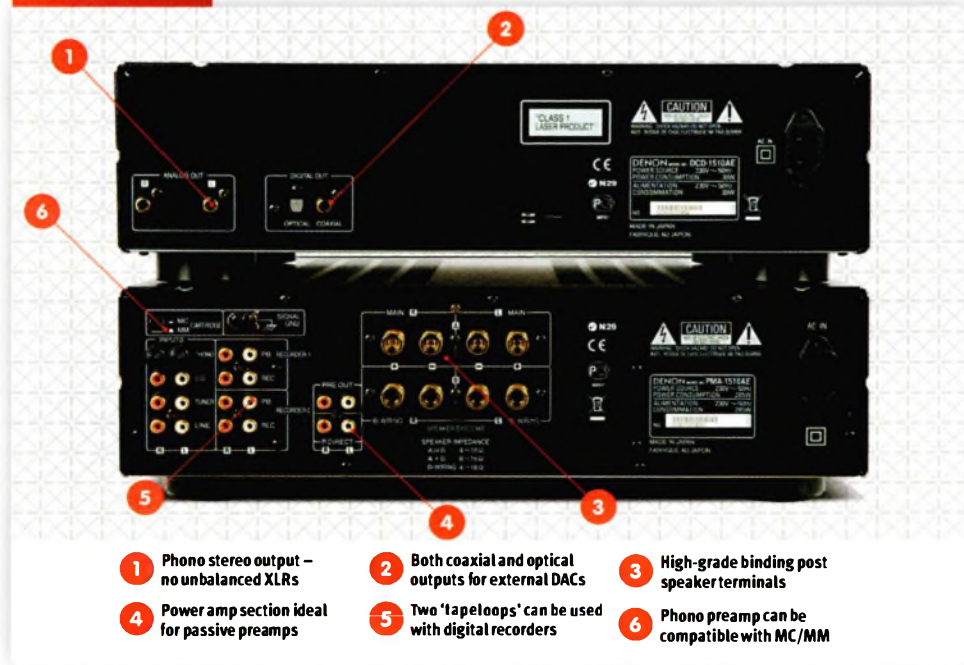
The DCD-1510AE is a two channel SACD/CD player. It will play SACDs, but only in stereo – there is no 5.1 surround output. Like the matching Denon amplifier, the DCD-1510AE also offers a headphone socket with its own volume control. A USB port enables direct playback from enabled portable devices.

The player also supports MP3/WMA for CD-R/RW and USB (but not DVD-A). Switching between Red Book CD and SACD occurs automatically, but with SACD the user has the option to select twin-channel or surround SACD (reproduced in two-channel stereo), or the CD layer of hybrid discs.

The Advanced AL-32 DAC is taken straight from the DCD-2010AE. It’s a 32-bit converter that up-samples to 192kHz and Denon claim their master clock offers very low levels of jitter.

Like all SACD players, the DCD-1510AE is very slow; operationally. Before playing a disc,

**CONNECTIONS**



- 1 Phono stereo output – no unbalanced XLRs
- 2 Both coaxial and optical outputs for external DACs
- 3 High-grade binding post speaker terminals
- 4 Power amp section ideal for passive preamps
- 5 Two ‘tape loops’ can be used with digital recorders
- 6 Phono preamp can be compatible with MC/MM

## Q&A...

WE SPOKE WITH ROGER BATCHELOR, UK PRODUCT AND MARKETING CONSULTANT



**HFC:** In terms of sound quality, how do these 1510 components compare to the flagship 2010 series?

**RB:** The aim of the 1510 series is to emulate as closely as possible the sound of Denon's flagship models like the 2010 series at a more affordable price. The 2010 series remains the benchmark though!

**What are the key benefits of UHC Mos-Fet output devices?**

Low noise, clean sound and power – the unusually high current of these field-effect transistors is essential for setting up the output stages in an extremely low-noise but powerful single Push-Pull arrangement.

**Does your AL32 DAC get close to maximising the full potential of CD?**

This latest Advanced AL32 Processing uses a unique data-interpolation algorithm to achieve high-bit, high-sampling output performance. The volume of information has been dramatically improved without any loss in the original data.

**Any other key aspects of design you'd like to elaborate on?**

The amplifier has improved internal vibration and temperature control with a hybrid construction and newly designed radiator fins for the heat sinks. The CD Player has a new anti-vibration mechanism with a dual layer steel base and is mounted as low as possible in the chassis to counter vibration even further.

**Do Denon see a long term future for SACD?**

Whilst the mainstream market seems happy with CD, we see SACD continuing as a specialist format, especially for classical music. The format is popular with Japanese enthusiasts and orchestras with their own record labels – like the London Symphony and Chicago Symphony – who are releasing most of their material on SACD. So far there are over 6,000 SACD titles to choose from, with just over 50 per cent of them being classical titles.

it first has to sit and figure-out what the format is. Track access and fast search are frustratingly sluggish – even Philips CD players from the early 1980s were faster! Also, you can't access a specific point with the player in play/pause.

To be fair, these issues are not unique to the DCD-1510AE – SACD players as a breed tend to be somewhat sedate and clunky. Perhaps, more importantly, the transport used is very quiet. During use you can't hear any noise from the disc spinning. A single set of fixed analogue outputs are offered, plus a digital output – optical and co-axial.

### Hey, good looking

Both items are beautifully finished and look and feel solidly made, with a choice of silver or black. The top covers and chassis are made from steel, with brushed alloy front panels. Of the two, the amplifier feels the most substantial, weighing in at a surprisingly heavy 15kg. This is partly down to the use of two fairly large power transformers.

Inevitably, much of this beauty is skin-deep; the finish flatters to deceive. The alloy front panels give the impression of being around 10mm thick, whereas in reality their thickness is about 2.5mm. But, once on the shelf, both items look pretty good. You can't reasonably expect true 'battleship' build quality at these prices.

The amplifier is slightly bigger than the disc player and internally it's very well filled – there's not much spare room spare inside. Construction quality is good and both products look like they're built to last. The various controls feel smooth, even, and operate crisply.

The volume control has a smooth well-damped feel, while the various selector knobs function firmly, with nice solid click stops. The disc player

is less tactile. Sometimes you press a button, and nothing seems to happen – often because you gave a command too soon, while the player was still in the process of sorting itself out.

### The music comes first

The DCD-1510AE produces a very smooth refined sound – detailed and crisp, yet well-balanced and clean. Good CD players around this sort of price point can sound a bit samey. Via Red book CD, the DCD-1510AE performs extremely well, without doing anything totally extraordinary or life-changing. But, SACD is a different matter. Here one immediately notices an extra degree of openness and clarity. The sound seems smoother and more refined, with less of that bright/edgy forwardness you get with CD. SACD sounds more relaxed and a shade cleaner. Tonally, there is less 'hardness' on massed violins – a smoother less grainy end result.

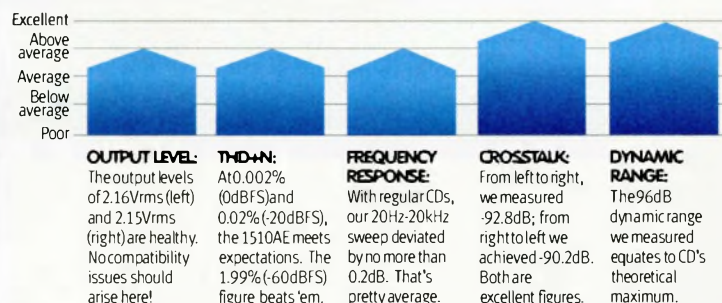
While SACD does almost always sound superior to CD, the degree of improvement isn't uniform. CD often stands its ground surprisingly well, despite SACD's technical superiority. In part, that's a compliment to the DCD-1510AE's qualities as a CD player and the advances and improvements made to the mastering of CDs.

Total heresy, but some listeners may actually prefer CD to SACD. CD has more bite and immediacy. If you like a sound that's bright, upfront, and (technical term coming up) ballsy, CD's aberrations are actually beneficial. It's a bit like fizzy orange squash compared to freshly squeezed orange; SACD's flavours are subtler and more delicate.

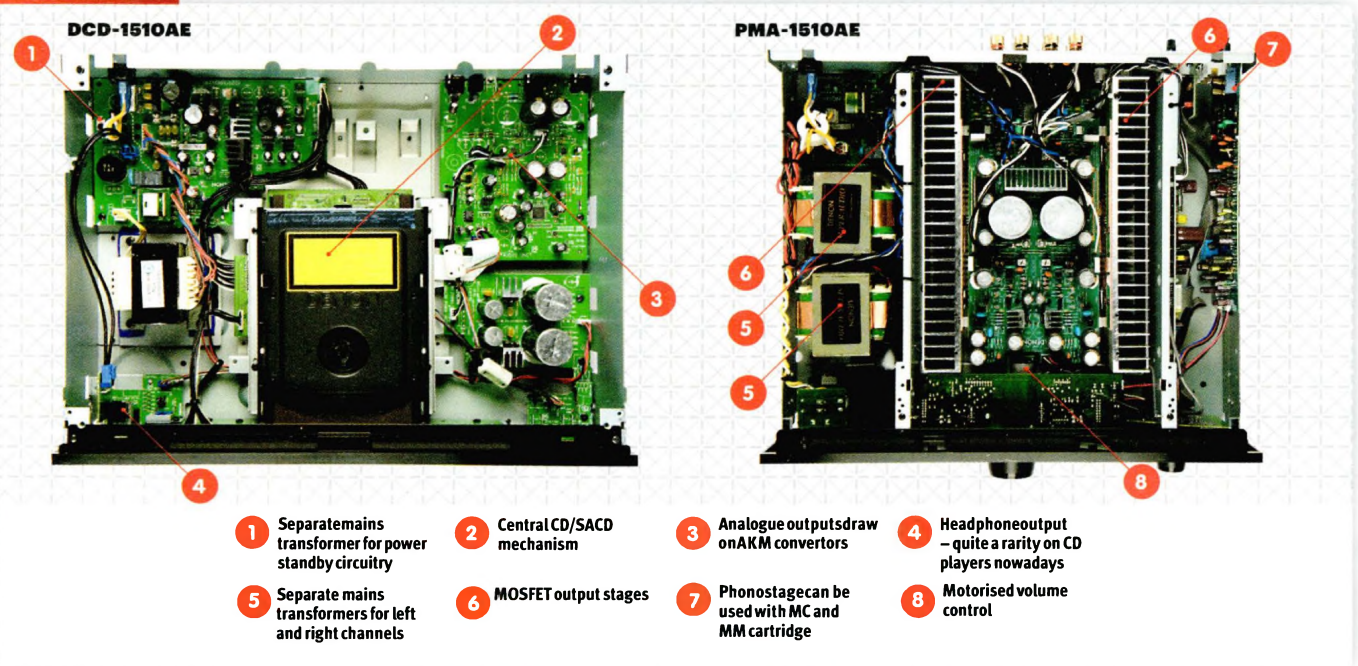
The PMA-1510AE produces a solid, focused no-nonsense sound that immediately impresses with its cleanness and immediacy. It conveys an impression of power – even when

## TECH LABS

### RESULTS AT A GLANCE: DCD-1510AE



**HIDDEN TECH**



played quietly. Its taut, firm, powerful bass is surprisingly deep and full. The presentation is refined but not delicate; the music has real presence and substance.

Tonally, the amplifier gives a clear, open, yet slightly 'dark' sort of tonality. It's not an airy or spacious kind of sound, but solid, firm, and focused. Clarity is very good, and you can hear lots of fine detail. At the same time, you're not encouraged to listen to (and admire) the sound as something in itself – the music comes first.

The bass-end is very good and rivals much more expensive amplifiers. The impression of weight is conveyed by a combination of genuine depth and a solid, full tonality. Going over to the PMA-1510AE from a real high-end amplifier costing £10k plus, the Denon puts up a disgustingly good fight.

Although not strictly part of this review, the built-in MC phono stage turned out to be pretty good too. LPs sound crisp and immediate, with plenty of presence and attack. Okay – the extra subtlety and finesse of Linn's Uphorik (HFC 334) was missing, but – hey, this Denon 'phono stage' is half the price, and you get a free amplifier thrown in.

Both Denon components seemed a good foil for one-another. The smooth refinement of the SACD/CD player goes well with the amplifier's immediacy and crisp focused clarity. The sound produced is natural and well-balanced – crisp, forward, and engaging, without being brash or aggressive.

**Perfect partners**

As was said at the start; you can pay a lot more – you could pay a bit less. What matters is that these Denon



**FOR THE 1510 series, Denon has drawn heavily on the advanced technology found in its expensive Flagship 2010 components. This includes the AL32 32 bit upsampling DAC, and UHC Mos-FET output devices. As a result, the 1510 series is said to offer performance that stands comparison with the more expensive 2010 line, but at a much more advantageous price. In terms of source quality, SACD is the icing on the cake, capable (given a good well-recorded disc) of producing a tangible improvement over normal CDs – and standard CD players. As a result, you get a smoother, more open, solidly focused sound, with cleaner climaxes and greater overall purity. Those who appreciate a natural unexaggerated tonal balance and wide dynamic range will find the best SACDs definitely sound superior**

components offer high performance and outstanding value. If you want something significantly better, you'll need to spend quite a bit more. And even then, the sound might not be hugely superior. ●

**Hi-Fi Choice**

**DCD-1510AE SACD**

**SOUND QUALITY**  
★★★★★ **LIKE:** Sounds very impressive on the right disc – clean and dynamic

**VALUE FOR MONEY**  
★★★★★ **DISLIKE:** Disc handling slow and clunky (applies to all SACD players)

**BUILD QUALITY**  
★★★★★ **WE SAY:** If the SACD format appeals, then this player is capable of making some impressive sounds

**SPECIFICATIONS**  
★★★★★

**OVERALL**  
★★★★★

**Hi-Fi Choice**

**PMA-1510AE AMP**

**SOUND QUALITY**  
★★★★★ **LIKE:** Great sound, good build, lots of features and excellent value

**VALUE FOR MONEY**  
★★★★★ **DISLIKE:** No direct speaker output

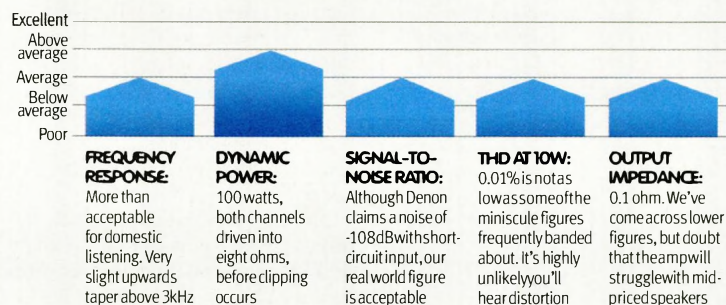
**BUILD QUALITY**  
★★★★★ **WE SAY:** Those wanting a good reasonably powerful amp that offers a taste of high end at an affordable price

**SPECIFICATIONS**  
★★★★★

**OVERALL**  
★★★★★

**TECH LABS**

**RESULTS AT A GLANCE: PMA-1510AE**





# Altered images

**Jason Kennedy** investigates an intriguing turntable from Dr Feickert which takes a new approach to the challenges of perfect vinyl replay

**T**his stylish German turntable is the first we have encountered from the elusive Dr Feickert, seen and heard at Munich's High End show in May (*HFC 334*).

The Woodpecker is the least expensive turntable that he makes, yet it embodies the principles that you find in the top Twin and Triple designs whilst managing to look

entirely contemporary.

It's distinguished by a large cut-out which means you can slide the armboard along and accommodate tonearms between nine and twelve inches in length. This makes it one of the most flexible, yet elegant turntables we've seen in a long time.

Dr Feickert's bag is analogue, the name says it and so does the fact that it has produced something

## DETAILS

**PRODUCT:**  
Dr Feickert Analogue  
Woodpecker

**ORIGIN:** Germany

**TYPE:** Turntable

**WEIGHT:**  
20kg

**DIMENSIONS:**  
(WxHxD)  
150x480x380mm

### FEATURES:

- DC three phase motor
- Mass loaded Delrin platter
- CLD plinth
- Inverted bearing
- Electronic speed switching

**DISTRIBUTOR:**  
Angelsound Audio

**TELEPHONE:**  
01923 352 479

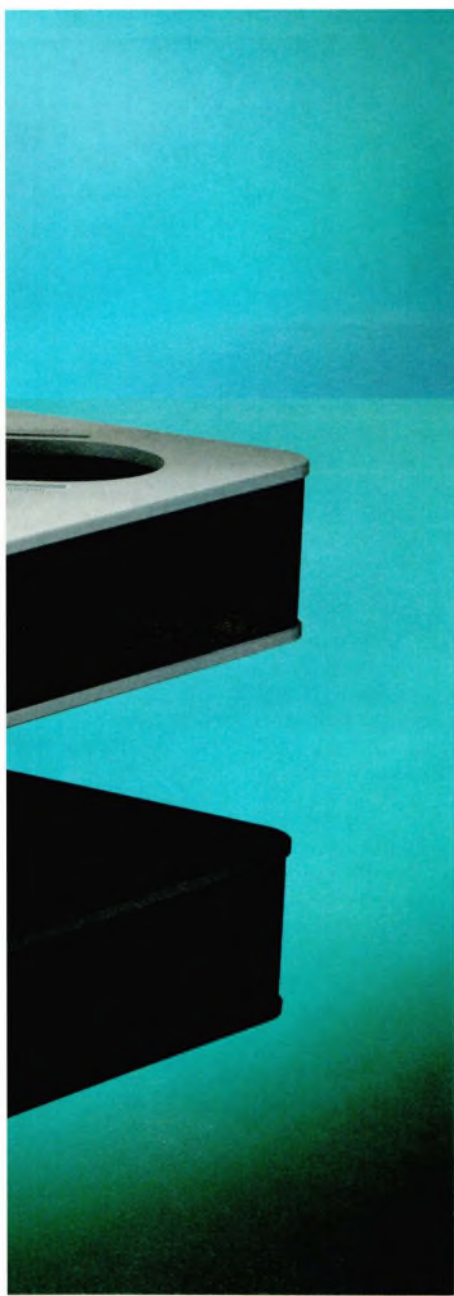
**WEBSITE:**  
[angelsoundaudio.co.uk](http://angelsoundaudio.co.uk)

called Adjust+, the first and only computer software that we've seen for setting up cartridge azimuth. Dr Feickert also makes a very precise alignment protractor called Pro Tractor NG and three other turntable models, including one that can accommodate three tonearms. Excessive, perhaps, but it looks damn cool.

## Entry point

The Woodpecker is the entry level model and incorporates motor, bearing and armboard in a solid and fairly substantial slab of plinth, with aluminium facing top and bottom. Interior construction uses constrained layer damping, a technique of combining different materials to combat resonance.

It may not look it, but the turntable's plinth is made from laminates that consist of aluminium and tempered MDF; that is MDF that has been heat-treated prior to lamination. The whole sandwich is



then machined and given a Delrin (acetal plastic) surround.

Atop the laminations mentioned there is an anti-resonance 'circuit' made of an unspecified, but apparently significant type of steel. This also supports the platter's bearing. The latter is a stainless steel inverted type that you lubricate with a grey grease that Feickert refers to as 'fat' and is considerably thicker than the oil used in most turntables. The platter and armbase are also made of Delrin. This is a softer material than acrylic and is, therefore, closer in character to vinyl than acrylic (we've seen it before on the Townshend Rock 7) and it seems to work extremely well as a platter material. The example on the Woodpecker is loaded with cylindrical brass weights to increase mass (to 6.2kg) and thus inertia.

This Inertia platter is usually a £595 optional extra, but UK distributor Angelsound is offering it for the standard price until the end of July 2010 (the turntable normally has a solid acetal platter). In both cases, a screw-on acetal clamp is supplied, which dishes rather than flattens the vinyl in order to improve resonance absorption.

The motor is a three-phase DC design that acts like a phase locked-loop (PLL) and has all its supply electronics internally which keeps things tidy from a manufacturing perspective.



**THE PRINCIPLE** behind the remarkable tolerance to resonance of this turntable is constrained layer damping or CLD. This is a technique for killing vibration and can be used to kill resonance in almost any material.

In this instance it consists of constraining layers of baked MDF, which is pretty stiff, and aluminium, which is less stiff and has a different resonant character. By combining these materials in a multi-layer sandwich Dr Feickert has been able to build a plinth that is remarkably insensitive to external vibration.

The fact that you can rap the top with your knuckles whilst the record is playing and not cause the stylus to jump is very unusual. The type of resonance that gets through to a turntable in normal use is of a far higher frequency, so the knuckle test is not entirely relevant, but it's impressive nonetheless.

Placing the power inlet underneath the plinth keeps things aesthetically tidy, too, while power is derived from a wall-wart supply that has a power indicator. There are apparently two power supply upgrade options in the pipeline, due to be finalised this year.

Turning the motor on and off is done with the buttons marked 33 and 45, each acting as a start/stop switch. The hole above each button allows fine speed adjustment, but ours ran true out of the box. A third button marked S is for an as yet undisclosed function, although there

**"...live recordings have a presence that's extraordinary, while studio productions ooze with luxury."**

is an S version of the Woodpecker which offers 78rpm and, in that instance, the central button controls speed, but in the standard issue it's purpose has yet to be declared.

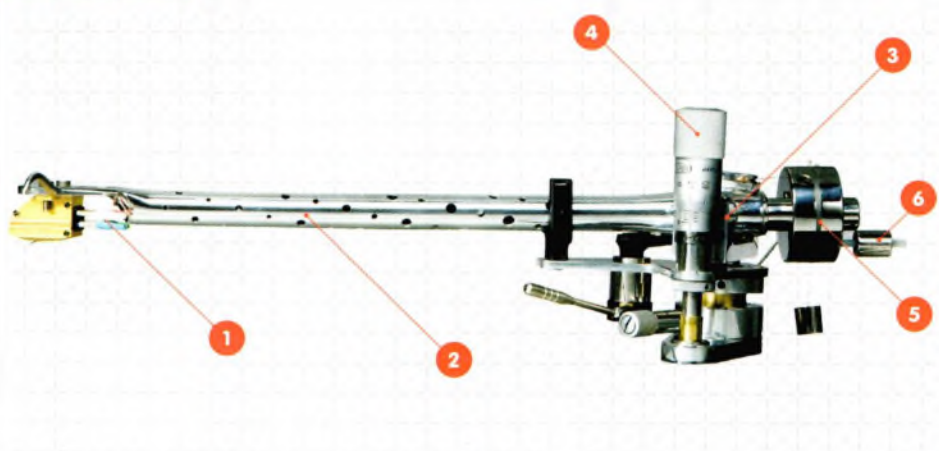
### Two analogue grooves

The Woodpecker's build quality is extremely high; the quality of fit and finish lives up to the standards of German engineering and is entirely commensurate with the asking price. The screen-printed figures on the armboard cut-out are very well executed, but you really need the Feickert Pro Tractor to position an arm precisely and we found the armboard readings to be slightly at odds with the protractor.

The Delrin armboard itself has a protrusion underneath that slots into the cut-out and stops any unwanted twisting when setting up. You bolt the board down to captive threaded inserts which slide in the two grooves. It's a well thought-out design and one which makes set up remarkably easy, given the range of arm sizes it will accommodate.

There is plenty of competition at this price of course, albeit none which offers the scope to fit with different length arms without a deck upgrade. The key players are: the SME Model 10; Kuzma Stabi-S (which has a 12-inch option); and the Well Tempered Amadeus, with its golf-ball-in-silicone arm bearing. All offer a similar level of build quality to the Woodpecker, although the SME is the only one that we feel is clearly better, while the last option has its own tonearm. ▶

### CONNECTIONS



1 Pure Litz wiring

2 Highly modified Rega armtube casting

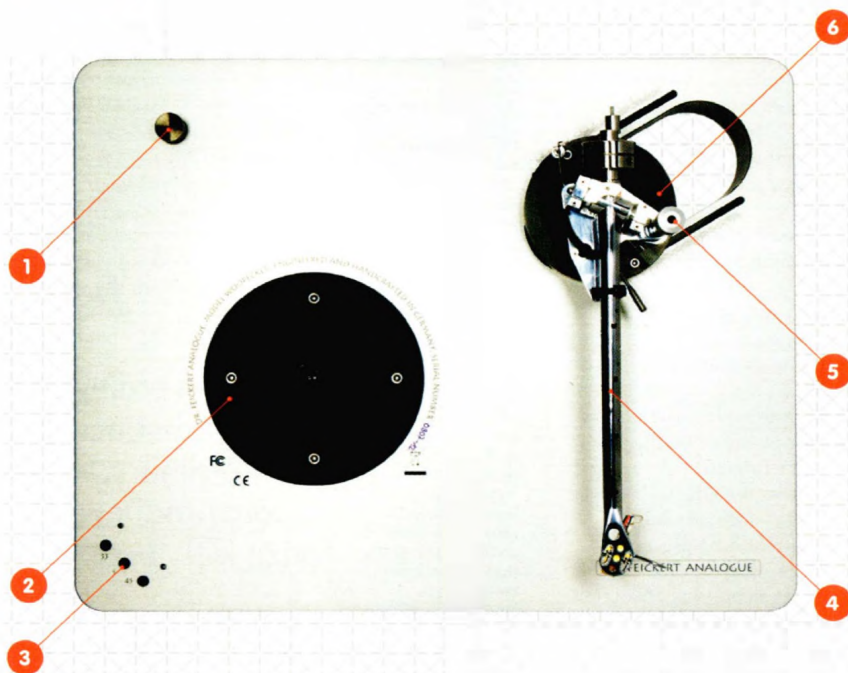
3 High-precision ceramic bearings in adjustable mountings

4 Built-in VTA adjustment with optional micrometer calibration

5 Constrained-layer damped counterweight controls vibration

6 Secondary counterweight to fine-tune VTF

**HIDDEN TECH**



- 1** Motor spindle driven by three-phase motor concealed within plinth
- 2** Main bearing shaft on custom steel plate for minimising vibration
- 3** On/off switches for 33.3 and 45rpm with holes above for speed adjustment
- 4** Nine-inch Audiomods Series III micrometer arm can be included for a total of £3,195
- 5** Slot for arm board allows pick-up arms of between 9 and 12 inches
- 6** Delrin (acetal plastic) arm base

Angelsound's answer has been to offer the Woodpecker with the standard (non-micrometer) version of the Audiomods Series III arm for £3,195 which is an exceptional deal.

**More is more**

As we had the Audiomods arm to hand (see p71), this was a logical starting point for the review, the two aren't designed for one another, but they seem to work well.

Using the Feickert protractor, you can precisely set arm position, overhang and alignment. The

reward is a calm, precise presentation that has remarkable pace and bandwidth. It's the bass that hits home to begin with: it's in the same class as a Rock 7 despite the absence of a damping trough – which is a neat trick. Bass lines are delivered in remarkably coherent fashion and can always be picked out even in the densest mixes. In fact, everything can be picked out; there is a clarity to the sound, a lack of exaggeration that reveals oodles of detail, but doesn't get in the way of the music. All too often turntables



**DR FEICKERT'S** UK distributor Angelsound, recommends pairing the Woodpecker with either the Feickert DFA-105 (£650), which is a 10.5-inch tonearm, or the nine-inch Audio Mods Series III micrometer arm at £695. Its choice of cartridge is either the ZYXR-50 (£500) or the Dynavector DV-20 X (£450).

For amplification, Angelsound likes the Almarro A205a MkII (£1,250), a five-watt valve line integrated that also needs a phono stage. Angelsound reckons Sutherland's PH3d (£800) is a great example for the price.

For speakers, there is the high-sensitivity Cain and Cain Super Abby (£2,550), which you can run effectively with only five watts.

that are revealing and clean can also sound clinical and heartless, but this one allows the quality of the format to shine through.

Switching over to an SME V tonearm leads to a more muscular sound, one that is bolder and a little more vibrant, not necessarily better in all respects but it does make for some awesome syncopation with a nice slab of ZZ Top. Playing more vinyl shows more facets of the turntable's potential, each disc giving up the characteristics of its recording. As a result the better stuff really shines, ECM live recordings, for instance, have a depth and presence that's extraordinary, whereas slick studio productions like Rickie Lee Jones' *Flying Cowboys* positively ooze luxury.

The ability to expose differences in recording character reveals just how analytical and uncoloured this turntable is. There's very little to get in the way of the signal because it keeps its own resonances so tightly controlled. And yet this doesn't make it sound dead; rather the music takes centre stage so you can enjoy its subtlety, power and charm.

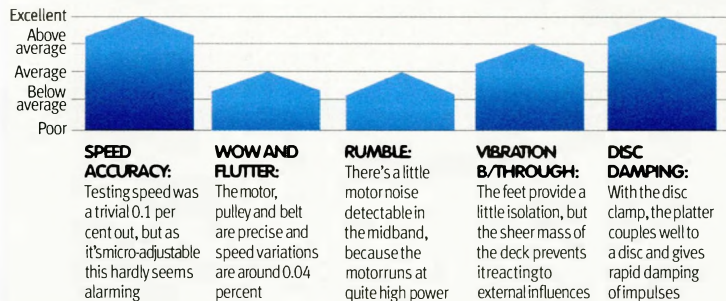
**Inertia platter**

As you can tell, we enjoyed this deck immensely. It's less characterful than most and has superb timing, imaging and tonal resolution. More importantly it does serious bass, something that you'd think would be a given at this price, but tastes clearly differ as many alternatives sound lightweight by comparison. Obviously the Inertia platter helps here and it will increase the price from August 2010 onward, but even then the value will be strong.

These impressive sonic qualities combine with very high build and finish to make a highly desirable turntable that's ready for most tonearms you'd care to throw at it. ●

**TECH LABS**

**RESULTS AT A GLANCE**



**Hi-Fi Choice**


**OUR VERDICT**

- SOUND QUALITY** ★★★★★ **LIKE:** Superb bass; excellent build quality, range of arm choice
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Need to buy Feickert protractor for best arm set up
- BUILD QUALITY** ★★★★★ **WE SAY:** This is a powerful and resolute turntable.
- SPECIFICATIONS** ★★★★★ Coupled with a good arm and cartridge it's addictive

**OVERALL**





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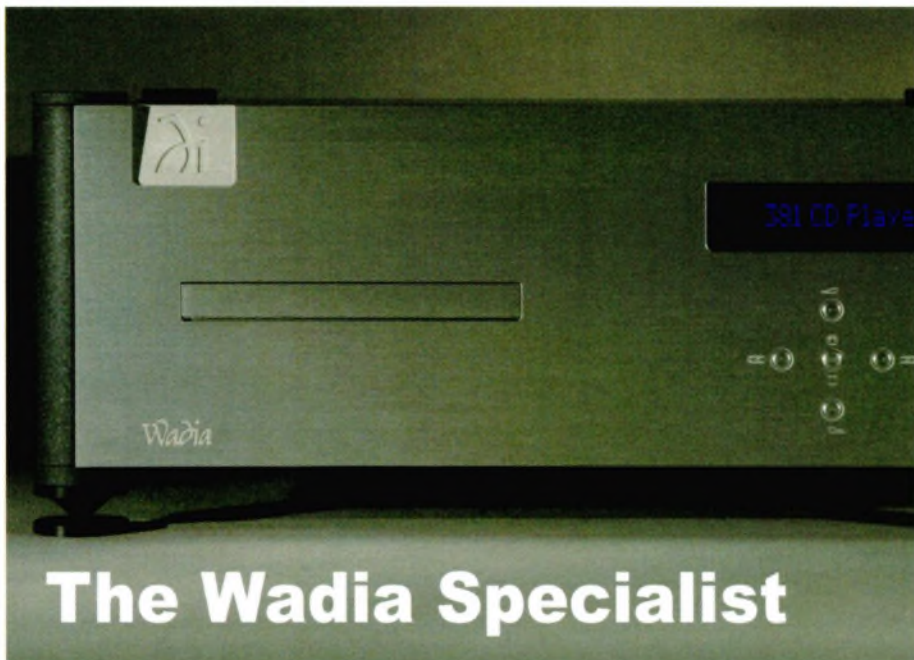


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# Current affairs

Mains filtration removes high-frequency noise, but as **Richard Black** discovers Isol-8's Powerline Axis goes the other way, removing direct current

**M**ains treatment specialist Isol-8 has been around for quite a while, but has not been over-keen to offer product for review. Evidently, the reason for this decision was due to the fact that advanced sales had outstripped supply, apparently! Now that this problem has been addressed, we've finally been able to get our hands on a sample and a fascinating product it is, too.

In its basic form, the PowerLine is 'just' a mains distribution board – though it's actually about as deluxe as such a thing can get, with silver-plated wiring, high-quality sockets, a solid metal chassis and so on. But the Axis variant adds something very unusual in mains filtering called DC blocking.

## Zero hero

When mains 'noise' is discussed, the term is almost invariably used to mean high frequencies that shouldn't be there. The Axis, however, deals with the other extreme of the spectrum: DC, or 'zero-Hz'.

Theoretically, the signal on the mains is pure AC at 50Hz, but for various reasons to do with non-linearity of equipment connected to the mains, there is often a noticeable amount of DC present. It's nothing like the 240V of 50Hz, more likely to be between a tenth of a volt and (at

worst) one volt, but it's enough to give trouble.

## Magnetic attraction

The problem is that most audio equipment is powered through a transformer, a device that turns electricity into magnetism and back again and in the process alters voltage and current levels. This works very well with AC, but because it relies intrinsically on a changing magnetic field, it doesn't work at all with DC. What's worse is that mains transformers have very low tolerance of DC, because they basically consist of a low-resistance coil of wire between live and neutral pins of the plug. A small voltage will cause quite a lot of current to flow.

In turn, that upsets the magnetic properties of the transformer, making it less good at performing its official function. Often the directly perceptible result of this, is that the transformer will hum mechanically. Many transformers do this anyway, but a small amount of DC can make it a lot more noticeable.

Simultaneously, the electrical performance of the transformer suffers due to the 'magnetic saturation' and the end result of this is, in many ways, similar to the effects of high-frequency interference.

In other words, DC is potentially just as important a problem as more

## ▶ DETAILS

**PRODUCT:** Isol-8 PowerLine Axis  
**ORIGIN:** UK  
**TYPE:** Mains filter  
**WEIGHT:** 1.9kg  
**DIMENSIONS:** (WxHxD) 400x83x88mm  
**FEATURES:**  
• Five outlets, each with a hinged cover  
• Transient and surge protection  
• Peak capacity: 500A for 10mSec  
• Wiring in silver-plated copper, insulated with PTFE  
• Solid aluminium top plate  
**DISTRIBUTOR:** Isol-8 Technologies  
**TELEPHONE:** 020 8856 8856  
**WEBSITE:** isol-8.co.uk

familiar forms of noise. Isol-8's solution to it is a surprisingly simple circuit which, however, does exactly what's claimed, re-establishing correct AC-only conditions so that transformers can work at their optimum.

## Back to basics

Keen to try it out under the broadest range of conditions, we plugged just about every bit of equipment we could lay our hands on into the Axis, singly and in multiples, and were distinctly impressed with the results.

Ironically, some of the transformers that show the most marked reduction in mechanical buzzing are in the cheapest kit. You'd hardly justify £500 worth of mains filter with a £200 component, though! Upmarket components benefit in the same way, to a slightly lesser extent, and also show some intriguing improvements in basic sound quality.

## Less effort

With the Axis in use, there's no huge change in tonality, but detail becomes subtly clearer and better defined and one feels that less effort is required to hear 'into' a recording. If this is typical – and the range of equipment we tried suggests it is – DC filtering could be the next big thing in audio tweakerly! ●

## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY** ★★★★★ **LIKE:** Addresses a problem most mains filters don't recognise

**VALUE FOR MONEY** ★★★★★ **DISLIKE:** Hum reduction with budget kit, though not a fault of the Axis

**BUILD QUALITY** ★★★★★ **WE SAY:** Results vary a little, but good-quality audio electronics can benefit from its use

**FEATURES** ★★★★★

### OVERALL





# A mini adventure

**Paul Messenger** test runs Bowers and Wilkins' stylish CM5 – a variation on a familiar and long established two-way luxury standmount theme

**T**he request from the Bowers and Wilkins marketing team to the engineering department responsible for the CM5 loudspeaker, probably went along the lines of "make us something small, simple, beautiful and affordable". So it did!

At £800, it doesn't come cheap, but it is unquestionably delightfully designed and beautifully finished and a vast improvement over the 685 model (*HFC 299*), which incorporates many ostensibly similar core ingredients at around half the price, yet which is dressed in clothes that even its friends would call nondescript. And that's certainly not the description one would apply to the CM5. But its virtues aren't entirely superficial. Compare the specifications of the CM5 with those of the 685 and you'll notice that although the latter is somewhat larger, it's also significantly lighter in total weight, indicating that the CM5 benefits from rather more substantial build.

## Impressive build

Indeed, one soon becomes aware that the CM5 is significantly heavier than expected from the moment that you lift it from the carton. Clearly then, there's rather more to this speaker's engineering than is apparent on the surface.

A surface that is, mind you, very attractively decorated. Who knows whether our sample was finished in either Rosenut or Wenge real-wood veneer, as we've never encountered a Rosenut or Wenge tree, but in the world of faking-up an attractively stained and grained-looking surface from whatever wood happens to be available at a sharp price, this works very well indeed. It also comes in a silky satin finish or high-gloss black.

The sharp-edged enclosure looks chunky and compact, while the front panel is brightly decorated by a

thin silver trim around the bass/mid driver and a much wider faceplate around the tweeter – part of which is cut away in order to place the tweeter closer to the bass/mid unit.

## Inquisitive fingers

The back panel accommodates twin terminal pairs – one of which proved rather too tight for one of our four-millimetre plugs. Above the terminal block and integrated into the same substantial moulding is one of Bowers and Wilkins' proprietary Flowports, a generously dimensioned flared port with a stippled 'golf ball' surface to improve airflow and minimise turbulence. Another clever innovation concerns



The stippled 'golf ball' surface of the proprietary Flowport, above the twin terminal pairs, helps improve airflow and minimise turbulence

## DETAILS

**PRODUCT:**  
Bowers and Wilkins  
CM5

**ORIGIN:** UK/China

**TYPE:**  
Two-way  
standmount  
loudspeaker

**WEIGHT:**  
8.9kg

**DIMENSIONS:**  
(WxHxD)  
200x340x301mm

**FEATURES:**  
• Tube-loaded 25mm  
aluminium dome  
tweeter

• 165mm woven  
Kevlar diaphragm  
bass/mid driver

• Port-tuning bungs

• Magnetic grille  
attachment

• Finished in Rosenut  
or Wenge real wood  
veneers, or gloss  
black

**DISTRIBUTOR:**  
Bowers and Wilkins

**TELEPHONE:**  
01903 221500

**WEBSITE:**  
bowers-wilkins.com

the supplied foam bungs, which come in two parts. The whole bung may be inserted into the port to convert the speaker into a sealed-box mode of operation, or the centre of the bung may be removed to re-tune the reflex loading to a different (and rather lower) frequency.

The idea here is to provide an option, should the naked, open port tuning coincide and reinforce a significant room mode. Since the 'natural' port-tuning frequency at around 48Hz is very close to a major mode in our listening room, this option to lower the tuned frequency to around 40Hz proved very useful. The 'fully blocked' option would be particularly useful if circumstances dictate that the speaker has to be sited quite close to a rearward wall.

**“As befits a market leader like Bowers and Wilkins, the CM5 delivers a determinedly middle-of-the-road tonal balance.”**

The driver complement follows classic Bowers and Wilkins practice, by combining a 165mm bass/mid driver equipped with a Kevlar cone and a 25mm aluminium dome tweeter. The virtues of Kevlar lies in its smooth and controlled breakup and the way the sound source automatically becomes smaller as frequency rises.

One point of criticism regarding the Nautilus tube that loads the back of the tweeter diaphragm is that it's unquestionably vulnerable, especially to young children. While there's no denying the accurate piston action of a thin metal dome, unlike a doped-fabric tweeter it's easily damaged, especially by small inquisitive fingers. Protection is only provided during transit, as there's no mesh over the diaphragm here and the main grille is just a thin-framed fabric affair, held by hidden magnets.

## Generous sensitivity

Do spend time experimenting with the positioning and port options. For example, placing the speakers on 60cm stands and leaving the ports completely open and unobstructed did result in some bass 'thump' in our room, even with the speakers well clear of the nearest wall.

Under our listening room conditions, the CM5 arguably works best of all when well clear of walls and with ►



**BOWERS AND WILKINS** is the market leader in hi-fi loudspeakers, so it's hardly surprising to find that its CM5 is very competitive in its particular 'luxury standmount' slot.

A medium-sized standmount looks a very likely prospect, but such models were outclassed by rather smaller speakers in our recent group test.

Although some might consider it a little too laid back, the CM5 has a rather better overall balance than the Roksan TR-5, MAD My Clapton or Triangle Trio.

A good proportion of the CM5's budget has gone towards the very solid build and luxury presentation. If those factors aren't considered priorities, check out the Bowers and Wilkins 685 (£380) or the Q Acoustics 1020i (£127).

**DETAILS**



- 1** Bass/mid driver is a classic 165mm unit equipped with a yellow woven Kevlar-in-polymer cone
- 2** Tweeter is an unprotected and rather vulnerable 25mm aluminium dome
- 3** Grille is attached to magnets hidden beneath the veneer, preserving the front panel appearance if not required
- 4** Silver trim is mounted into the front panel and covers the drive unit fixing
- 5** A single substantial moulding accommodates the twin terminal block and the flowport
- 6** Sharp-edged enclosure comes in satin real wood veneer or high-gloss black

the foam sleeves in place. Under these conditions there is still some unevenness through the bass region, but it is less severe and the compromise seems rather better judged overall.

However, blocking the ports completely and placing the speakers as close as practical to a wall also achieves a very decent overall bass alignment and many users will doubtless prefer the lack of intrusion into the living space afforded by such an arrangement. It's a close call, as the speakers still sound pretty good under these conditions too, maintaining a similar overall character with fine bottom-end drive and purpose, although wall

proximity does interfere a little with the midband, adding a little 'cupped hands' coloration and somewhat inhibiting the image depth and transparency.

Most of the listening was done with the port sleeved and the speakers sited in free space, using top-quality vinyl, CD and radio sources from Linn/Rega/SoundSmith, Naim and Magnum Dynalab respectively, plus Naim amplification.

Helped by its generous sensitivity, good bass alignment and solid build, the CM5 can be driven to impressively high levels, without creating any unpleasant drama. That substantial enclosure helps ensure minimal box coloration, while also delivering a



**TALKING POINT**

**FOR MANY YEARS** the sound radiation created by the back of a tweeter diaphragm was virtually ignored, just as long as the delicate diaphragm was protected from pressure changes created within the enclosure by other drive units.

However, instead of a small resonant sealed cavity, Bowers and Wilkins developed a long tapering and well-damped tube that avoided creating pressure or reflections behind the diaphragm, giving cleaner reproduction from the front of the diaphragm.

This tube-loading approach was originally introduced in the stylish Nautilus 'flagship' model and has since been adapted and fitted across most of the company's ranges, often, as here, fitted within a conventional enclosure.

wide dynamic range with low level resolution and crisp low frequencies.

**Well judged**

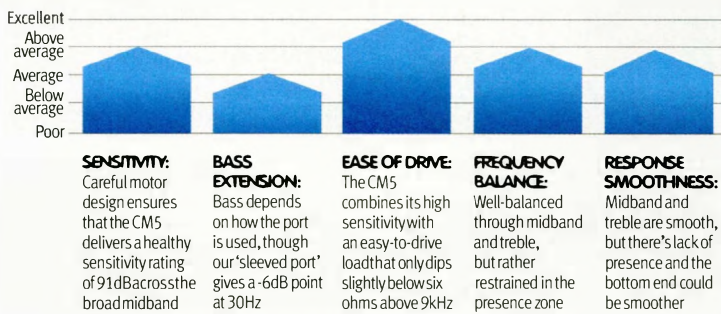
The midband voicing of any loudspeaker is invariably a matter for taste and discussion, as human hearing doesn't behave in a linear fashion. The speaker that gives good voice articulation at whisper-quiet levels will tend to sound rather fierce and astringent as the volume is steadily increased, to the point where it can sound rather uncomfortable when operating at high volume levels. By the same token, a speaker like this CM5 that enjoys being driven hard and to high levels, is liable to make voices sound a little 'shut in'. It also compromises intelligibility when the volume is turned way down.

As befits a market leader like Bowers & Wilkins, the CM5 delivers a determinedly middle-of-the-road tonal balance. Some might find its rather restrained presence band reproduction a little too cautious for personal taste, but others will welcome this character because of the way it avoids any unpleasantly aggressive tendencies, even when the speakers are driven hard with the modest quality type of source and electronic components that are appropriate to a speaker such as this.

The CM5 is a very well-judged, all-round performer that's well suited to its likely role at the end of a budget or mid-price hi-fi system. While some might find its laid back mien a tad frustrating when listening at late-night levels, others will welcome the ability to wind up the volume without causing irritation. An unusual combination of high sensitivity, alongside an easy load is a worthwhile plus, as is the fine cosmetic presentation that well deserves a 'luxury' label. ●

**TECH LABS**

**RESULTS AT A GLANCE**



**Hi-Fi Choice**

**OUR VERDICT**

- SOUND QUALITY** ★★★★★ **LIKE:** Solid build; fine midband evenness and unusual bass loading flexibility
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Presence restraint favours high-level listening over low-level articulation
- BUILD QUALITY** ★★★★★ **WE SAY:** Large and powerful with good sensitivity and excellent bass
- EASE OF DRIVE** ★★★★★

**OVERALL**





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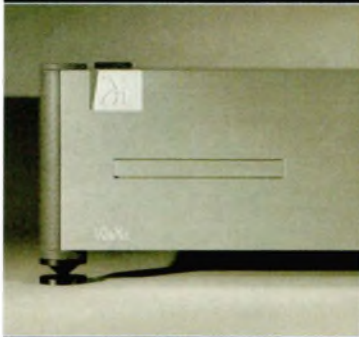
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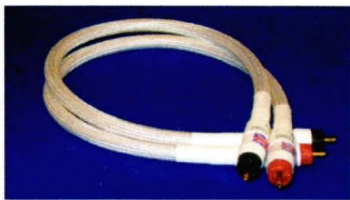
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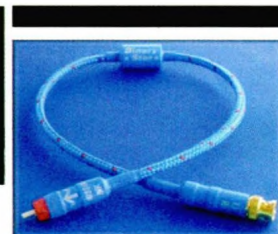
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# Follow the A1



**Dominic Todd** gets acquainted with legendary headphone manufacturer Beyerdynamic's high-performance A1 headphone amp

**T**he mission for Beyer's A1 is all about bringing wideband audio to the headphone enthusiast. The entire circuit has been designed to transmit 96kHz signals, making it ideal for SACD, DVD-Audio or other high-resolution audio formats. Against its rivals, who often seek a mellifluous, valve-like sound, the Beyerdynamic A1 has studio-like neutrality as its design concept. In a similar vein, the A1 is styled for practicality rather than flamboyancy. When it comes to electronic engineering, though, the heap amp is meticulous.

## Computer-friendly

In addition to offering a claimed frequency response of 1Hz – 100kHz, the A1 is similarly generous with headphone impedance. A 30 – 600ohm range is enough to cover all but the most obscure partners. Unlike a few rivals, though, there's only a single headphone output. Neither is there a USB socket, which can be handy if using your computer as a music source. Countering these deficits are twin audio inputs. These are operated by a microprocessor-controlled relay to avoid switching noise when changing input. You might not think this is a big deal, but when you regularly use headphones,

anything that avoids clicking and buzzing so close to your ears is to be welcomed. One of these inputs is looped with a passive output, allowing you to loop the sound through the amp without having to switch it on. All connection sockets are via gold-plated RCA phonos and not balanced XLR, which given its pro-leanings, is slightly unexpected. At least a very substantial phono lead is included in the box.

## Reassuringly expensive

Whereas some rivals feature slabs of wood or glowing valves, the A1 looks a little dour by comparison. Just a Nextel, grey or orange damping sleeve spices up the plain silver case. The styling may not be inspired, but the build quality is impressive. A thick, aluminium fascia fronts a sturdy casing. Inside, the Noratel toroidal power transformer looks up to the job of providing a wide frequency response, as do the four transistors that are mounted on a solid aluminium heatsink. The good-quality ALPS volume pot with aluminium knob feels smooth and precise; an important aspect with headphone amps as a small adjustment to volume is more noticeable when the sound is millimetres from your head. In terms of value, the Beyerdynamic looks a

## DETAILS

**PRODUCT:** Beyerdynamic A1  
**ORIGIN:** Germany  
**TYPE:** Headphone amplifier  
**WEIGHT:** 2.3kg  
**DIMENSIONS:** (WxHxD) 250x50x225mm  
**FEATURES:**  
 • Wideband, 96kHz optimised circuit  
 • ALPS volume potentiometer  
 • Noratel toroidal power transformer  
 • Case damping sleeve in Nextel grey or orange  
 • Twin audio inputs with silent selection  
**DISTRIBUTOR:** POLARaudio Limited  
**TELEPHONE:** 01444 258258  
**WEBSITE:** beyerdynamic.de/international

expensive next to rivals such as the Chord Electronics' Chordette Toucan (£800) and Lehmann Audio's Black Cube Linear (£665).

## Pops and clicks

It's not just the sound the A1 makes that impresses; it's also the silence. Given a suitable recording, this headphone amp recreates inky depths of silence that's the preserve of the very best amplification. At all times it sounds immediate and transparent. Bass is taut, deep and well integrated. Musical detail such as subtle cymbal decay is finely etched. The downside of such openness is that static pops and clicks on the record appear amplified; as do poor recordings.

The A1 certainly won't put a gloss on inferior recordings. That said, this is not a mechanical- or harsh-sounding amp. Vocals sound intimate, textured and flow with lucidity. In addition to great accuracy, the Beyer can claim broad sound staging to its credit. Whatever the price of headphone, the A1 seems to extract the very best from it in terms of separation and ultimate width of sound.

## Enthralled

Beyerdynamic has achieved its aim of accurate, wideband sound quality. That it has done this without making the A1 sound clinical is to be commended. In addition to sounding dynamic, detailed and transparent, the A1 also demonstrates fluidity, balance and the ability to keep the listener enthralled for many hours without fatigue. What the A1 won't do is flatter poor recordings or source components. Neither is the sound as mellow as some valve-powered rivals. Whereas this is hardly a fault with the Beyer, the price is. Rivals costing several hundred pounds less run it very close indeed. With that in mind the mighty A1 deserves a qualified recommendation. ●



## Hi-Fi Choice

### OUR VERDICT

**SOUND QUALITY**  
 ★★★★★ **LIKE:** Dynamic, detailed yet fluid and absorbing sound quality

**VALUE FOR MONEY**  
 ★★★☆☆ **DISLIKE:** No USB, expensive against rivals

**BUILD QUALITY**  
 ★★★★★ **WE SAY:** Hard to fault in terms of sound quality but the lack of USB and the price premium over rivals holds it back

**FEATURES**  
 ★★★★★

### OVERALL





# Premier league

**Richard Black** discovers Aura's Note Premier all-in-one, a £1,500 complete system that's just become our favourite one-box solution

**J**ust a couple of issues ago, we reviewed a group of one-box hi-fi systems, concluding that the best of the breed can give performance worthy of the 'hi-fi' tag. And still they come: here's another such unit, the Note Premier, bearing the brand name Aura, but made in Korea by April Music.

Aura may ring bells if you've a good memory: it was a UK brand some 15 or so years ago and the name has been bought-up by a

Japanese concern which passed manufacturing to April, but brought back British industrial designer Kenneth Grange to provide a certain look to the kit.

## Smart and compact

And the looks are certainly striking. The front panel is dominated by a mirror-finish stainless steel panel with a simple display and what looks like a black grille sitting beneath – it's actually the heatsink for the power amplifier stage. The top has

## ► DETAILS

**PRODUCT:** Aura Note Premier  
**ORIGIN:** Japan/Korea

**TYPE:** One-box hi-fi system

**WEIGHT:** 8kg

**DIMENSIONS:** (WxHxD)  
278x96x278mm

### FEATURES:

- Outputs: loudspeaker terminals; headphone socket (6.3mm); preamp
- Rated power: 50 watts
- USB playback: MP3; WMA; OGG
- USB recording: 128kbps MP3
- 4 or 8ohm matching

**DISTRIBUTOR:** Vivid Audio

**TELEPHONE:** 01403 782221

**WEBSITE:** [auradesign.co.jp](http://auradesign.co.jp)

more stainless steel and a thick sliding-glass door over the top-loading transport. Top-loaders are rather deluxe, we reckon. Yes, there's the puck to put in place, but that becomes second nature after one's played a couple of discs, and frankly it's all a much nicer experience than trays or slot-loaders, and quicker, too.

## Feature-packed

And just as much to the point, this transport saves quite a lot of internal space. That's important because the Note Premier (there was once a plain Note, by the way, though it hardly made it into the UK) is small and includes a lot of features. CD, obviously, but also FM and AM radio, but no DAB (worldwide, rather few countries apart from the UK are going for that in a big way and internet radio may well prove more of an issue).

There are also two line inputs, an optical digital input and two USB sockets, one each of A-type and B-type. The former is for USB memory sticks and iPods, while the latter connects to a computer,



allowing digital streaming of audio including the aforementioned internet radio.

Twin USB sockets like that is still a rarity, but it does mean the Note Premier is significantly more flexible than most of its breed, ready for pretty much any kind of computer music duty. It will even copy tracks from CD to a USB stick, as MP3 files (128kbps). Even better, it will record from radio. Result! Even though 128k MP3 is not the highest of high-fidelity, it would be churlish not to herald this as the first 'hi-fi' FM tuner capable of recording. Why did it take so long? Video recorders included a tuner almost from the year dot, but we waited over half a century from the inception of FM to get a combined tuner/recorder. Thank you, Aura.

Oh, yes, there's an amplifier, too. It's a straightforward linear one with a MOSFET output (the original Aura amps used something similar) and it's fed by a linear power supply, so those who stay awake at night fretting about switching circuits in their audio signal chain can sleep easy. It's rated at 50 watts, though that's into a low-impedance load and in normal 8-ohm terms it's good for about 35 watts. A preamplifier output allows you to hook up a more powerful power amp if you really feel the need, or perhaps more likely,



**TALKING POINT**  
**IN WHAT MIGHT prove to be the medium's twilight years, FM is not an area where we expect to find many new technological breakthroughs. The single-chip radio implementation in the Note Premier, however, defies that expectation. 'Proper' hi-fi tuners always needed fiddly bits – coils, resonators, adjustable components – as well as integrated circuits for their operation, which is why the FM/AM tuner section in other all-in-ones is a little metal box, smaller, maybe, than it was a few years ago, but still very much bigger than the single integrated circuit that does practically all the work in the Note Premier. Achieving complete, adjustment-free, FM and AM reception on a single chip is quite something. Ironically, the market driver for this was in-car entertainment!**

feed a slaved system in a second room. Connections are completed by a proper 6.3mm headphone socket.

Aura emphasises ease of use in its publicity for the Note Premier and we've no quibble with that. With so many features on offer, it's still completely straightforward to operate the unit and the rather bland-looking display tells you all you need to know, simply and legibly. About the only time one might wish for something fancier is when playing MP3 or WMA files (not WAV, incidentally) from a USB stick, as these tend to scroll across – but one can generally see enough at once to work out what it being played.

**“This is a positively inspiring product all round, showing just what can be achieved on a budget.”**

Physical assembly of the Note Premier is worthy of mention as it's exceptionally ingenious. It's not just the way the circuit boards are arranged inside – Nagra mastered that art in the 1960s – but the case assembly is unusually well thought out too. As for the electronic components, they're good quality

**CONNECTIONS**



- 1** Speaker terminals connected inside with rather thin wire
- 2** Preamp output enhances flexibility
- 3** Two line inputs (third on mini-jack at the side)
- 4** FM antenna input is US-style connector
- 5** Optical input could serve for DAB, Freeview etc
- 6** USB socket for computer connection (memory-stick on side)

**HIDDEN TECH**



- 1 Texas Instruments PCM2704 USB DAC and Cirrus Logic 192kHz DAC
- 2 FM/AM tuner
- 3 Top-loading CD transport
- 4 Cirrus Logic CS3310 volume control
- 5 USB input/output for iPod control and MP3 via memory stick
- 6 50 WPC Hitachi J162/K1058 MOSFET push-pull amp circuit

and in some places quite novel, notably the radio stage. Almost all hi-fi tuners of recent vintage use a bought-in module to do most of the work, but this product takes integration to the next level and uses a single-chip radio circuit from NXP Semiconductors, putting the radio functions on the main circuit board and saving a couple of cubic inches in the process. USB functions are handled by the usual integrated circuit and a good-quality DAC chip sits at the heart of things for all digital sources.

**2010's biggest bargain**

As always, such technical and aesthetic prowess is worth little if the sound's uninspiring. Happily that proved not to be the case here. In fact, we'd go so far as to say that this is a positively inspiring product all round, showing just what can be

achieved in a small space on a budget which, yes, is bigger than that for most all-in-ones, but still modest compared with any decent combination of amp, CD player, tuner, DAC...

What, perhaps, impressed us most of all was the sheer impact of the sound. It's not vastly powerful, though momentary peaks can exceed the continuous power output by a factor of nearly 2:1. Even so, it took a real grip on our Bowers and Wilkins' 803S speakers (and on the ATC and small JBL models we tried it with), producing the kind of visceral bass you simply don't expect from affordable audio.

This is really not so much to do with extension as with precision, but it does, of course, make the bass feel deeper and at the same time brings out the quality of the low frequencies – whether they originate from

**HOW IT COMPARES**

**THE OBVIOUS COMPARISON** for the Note Premier is the Arcam Solo Mini – similarly small, near-identical power output (in practice), pretty similar feature set, but half the price. And we liked the Solo Mini, so is the Note Premier an expensive folly? Well, for one thing it looks a lot more upmarket – the Arcam's appearance is a little dowdy by comparison. Basically the Aura is just that bit more polished and assured in its handling of any recording, giving more detail, more low-frequency extension and precision and arguably a more exciting listen. There's also the business of features: the Arcam has more line inputs but the Aura's twin USB sockets are a big plus and the one-touch recording of broadcasts clinches it. Each is well worth its asking price.

something tuned (double bass, piano, organ) or percussive, and how they propagate and decay.

That finding was consistent across the various sources on offer and it's clear that the amplifier part of the Note Premier is also very assured in the high frequencies. There's a little more variation high up between sources, with CD sounding very open while the optical and USB inputs are just a little less revealing in the top octave or two. That's the USB computer connection we're talking about – the side-mounted socket for memory sticks and portable players is limited by the fact that it only accepts data-compressed formats, but it still makes the most of such hamstrung sources.

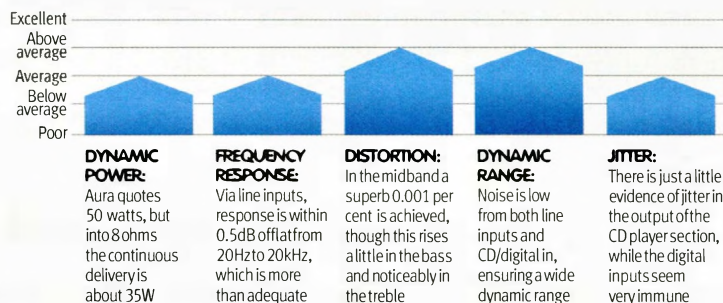
The tuner naturally lacks a little of the CD player's sparkle, but we have to say we're very impressed with it. By the standards not only of all-in-one systems, but also of recent standalone tuners, it is very clean-sounding even with less-than-perfect radio signals from an indoor aerial. Fed from a proper rooftop antenna, receiving a good broadcast on BBC Radio 3 or 4, it sounds unusually open and free of reception 'nasties', with good imaging and detail.

**Gung-ho**

We won't pretend that this is the be-all-and-end-all of audio. For a start, the lack of power does eventually make itself felt and if you like listening really loud on insensitive speakers, it's obviously going to fall short. We concede that imaging might be just a shade more extended and precise (Mozart string quintets showed this up) and that the presentation may be a little more gung-ho than one might wish for. Still, the opposite of that would be of far more concern and, in general, there's so much going for this unit that we can really only recommend it very highly. ●

**TECH LABS**

**RESULTS AT A GLANCE**



**Hi-Fi Choice**

**OUR VERDICT**

- SOUND QUALITY** ★★★★★ **LIKE:** Superbly featured, with sound that transcends both price and size
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Possibly a shade over-excitable at times and treble's not always pure
- BUILD QUALITY** ★★★★★ **WE SAY:** Overall, we adored this little gem. It's very capable and is a joy to use and hear
- SPECIFICATIONS** ★★★★★

**OVERALL**

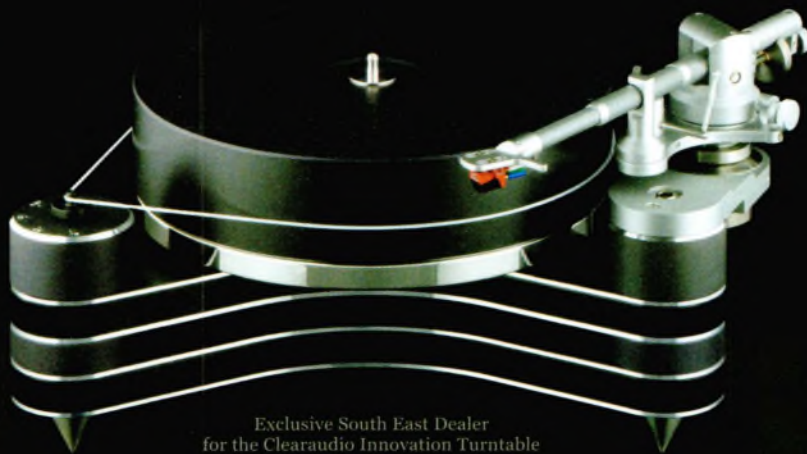


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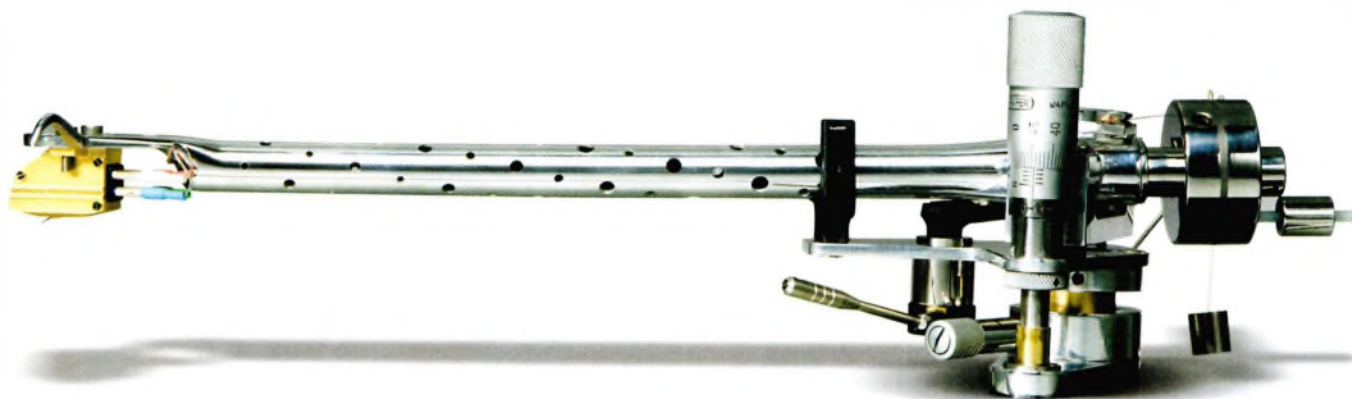
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# Beautiful bolt-on



The most dramatic Rega arm rebuild yet encountered sounds as good as it looks according to *Jason Kennedy*

**P**eople have been modifying Rega's classic RB series tonearms for some time now, but never have we come across such a dramatic transformation as the one achieved by Audiomod. It uses the arm tube, lift mechanism and rest clip from an RB250 and replaces everything else with machined aluminium parts that, like the tube, are polished for a perfect finish. If that weren't enough, Audiomod adds a micrometer to the system that allows precise VTA adjustment on-the-fly.

The arm is also presented in a padded wooden box and comes with alternative counterweights. In fact, how this can be done for the asking price is a bit of a mystery.

## Double helix technology

The most striking thing about the arm are the holes drilled into it, these run down the arm in two spirals to form a double helix. The purpose is to reduce mass without undermining stiffness, as would be the case with a straight line of holes. Audiomod also inserts press-fit discs inside the arm to increase radial stiffness and reduce resonant peaks.

The biggest change to a standard RB250 is in the bearings, which are ceramic hybrid types in a machined yoke. Interestingly, the same type of bearing is also used for horizontal

movement and both are decoupled from the base.

It comes in two wiring variants: one terminates the arm cables in a five-pin plug in the base (£625) and the option shown above, which has a continuous 900mm-long loom that ends in a pair of Nakamichi phono plugs. The wire used is silver litz and terminates in silver tags at the cartridge end.

Audiomod also supplies two sizes of counterweight, extensive set up instructions, alignment gauges for different null positions and annealed copper shims to mass load lighter types of cartridge.

## Balanced performance

We listened to this arm on a Townshend Rock 7 and the Dr Feickert Analogue Woodpecker reviewed on page 54 (in both instances it supported a van den Hul Grasshopper III cartridge).

The heavier of the two counterweights proved big enough to balance the heavy cartridge and the Townshend damping paddle, but only just. However, this didn't stop the Audiomod from delivering a far more fluid sound than the standard RB300 it replaced. We also enjoyed the easy adjustment of VTA while the record played, a feature which encourages positioning it where it can be easily accessed from the listening seat.

## DETAILS

**PRODUCT:**  
Audiomod Series III  
Micrometer

**ORIGIN:**  
UK

**TYPE:**  
Tonearm

**WEIGHT:**  
600g

**DIMENSIONS:**  
(WxHxD)  
90x90x290mm

### FEATURES:

- Silver litz wiring
- VTA adjustment by micrometer
- Adjustable quadrant anti-skate
- Ceramic hybrid bearings
- Two counterweights
- Fine downforce adjustment

**DISTRIBUTOR:**  
Audiomod

**TELEPHONE:**  
01737 769040

**WEBSITE:**  
audiomod.co.uk

## Beautiful tunes

Moving over to the Woodpecker, the difference between this and the Rega was even more pronounced, the finesse of the shiny arm making the latter seem crude by comparison. It plays beautiful tunes across the band, but this is most obvious in the bass where the abilities of various musicians is never less than obvious.

The degree to which you can hear what's going on in the mix is quite remarkable and the way it combines this analysis with musicality is extremely engaging.

## Impressive build

This impressively built arm has a very calm and clean presentation that makes more expensive alternatives seem brash and up front. Cymbals could not sound more realistic, while kick drums have weight and power.

There have been many attempts at refining what is a very good arm design in the RB250, but this is by far the most comprehensively capable and revealing example we've encountered. The fact that it has been so well thought through and is supplied with every bit of hardware and information you need to get it to sing, shows just how much effort Audiomod has put into the job. It seems under priced for what you get, but we're not complaining! ●

## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY



**LIKE:** Fluid-sounding arm with superb VTA adjustment and remarkable value

#### VALUE FOR MONEY



**DISLIKE:** What's not to like at this price?

#### BUILD QUALITY



**WE SAY:** It sounds clean and revealing and offers set up facilities that few can match

#### FEATURES



### OVERALL





# Luxman luxury



For sheer musicality and agility, the Luxman L550A-II has the potential to delight vinyl lovers everywhere. **Ed Selley** cues up

**L**uxman has begun to rebuild a worldwide reputation as one of the premier Japanese audio brands. The current product range is considerable and expanding and features a bewildering variety of solid-state and valve amplifiers, SACD and universal disc players and

phono stages. The latter is an interesting product line for Luxman to make as every single integrated it produces, be it valve or solid-state is already equipped with an internal phono stage. Word had begun to filter through to the *Hi-Fi Choice* office, that these phono stages are far more than a tick in the box of a

## ▶ DETAILS

**PRODUCT:**  
Luxman L550A-II  
**ORIGIN:** Japan  
**TYPE:** Class A  
integrated amplifier  
**WEIGHT:**  
21.95kg  
**DIMENSIONS:**  
(WxHxD)  
464x178x434mm  
**FEATURES:**  
• High-quality  
integrated phono  
stage  
• Extensive  
connectivity  
• Unique proprietary  
feedback system  
• Mains phase sensor  
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luxman.co.jp

feature sheet and that they represent a genuine challenge to some of the best external phono stages in the thousand pound range. Naturally we had to have a listen for ourselves. The L550A-II tested here is the entry-level Class A design.

## Fully loaded

Not that there is a great deal of 'entry level' thinking about the facilities, the L550A-II entirely rejects the trend towards minimalism in amplifier design. It features four line inputs, the phono input, two tape loops and a pair of balanced inputs

Impressively, the XLR inputs have the facility to be adjusted to suit both XLR wiring types at the push of a button, which allows the Luxman to work well with any balanced source. The front panel features bass, treble and balance controls, a recording selector and a stereo/mono selector. All of these can be switched out of





the circuit, but the scope they have for fine-tuning the output to suit your room and speakers mean that you may end up not doing so.

Dominating the front panel is a brace of VU meters, one per channel. Whilst probably not accurate enough for studio work, they give a reasonable idea of the output and they are somewhat hypnotic in practice.

In terms of its dimensions, the Luxman has more in common with a high-end AV receiver than a stereo amp. Such is the width and depth of the chassis, there is a reasonable chance it will require the top shelf of any normal-sized equipment rack. In view of this considerable bulk, it is something of a surprise to learn that the output from this vast chassis is 20 watts into eight ohms, rising to 30 watts into four ohms.

Even by the standards of Class A amplification, this is a surprisingly small amount, although enough to

**“few will match the sheer musicality and the sense of timing from the speed and agility it possesses”**

drive a variety of reasonably sensitive speakers without too much trouble

Luxman has also gone to great effort to reduce distortion on its output stage and has developed its own proprietary system called Only Distortion Negative Feedback (ODNF). This works by isolating noise and distortion at the output from the music signal and applying limited amounts of negative feedback to suppress them. This means the amp does not need to run constant negative feedback and means no DC servo circuit is present, which should further improve sonic performance.



**CLASS A** amps are recognised as offering a natural and unforced sound with accurate measurements. The naturalness and clarity that the Luxman demonstrates are classic attributes of the breed, although the pace and timing of the L550A-II is a welcome addition to them. Luxman have also made strenuous efforts to negate the other characteristic of Class A amplification, namely hot running. But the chassis has excellent heat dispersal and no part of the unit ever overheats.

Equally distinctive is the line phase sensor on the rear panel. This is a device that can check the phase of the electricity that the Luxman is receiving is correct (having the live and neutral wired incorrectly can be severely detrimental to sound quality).

The internal phono stage supports both moving magnet and moving coil cartridges and has a switchable subsonic filter on the front panel. Interestingly, it is optimised to work with moving coil outputs as low as 0.3mV, which means it should have no problem with all but the lowest output designs on the market. It is joined by a headphone amp that makes full use of the speaker circuitry and is designed to be more than up to the task of late-night listening on good-quality headphones.

This considerable specification is topped off with a bespoke all-metal remote control, which is beautifully

## Q&A...

WE SPOKE WITH STEPHEN RIDDICK OF SELECT AUDIO WHO IMPORT THE LUXMAN RANGE INTO THE UK



**HFC:** What was the thinking behind bringing the Luxman brand back into the UK?

**SR:** Luxman historically did very well in the UK, from the 60's through to the 80's, and developed a reputation for excellent sounding and extremely well-built equipment that I felt the current product could only build on. When we started distribution up, we were immediately contacted by people who had bought Luxman equipment years before and were only interested in upgrading because they could buy more of it! This return has also coincided with fresh interest in Japanese high end, which has undoubtedly helped the brand and brought more interested people to it.

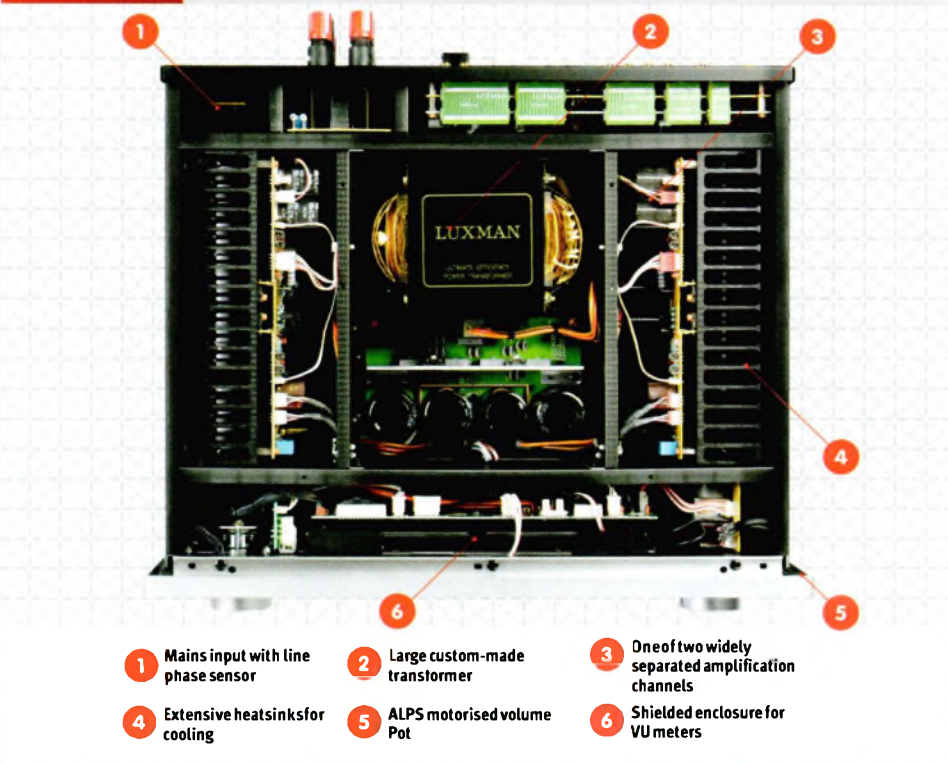
**The design philosophy of Luxman is significantly different to current European practice – has this been a problem for the UK market?**

It hasn't really been an issue. The amps have also evolved over time and they have always looked this way so there is a sense that this is what a Luxman should look like. The technology is very advanced with features like ODNF being state of the art. However, when it comes to valve amplifiers you can't reinvent the wheel and Luxman, like most other amplifier designers, acknowledges a debt in some of their products to original circuit layouts that go back to the days when Mullard was a hugely influential name in specialist audio electronics.

**The 550 is capable of excellent results with a little attention given to speaker matching. Do you have any recommendations?**

The actual output of the L550A-II is higher than Luxman state and the ability of the amp to supply current is higher still. As such, the choice is going to come down heavily to personal preference, but we've had some excellent results with the WLM range and the Luxman can easily handle designs that are considerably more expensive than it is.

## HIDDEN TECH



- 1 Mains input with line phase sensor
- 2 Large custom-made transformer
- 3 One of two widely separated amplification channels
- 4 Extensive heatsinks for cooling
- 5 ALPS motorised volume Pot
- 6 Shielded enclosure for VU meters

retro in appearance, but also the model of simplicity in use. Luxman has clearly recognised that the remote is the most common point of contact between user and amplifier and the results are excellent.

### Rock-solid

Luxman is a founding member of Japanese high end and the fit and finish of the L550A-II shows all the hallmarks of the breed. Every control operates with a precision and solidity that is hugely confidence-inspiring (given the sheer number of them on the front panel it's just as well).

The chassis has had great attention given to its isolation and layout, and the components used internally are of a high standard, finishing in some of the most solid speaker terminals we've seen in a while.

In value terms, the Luxman has to be considered a strong proposition. Whilst it is far from cheap, the extensive connectivity and the presence of a good-quality phono stage and headphone amplifier negates the need to buy external examples of each.

It is not the easiest amp to directly compare to the competition, but few other models at this price point offer such a broad range of facilities and features. Other Class A designs especially are generally far more minimalist than the Luxman.

Perhaps the closest comparison can be made to rival Japanese brand Accuphase, who also produces high-specification Class A integrated amps but at substantially higher cost than the L550A-II.

### The great all-rounder

In use, the Luxman is instantly likeable. Even from cold, there is a sense of exceptional space and realism which only improves as the unit warms up. The 20-watt output must also be taken as something of an understatement as the L550A-II is capable of taking all but the most insensitive designs and driving them to levels that should prove sufficient for all.

The overall presentation is calm and unforced. Lively and upbeat recordings are reproduced with their force and drive intact, but at the same time there is no sense of calmer recordings being overdriven. The results are fantastic and it is possible to listen to the Luxman for extremely long periods with no sense of fatigue, staring at those hypnotic VU meters while you do so. Pushed very hard indeed into insensitive speakers, the Luxman will harden up slightly, but avoids any real sonic nasties.

One of the more impressive areas of sonic performance is the bass. This is both remarkably tuneful and agile, whilst going substantially lower than

**CONNECTIONS**



- 1 Inputs 1 and 2 can be switched between balanced and unbalanced
- 2 Removable bars to convert to pre- or power amplifier
- 3 Line phase indicator LED
- 4 Switch to adjust between XLR wiring types
- 5 Isolated and damped feet

might be expected of an amplifier with only 20 watts to its name. There are more powerful amps at the same price that will dig deeper still, but few will match the sheer musicality of the Luxman and the sense of timing that comes from the speed and agility it possesses. This timing is not perhaps as assured as some of the acknowledged specialists but it is no slouch.

And what of the phono stage? Put simply, it sounds like an extension of the amp. If this sounds a little anticlimactic, that is not the intention. It's possessed of the same remarkable even-handedness of the L550A-II and the same excellent space and tonality. If you like the sonic attributes of the Luxman then the phono stage should prove equally desirable.

As the phono stage was developed as an integral part of the amp, it

shares the same behaviour and adds an extremely low noise floor and genuinely useful subsonic filter to improve matters further. It is only the increasing need to use external phono stages with their own sonic characteristics that has led us to believe that the ideal should be any variance in the way that the line inputs and the phono inputs sound. The L550A-II does exactly that and will allow you to hear and enjoy your turntable, arm and cartridge choice with no intervening layer.

**Vinyl lovers**

This ability to produce the same excellent sonic performance, regardless of input is a huge bonus to multiple-source systems and goes some way to nullifying the very large size of the L550A-II. As a final ribbon



**THE SHEER QUANTITY** of inputs that the L550A-II possesses means that the Luxman can handle virtually any collection of source equipment a system might possess. The phono stage has unusual sensitivity for an internal design, which means that it can achieve more than acceptable levels from virtually any moving coil cartridge.

The Dynavector DV20X, is a challenge to some phono stages, but a very happy match with the L550A-II. The 20-watt output of the Luxman proves far less restrictive to speaker choices than might be imagine.

Review work was done with the extremely sensitive Audio Note AN-K's, but any design with a sensitivity of 90dBs or higher should prove an excellent match. Make some small allowances for the Luxman and it will reward you hugely.

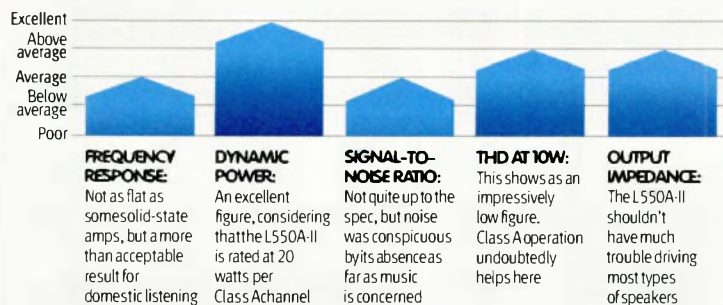
to an already very large bow, the headphone amp is more than up to the task of running some of our favourite headphones up to the £500 price point.

We secured the Luxman to test whether the phono stage makes it a strong proposition for vinyl users. The answer to this question must undoubtedly be "yes." The internal phono stage is a truly excellent device and is capable of putting up stiff competition to the best standalone devices under £1,000.

This excellent device is inclusive to the price of a very talented amp. To simply call this an amp for vinyl lovers is to do it a disservice. The L550A-II is capable of equally stunning results in systems with no turntable and should be auditioned as such. There's no doubt about it, the Luxman is a genuine superstar. ●

**TECH LABS**

**RESULTS AT A GLANCE**



**Hi-Fi Choice**

**OUR VERDICT**

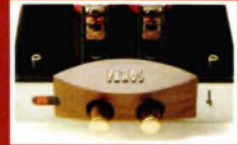
- SOUND QUALITY** ★★★★★ **LIKE:** Extensive features include an excellent phono stage; lively and natural sound
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Huge size, some limitations with insensitive speakers
- BUILD & QUALITY** ★★★★★ **WE SAY:** An accomplished all-rounder that's able to handle virtually any system
- SPECIFICATIONS** ★★★★★

**OVERALL**





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# Boxing clever

**Dominic Todd** looks at the latest offering from Q Acoustics, the relative newcomer that's defining the high-value loudspeaker concept

**Q** Acoustics loudspeakers have a great reputation for their accuracy of timing, imaging and, given their size, dynamic prowess. An attribute we recognised here in the pages of *Hi-Fi Choice* with a Best Buy badge (HFC 318) and an Awards Finalist citation (HFC 326) for its previous model, the 1020i.

Cue the 2050. With its twin woofers and cabinets that stand over one metre high, the 2050s appear to have what it takes to add even more muscle to the Q Acoustic family. Whilst their price pits them against plenty of rivals, few offer so many cubic centimetres per pounds sterling. Those that do are, inevitably, sonically compromised. The 2050's mission, therefore, is to maintain the enthusiastic sound of their little brothers, but with an added dose of wallop.

## New breed

The 2050 is typical of its breed with a few additional design flourishes. The paper pulp woofers and soft dome tweeter are the very model of convention. Double magnets on the woofers make them magnetically shielded and thus safe to use around magnetically stored data.

Given the price, the cabinet is also extremely well constructed. No fewer than four braces, including individual woofer braces make for low cabinet resonance. The curved cabinet edges not only look smart, but are designed to reduce cabinet diffraction for improved stereo imaging. It's also good to see extensive damping. Both faceplate-to-cabinet and woofer to brace interfaces are damped by copious amounts of black plastic padding. The conventional crossover features bi-wirable and gold-plated binding posts. These are hidden at the base of the speaker and do much to enhance the clean lines, especially when pulled away from a rear wall.

Should you be forced to place the speakers close to a wall, however, then foam port-dampers are supplied to control the bass.

Our glossy white samples looked great but do, along with gloss black, set you back an additional £80 (black/walnut are £370 per pair).

## Skin-deep beauty

Look beyond the glossy finish and the 2050 is well made, if hardly sensational. Some of the (hidden) machining around the woofers is roughly finished and, at around 23mm, the MDF cabinet is not the thickest. The thin, pressed steel woofer baskets don't exactly exude quality and the internal speaker cable

## DETAILS

**PRODUCT:**  
Q Acoustics 2050

**ORIGIN:**  
China

**TYPE:**  
Floorstanding  
loudspeaker

**WEIGHT:**  
21 kg

**DIMENSIONS:**  
(WxHxD)  
270x1006x321mm

**FEATURES:**

- 25mm soft dome tweeter
- 2 x 165mm pulp fibre cone woofers
- Integral steel plinth
- Individual woofer bracing
- Optional piano gloss black or gloss white finish

**DISTRIBUTOR:**  
Armour Home

**TELEPHONE:**  
01279 501111

**WEBSITE:**  
qacoustics.co.uk

is nothing to write home about, either. The grilles are also rather flimsy. Having said all that, against its class competitors, the 2050s are solid and do have elements of fine finish. The gloss paint on our test speakers was flawless and, thanks to the bracing, the cabinet is very rigid. The curved cabinet edges and smoothly designed plinth help further, but we can't help but feel that it's only skin-deep beauty.

## Benefit of scale

If the finish is excellent in places and average in others, much the same can be said of the sound quality. Immediately apparent is the impressive sound stage. As good as many speakers costing twice the price, the 2050 locks vocals dead-centre and gives the band or orchestra room to stretch out. Better still, the staging has three dimensions with both depth and projection. Other positives include fine dynamic scale and a taut bass that doesn't sacrifice too much agility for weight and extension.

Less impressive is the tweeter's performance. An indistinct percussion and lack of treble precision lets the side down. Also, the timing isn't as enthusiastic as the smaller Q models and certainly not a patch on the best standmounts at this price.

## The great and the good

The 2050 has the scale and weight of sound that's missing from Q Acoustics smaller models. There can also be no doubting the exceptional sound-staging and separation. Sadly, it's the detail aspects of sound quality that hold the 2050 back from excellence.

The treble performance is too rough around the edges, with average definition. Similarly, while they look the part, the big Q Acoustics aren't as well finished beneath the surface as they could be. A good speaker, then, but not a great one. ●



## Hi-Fi Choice

### OUR VERDICT

#### SOUND QUALITY

★★★★☆

**LIKE:** Excellent sound staging, fine scale and smart looks

#### VALUE FOR MONEY

★★★★☆

**DISLIKE:** Slightly imprecise and coarse treble

#### BUILD QUALITY

★★★★☆

**WE SAY:** Rough edges to both build and sound quality hold the 2050 back from greatness

#### EASE OF DRIVE

★★★★☆

### OVERALL

★★★★☆



# New way to play



Direct-seller Teufel's ambitious Ultima 800 loudspeaker is not only innovative, it's redefining value for money, says **Alvin Gold**

**T**eufel is set up quite differently from most of its rivals, with a range of loudspeakers that must be ordered off the page, rather than through traditional hi-fi dealers. This does mean making a purchase without the usual safety net, but then part of the deal is that you do get the opportunity of an extended trial period before committing yourself irrevocably. You also get an extended guarantee period – twelve years – and full phone/web-based technical support. Above all, the simplified retail structure means that more of the manufacturer's resources can be invested in R&D, so factor in unusually strong value for money.

In fact, Teufel has not been afraid to break many of the mores of mainstream loudspeaker design. The Ultima 800, by far the most ambitious model that Teufel produces, is a three-way speaker, albeit one that uses no less than eight drive units: a tweeter, a midrange unit, two parallel connected bass drivers and four (count 'em!) passive bass units – three taking up the whole available baffle area on the back panel, as well as one pointing forward and mounted just below the two active drivers on the main front panel.

There are a number of unusual and even unique elements to the design. The soft-dome tweeter has a larger diameter than usual, which suggests a more directional and a slightly less extended treble output, though this is addressed in part by being mounted alongside the midrange titanium dome unit on a sub baffle that is angled back and upwards by 30 degrees.

## Flapping baffles

The use of multiple passive LF drivers (aka ABRs – Auxiliary Bass Radiators) is an alternative to the more popular and much cheaper to implement, reflex port loading. With ABRs, there are no delayed reflections from inside the enclosure, and there is no air rushing through the port as the bass drivers pump. All this means less distortion and more consistent behaviour over a broader volume range. Passive 'flapping baffles' also add more variables to the enclosure tuning equation, namely the mass of the passive cones and the compliance of their suspensions.

Other design highlights include a titanium-dome midrange unit plugging the gap between the bass array and the surprisingly low-tech soft-dome tweeter and the crossover



Multiple passive drivers are included by Teufel as an alternative to reflex port loading. The result is a sound with less distortion over a broader volume range

## ▶ DETAILS

**PRODUCT:**  
Teufel Ultima 800  
**ORIGIN:** Germany

**TYPE:**  
Three-way, six  
driver floor-  
standing

**WEIGHT:**  
31.2kg

**DIMENSIONS:**  
(WxHxD)  
220X980X374mm

**FEATURES:**  
• All crossovers  
slopes second order  
(12dB/octave)

• 100mm titanium  
dome midrange unit,  
rare earth magnet

• Large diameter  
cloth dome tweeter,  
rare earth magnet

• Available in high-  
gloss black or walnut

• Three bass-  
alignment settings  
via crossover

**DISTRIBUTOR:**  
Teufel GmbH

**TELEPHONE:**  
00800 200 300 40

**WEBSITE:**  
teufelaudio.com

which provides three additional bass alignment options, that are accessed by connecting a jumper between one or other of the three pairs of terminals in a row above the input. They provide settings with progressively leaner bass, the final one approximating to a sealed box alignment.

In some acoustic settings, and depending also on personal preference, you may find one of these alternatives a better bet.

## It's a knockout

In the flesh, the Ultima 800 is an absolute, unqualified knockout. Relatively compact and not excessively tall, given its flagship status and price, it is nevertheless

**“It goes loud, does dynamics and stereo imagery in a convincing and meaningful way with subtlety and poise.”**

heavy and solidly built as the rap knuckle test quickly confirms.

The internal structure includes a separate sub-enclosure for the midrange dome and the main cabinet has an internal shelf brace about half-way up. Finally, the external presentation of the enclosure (walnut veneer on all visible surfaces, other than the front-facing baffles which are black), is first-rate, not least thanks to the high-grade, deep-gloss finish.

The only real criticisms concern the midrange/tweeter cover, which does have a subtle audible influence on the sound, though it is readily removable and the wide footprint supporting superstructure, consisting of steel bars which are designed to be screwed to the underneath of the enclosure, and which are fitted with overhanging feet.

This arrangement, which is similar to that used, for example, by some Sonus faber models, is perfectly functional, but it is not the optimum choice visually. The more common alternative of a wider overhanging wooden plinth could have provided similar levels of stability and a better visual fit in many surroundings.

## Sound solution

Teamed up with a Denon DCD-SA1 SACD player and PMA-SA1 amplifier, the Ultima 800 quickly establishes itself as a rock solid, stable and



**IT IS NOT EASY** to find a direct equivalent to the Ultima 800 outside the Teufel range. Although quite different technically and physically, the Magneplan Magneplanar MG1.6 certainly deserves to be considered as an alternative, thanks to its superb all-round sound quality, especially with medium scale acoustic material.

It is interesting to note that the Mordaunt-Short Performance 2 (HFC 333), which has a superficially similar balance, costs almost exactly the same as the Ultima 800, yet is a much smaller speaker, with a correspondingly more limited LF.

In addition, the Ultima 800 is a much easier electrical load, which is explicitly designed to work happily with a range of amplifiers, including medium power (50-watt +) valve powered designs.

FEATURES



- 1 Oversized soft-dome tweeter on angled baffle
- 2 Midrange is a single-piece titanium cone without a dustcap
- 3 The two main, driven bass units operate in tandem with the ABRs (see below)
- 4 There are three Auxiliary Bass Radiators on the rear baffle, and one on the front
- 5 Heavily-braced cabinet with real walnut veneer
- 6 User-adjustable crossover with four different bass alignments

informative loudspeaker. You'll need to run it in for a few hours and choose the appropriate bass alignment from the four available, though we preferred the standard input (using just the normal input, with no shorting links). This native alignment is already verging on the dry sounding side of neutral, and on test in a large, well-furnished listening room, there is no perceived advantage in using any of the alternative settings.

One recording that quickly demonstrated the Teufel's class was of Schoenberg's *Gurrelieder*

(reviewed in *HFC* 334), specifically the final movement *Seht, die Sonne (see the sun)*, which is the massively powerful concluding section at the end of the oratorio, where density and passion is a hard job for many speakers to cope with at the elevated volume levels it demands.

In a quite different recording, this time of Nikki Yanofsky *Ella – of Thee I Swing* (a young, pure-voiced jazz singer), the Ultima 800 impresses for its purity and projection. With both recordings, the speakers are consistent in sound and retain a similar balance at even very



WE ASKED TEUFEL'S PRINCIPAL DESIGNER, ANDREAS GUHDE ABOUT THE ULTIMA 800.

**HFC:** Please describe the crossover topology.

**AG:** The crossover was designed to be as simple, and therefore, as transparent, as possible. Using low order slopes, there are relatively few components, and those that are used include air core inductors whose windings are impregnated with resin to minimise distortion and kill vibration. Polypropylene foil caps provide stability and won't dry out over time.

**HFC:** What is the purpose of the additional terminals on the connector block on the rear panel?

**AG:** They offer a range of acoustic damping qualities, which offer more bass and mimics the bandpass characteristics of an infinite baffle loudspeaker.

**HFC:** Describe the construction of the bass units?

**AG:** They're all sandwich cone drivers using layers of carbon fibre, which results in a thick, but very lightweight structure.

high volume levels, while still offering a sense of projection at much lower volume settings, particularly during the Yanofsky recording. But, in both cases imagery is expansive, stable and airy.

In conversation during the course of this review, Teufel made it clear that IT had paid particular attention to the issue of dynamic compression – one reason for the choice of a large diameter tweeter.

Nevertheless, it is impossible to ignore that fact that the tonal balance of the speaker is inherently veering on the dry and light side of neutral. This is not uncommon with German speakers, but in any case it is quite subtle: the treble-led balance is in no way excessive and in our view should not be a deal-breaker. In many cases it can be addressed in the set-up, for example by choosing an alternative bass alignment as described earlier, or by adjusting the distance from the listener to the speaker so that the tweeter's main axis is not directly in line with the listener's ears.

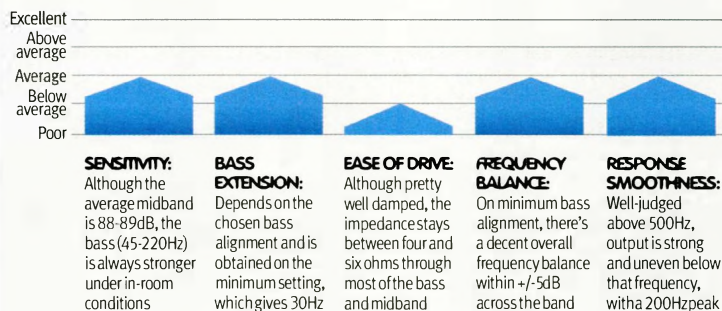
Safety net

Whether or not you like the distinctive balance of the Ultima 800 is nothing more than a matter of taste, which for the most part is readily addressed with an appropriate choice of inputs and room positioning. Also be sure to remove the detachable cover over the midrange and tweeter – the covers over the bass units made no audible difference that we could detect.

What is not in doubt is the Ultima 800's musical integrity. It goes loud, does dynamics and stereo imagery in a convincing and meaningful way and yet at low volume levels it still sings with considerable subtlety and poise. And being able to return them within the first eight weeks for a full refund is a real confidence booster, as well as helping negate the disadvantage of not being able to audition them at your local hi-fi store. ●

TECH LABS

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Transparent sound quality and gorgeous looks
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Agricultural looking supports; mid-tweeter cover and lean tonal balance may not please all
- BUILD QUALITY** ★★★★★ **WE SAY:** Exceptional value for money due to direct sales and easy to accommodate system matching
- EASE OF DRIVE** ★★★★★

OVERALL

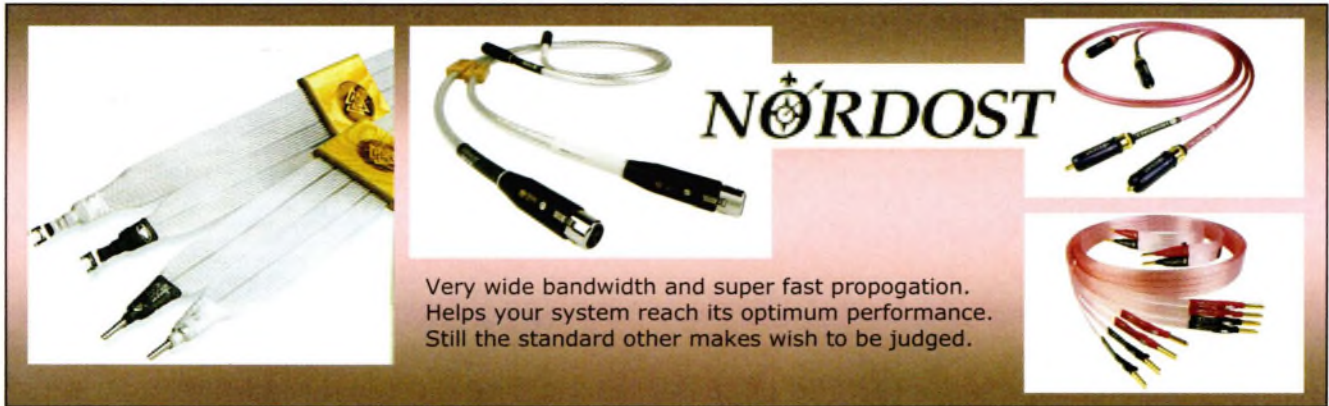




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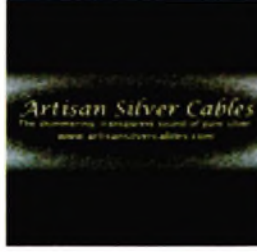

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## HI-FI SEPARATES

### CYRUS



Cyrus' award-winning CD Xt SE and DAC X have been upgraded with a + suffix in a recent review, this combination when used with 2 x PSX-R power supplies, received the prestigious Editor's Choice' award by Hi-Fi Choice magazine

The XP amplifiers are based on the circuitry of the top of the range DAC XP+. The entry-level 6XP includes 6 line level inputs along with a

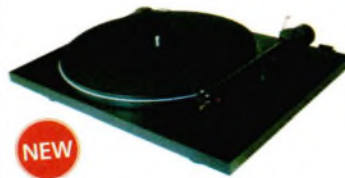
zone 2 feature while the BXP d combines the XP series pre-amplifier with a newly revised power amp, and contains an onboard DAC for digital sources.



### PROJECT

### ESSENTIAL

Following the success of it's Genie MKIII, Project has introduced a new entry-level turntable - the Essential This 2 speed model comes complete with Ortofon OMB 3E cartridge, dust cover, is easy to set-up and sounds great.



### MICHELL

### GYRO SE

Based entirely on the GyroDec, but without the costly acrylic plinth and dustcover, the Gyro SE brings the same qualities in a more affordable and compact package. A Gyro SE can always be converted into a GyroDec by purchasing a plinth and dustcover.



- |           |           |         |
|-----------|-----------|---------|
| CDX t SE+ | DAC X+    | 8XPd    |
| CD8 SE    | DAC XP+   | PRE XP  |
| CD6 SE    | 6XP / 8XP | X POWER |

### ARCAM

#### FMJ

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|------|-----|
| CD17 | A28 |
| CD37 | A38 |
| A18  | P38 |

### ROKSAN

#### KANDY K2

Roksan replaces its hugely successful Kandy series with the Kandy K2 amplifier and matching CD player



CASPIAN M SERIES  
K2 SPEAKERS

### ROTEL

#### 06 SE SERIES

Rotel's 06 Series includes four new components and updated versions of the classic CD player and three stereo amplifiers.



- |          |
|----------|
| RCD-06SE |
| RA-04SE  |
| RA-06SE  |

### LEEMA

#### ANTILA II TUCANA II

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3 NEW STORES  
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PART  
TWO

# Vinyl victorious

With vinyl recordings changing hands for large sums of money, **Mark Prendergast** meets the guys responsible for keeping the format alive and well in the 21st century

**W**hen you pick up a nice chunk of remastered vinyl like the recent Sony Jimi Hendrix Experience series you will note the quality – extra-thick vinyl, a smooth raised rim and the perfect sheen of well-cut grooves. Labels like Mobile Fidelity Sound Lab and Classic Records in the USA make it their business to produce the best vinyl money can buy. There's a reason why Pink Floyd's *Meddle* (MFSL 1-190) cut sells for up to £500 at auction. It's because it's a perfectly mastered vinyl record that will last forever.

## The view from the studio

The art of the vinyl cutter and masterer is like that of a producer, something that is technically out of the ordinary and somewhere in the lap of the Gods. Simon Heyworth from Super-Audio mastering talks about the strong relationship between the original master tape and the early vinyl pressings from these tapes. "The early vinyl pressings are astoundingly useful when you are mastering. A recent case in point is Nick Cave & The Bad Seeds' *Your Funeral My Friend*, which was a double album pressed at 45rpm (two tracks per side) which sounds great. That record has this lovely top end, which is a symptom of the cutter, this high-frequency limiting and the signal path of getting the stuff onto vinyl. What you end up with is this lovely silkiness, the vinyl feel, the stylus-to-vinyl contact. I did three transfers – one from the original master tape, one from an EQ'd Production master and one from the original vinyl. I sent the band three discs and guess which one they screamed for? The vinyl transfer, of course. And that's what's on the CD."

Heyworth's proudest moment was the discovery of the original master tapes for

2009's 40th Anniversary classic remaster of *In The Court Of The Crimson King*. "We put out a de-clicked version of Robert Fripp's first copy of that album. There was always a funny difference between the CD and the vinyl for the 1999 version and that's because the original master tapes weren't around. Then one day they turned up in a box of stuff that came from Virgin. I picked this tape out and it said King Crimson Side One in big red letters. And I said that looks to me like the original master tape and I put it on the Ampex ATR and four bars in we were both looking at each other, eyes wide open, and saying "that's the original master tape!"

## Frank Arkwright – remastering vinyl

Frank Arkwright is considered to be England's greatest mastering and remastering engineer for contemporary rock music. Beginning work at Pink Floyd's famous Britannia Row studio in 1986 as tape operator, he soon developed an interest in mastering and digital editing. After a further three years at Chop 'Em Out, he then moved to the Townhouse where he began cutting vinyl as well as CD mastering.

After a year at the legendary Whitfield Studios (Hendrix/The Clash/Iggy Pop/The Who) he moved to Metropolis in Chiswick in 2005. He has built a reputation mastering the likes of Snow Patrol, The Stereophonics and Coldplay, plus trendy groups like The Coral and Arcade Fire, but his biggest coup was the 2009, 180 gram Vinyl Plus album releases of The Smiths records including the all-time Indie classics *Meat Is Murder* and *The Queen Is Dead*.

"Yes I do a lot of what's termed Indie-Rock and I have some sort of reputation. I remastered the entire Smiths catalogue for vinyl, both singles and albums. I've also

worked with New Order and the Joy Division catalogue. With the latter, after a long discussion it was decided to go way back to the original half-inch analogue tapes and remaster them from scratch!"

"Stephen Morris actually came down from Manchester to supervise the mixes and was tremendously helpful with input and recollections. Some of these singles like *Love Will Tear Us Apart* had been very dramatically EQ'd, when they were released in the 1980s. They were quite loud, quite punky, quite aggressive and quite harsh. Yet they were culturally important and a significant body of work musically, not to mention the historical importance."

Arkwright enthuses about some of the new advances in technology, like being able to master to high resolution at 24-bit/96khz to 'capture the sound' from those half-inch reels with more detail and more depth.

"I use an Ampex ATR with a re-built head by Mike Spitz. First of all I am going to do it for vinyl, which means more dynamic range and less distortion. It'll have far more depth and detail, as Martin Hannett was such a production genius. And that's why it's mastered with great care and without any excessive limiting."

Arkwright looks back at the days he began vinyl mastering and cutting as the pivotal point in his career. "I started cutting vinyl in

**"The art of the vinyl cutter and masterer is like that of a producer, out of the ordinary and somewhere in the lap of the Gods."**



The Metropolis vinyl mastering suite. It's through this equipment that masterpieces like Amy Winehouse's *Back to Black* found their way to vinyl

**“Mastering is basically a stage between recording and mixing and before manufacture.”**



Stuart Hawkes at the Metropolis cutting lathe with an SME tonearm and Shure V15 cartridge

1993 at the Townhouse which was then owned by Virgin/EMI. As a mastering department, it had a very, very good reputation. I learned from the best guys in the country and the English engineers were always very good at vinyl.

“Nowadays, I believe there’s a lot of potential for bands reissuing vinyl to take the trouble over it. With The Smiths, the band weren’t at all happy with the original sound, but when we went back to the those half-inch tapes, along with some of the finest Neumann VS80 lathes and some of the best half-inch machines in the country, we gave them a warmer, less bright, analogue sound and a fantastic result.”

### **Stuart Hawkes – on vinyl cutting and mastering**

Walking into the mastering studio at Metropolis studios your eye immediately notices a copy of Amy Winehouse’s 2006 smash *Back To Black*. It is, according to Hawkes, one of the most enjoyable and satisfying albums he’s ever worked on. As he cuts to lacquer on an acoustic set by the band I Am Kloot, he graciously guides us through the process.

“Mastering is basically a stage between recording and mixing and before manufacture. We nearly always go analogue, do whatever EQ and compression etc we need. Then we

convert it back into digits and record it in SADIe, which is our digital workstation that captures all our mastered vinyl. And that is what we are cutting off now. I will make the master lacquers, which will then go off to the factory where the record stampers will be made.”

“Each lacquer is single-sided and is actually fourteen inches wide. The extra two inches of outer rim is used for test tones, writing the catalogue number on and eventually for handling the lacquer as it is forced into the stamping machine!”

Hawkes does find contemporary arguments about digital versus analogue hilarious. “I’m not talking about old records, but present day recordings, which almost all come from a digital source, going through a digital delay line. So it does seem strange when people talk about preferring the sound of, say the new Sade album on vinyl when comparing it to the CD version, seeing as both record and disc have been accessed from the same source!”

Near the cutting lathe we noticed a Technics record deck. What this is doing in a state-of-the-art mastering studio is anyone’s guess. But there’s actually a very good reason for its presence, as Hawkes makes clear, “Well on the cutting lathe turntable I’ve got an SME arm with a Shure V15 cartridge, which is very good. And that’s the problem, it’ll play back anything. So anything will sound good with no distortion and that’s no good for me. I need to play a test cut back on more standard equipment, so I can take more of a lower common denominator. In general, people’s record decks will be something like a Technics, which is not too good at reproducing what you cut. The Technics also has a Stanton 500, which is a pretty basic cartridge, but it will show up any problems rather than glossing over them.”

Hawkes says he has been doing this job for 25 years and he confesses the biggest problem with records is sibilance, the vocal distortion on Ts, Ss and Fs. “You get that nasty broken syllabic sound or a spike and you know you’ve got to stop, because it will distort. The other thing is that you cannot always cut a record the way a client wants, as he or she is not always *au fait* with the laws of physics which go into cutting a record. So there can be conflicts between what the producer wants, what the artist wants and what the science actually allows us to do. But, at the end of the day, there really is no definitive right or wrong way to cutting vinyl; just variations on a theme.”

And as for vinyl itself, Hawkes is obviously delighted by its popularity. “It pleases me when 16 and 17 year old clients come in, some of them still at school, and talk enthusiastically about vinyl. I think they find downloads dull and boring by comparison, which is why I tell my clients that I also believe that vinyl will even outlast CD, it just has no rival.” ●

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**90 Patsy Cline**  
Sweet Dreams:  
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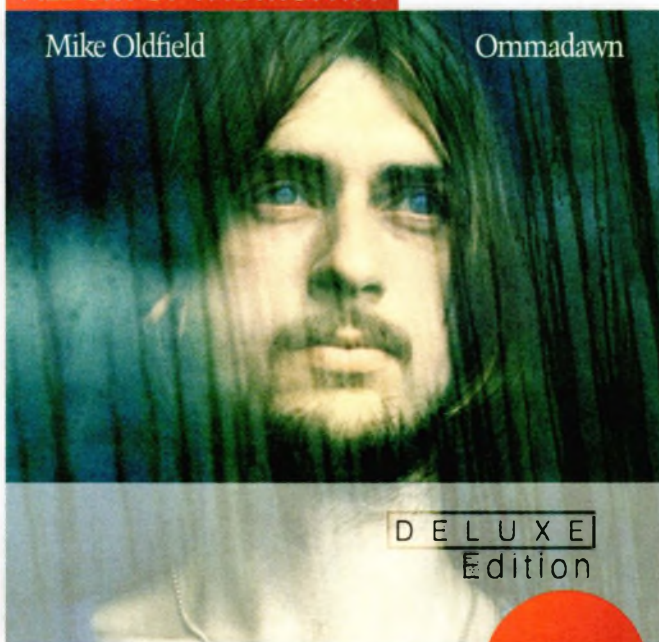


**91 Taj Mahal**  
The Natch'l  
Blues

# Music reviews

Hi-Fi Choice's pick of the latest high-quality music releases

## ALBUM OF THE MONTH



**Mike Oldfield**  
Hergest Ridge and Ommadawn  
mercuryrecords.co.uk  
Hergest Ridge ★★★★★ Ommadawn ★★★★★



Mercury

CD

**FOR MOST SERIOUS ARTISTS,** the debut composition is the first step on a steep learning curve. An exercise in the exploration of still only half-formed ideas, which will be refined and developed in later, more mature works.

Mike Oldfield's problem was that *Tubular Bells*, the album that introduced his musical vision to the world in 1973, so captured the imagination of the record-buying public – not to mention that of hi-fi demonstration salesmen – that it became a shibboleth of such heft that it effectively closed many ears to what came next.

*Hergest Ridge*, released a year after *Bells*, is a similarly constructed multi-tracked suite in two parts, but found Oldfield already leaving behind some of the clunkier moments of his multi-platinum debut.

Conceived as a celebration of the English pastoral landscape, in parts the work exudes a wonderful melodic serenity. In others it is genuinely avant-garde in a way that today we would probably call 'New Age'. There are obvious parallels with *Tubular Bells* in the structure and the manner in which Oldfield clusters his guitar notes, but the rockier movements are more assured and the growth in his compositional skills and self-confidence is palpable.

That ongoing development and growing confidence are even more in evidence on 1975's *Ommadawn*. On one level, it was the third part in a trilogy, in that it retained the structure of a lengthy suite, divided into two 20-minute parts to suit the medium of vinyl. Yet, Oldfield's ambition here is both far greater and better

realised. Beautifully paced and genuinely affecting, *Ommadawn* unfurls slowly – even majestically – to display a panoply of different and contrasting moods, enhanced by the influence of folk styles from eastern Europe and the Celtic world and the infiltration of west-African rhythms. His guitar-playing, on both electric and acoustic instruments, has advanced, too, creating both sharp glissandos of notes and a shimmering, textural haze.

All these years on, you can hear traces of the origins of ethno-fusion, new age, ambient and trance music in a work that may well stand as Oldfield's finest hour

**“*Tubular Bells* became a shibboleth of such heft that it effectively closed many ears to what came next.”**

and which, thanks to the cash-ringing clamour of those ruddy *Bells*, has never quite been given the recognition it deserves.

Each album comes as a double CD, one disc containing the original 1970's mix, and the other showcasing Oldfield's 2010 digital stereo retooling, while a third disc in DVD format features the composer's new 5.1 surround sound mixes.

This makes for a fascinating contrast with the 5.1 versions, in particular adding hugely to the clarity of each individual instrument. On *Hergest Ridge*, for example, the work's main vocal melody emerges to the fore of the mix to reveal a tune of haunting beauty that sounds like the Cranberries drew on it heavily 20 years later for *Linger*, which gave them an international Number One.

On *Ommadawn*, the panoramic surround is even more impressive in the 5.1 channel mix, with the

contributions of the Chieftains' Paddy Moloney and the African drummers of Jabula splendidly enhanced. The fact that Oldfield was responsible for both the original production more than 30 years ago and the sharp new digital mixes, have given him an intuitive understanding and empathy for the original work that is so very rare in such remastering exercises. **MP**

**Standout tracks:**

The new 5:1 mixes of both *Ommadawn* and *Hergest Ridge*.





## Patsy Cline

*Sweet Dreams: The Complete Decca Studio Masters 1960-63*

www.interscope.com

★★★★★

Geffen Records

CD

**Tragically killed** in a plane crash at the young age of 30, these recordings made with producer Owen Bradley over the last three years of Cline's life, not only represent the crown jewels in her repertoire, but epitomise all that was best about 'the Nashville sound', which at the time was dragging country music out of its hillbilly roots and into the mainstream of popular music.

Instead of getting in the way of Cline's emotionally expressive voice, Bradley's smooth arrangements on some wonderfully swaying country-pop melodies highlight her torch-singing power in exemplary fashion, adding a silky touch of sophistication without ever losing her earthy, honky-tonk angel appeal. It's all magnificent stuff, for sure.

Everybody, whether fan of Patsy Cline or not, will recognise at least half a dozen of these 51 songs. But you've never heard them sound so warm and engrossing, as the remastering emphasises not only Cline's vocal power, but the class of Nashville's A-team sessioners and the astonishing refinement of Bradley's skillful and measured arrangements. **NW**

**Standout tracks:**

Crazy; I Fall To Pieces; Sweet Dreams



## Oasis

*Time Flies: 1994-2010*

oasisinet.com

★★★★★ **Big Brother Recordings**

2-CD deluxe edition with DVD

### THE CHRONOLOGICAL

sequence across two discs of all 26 Oasis singles emphasises how irrepressible the band sounded 15 years ago on *Live Forever* and *Wonderwall* – and it also exposes how by the time of *I'm Outta Time* and *Falling Down*, Noel Gallagher's Beatles fixation had fallen foul of the law of diminishing returns. The DVD with the deluxe edition features videos for every single and a film of the group's final live show last year.

You have to hand it to 'band ambassador' Noel Gallagher – few have ever used digital techniques so cleverly to evoke the simple, four-track analogue sounds Sir George Martin used to conjure with the Beatles at Abbey Road. **NW**

**Standout tracks:**

Wonderwall; Don't Look Back In Anger



## Isaac Hayes

*Shaft*

umusic.com

★★★★★ **Stax/Universal**

CD

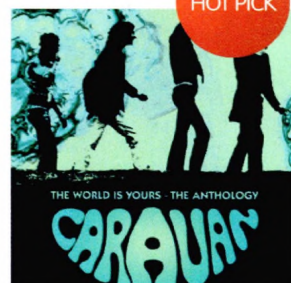
### LIKE MOST 'BLAXPLOITATION'

films, the *Shaft* movie has not aged well – but the soundtrack still stands as one of the supreme monuments in 1970s soul. The combination of funk rhythms, wah-wah guitar and Hayes' brilliant string and horn arrangements are hugely influential. Without Hayes and *Shaft*, the likes of Marvin Gaye and Curtis Mayfield might never have been inspired to record their best work.

This is how 24-bit remastering should sound. From those first famous hi-hat cymbal notes at the opening of the main theme to the romantic horns on the sensual *Shaft Strikes Again*, every semi-tone quivers with pin-dropping clarity, enhancing Hayes' original genius. **NW**

**Standout tracks:**

Theme From Shaft; Early Sunday Morning; Do Your Thing



## Caravan

*The World Is Yours: The Anthology*

1968-1976

caravan-info.co.uk

★★★★★

Linn

4-CD box set

**THE CARAVAN** catalogue boasts around forty albums, their entire career pivoting on the prog/jazz/pop genius of *If I Could Do It All Over Again* and *In The Land Of Grey And Pink*, both represented here on this new digitally remastered set.

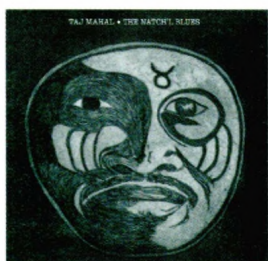
Alongside the classic album excerpts, are a feast of unreleased studio recordings, album tracks, single mixes, out-takes, unreleased live material and BBC cuts.

The Canterbury quintet favoured long jazzy improvisations with keyboards, woodwinds and percussion to the fore. Mark Powell has updated the sound especially on *For Richard* and *Nine Feet Underground*. **MP**

**Standout tracks:** Magic Man; For Richard; In The Land Of Grey & Pink

## AUDIOPHILE VINYL

**Taj Mahal** *The Natch'l Blues* purepleasurerecords.com



★★★★★

Columbia

180g vinyl

**RECORDED IN 1968**, Mahal's second album continued his revitalisation of the delta blues, with the help of funky bassist Gary Gilmore and the

incisive guitar of JE Davis (among others). It sounds like an authentic version of what UK bands were doing earlier in the decade, with the added bonus of TM doing his best Otis Redding on two numbers.

To understand the importance of this ground-breaking album, one must first know something about the artiste himself. Brought up in Harlem, New York, Mahal (real name Henry Fredericks) was surrounded by music. His mother sang in a gospel choir, while his father was a West Indian jazz arranger and piano player. As a result of this parental influence,

Mahal soon recognised the all-important differences between popular music of the day and the music that was played at home.

As a result, his own sound (as this album so effectively demonstrates), is warm and slightly soft. It also reflects its era, but there's plenty of detail on offer and those fabulous bass lines stand out loud and proud. The recording is also pretty clean, which is more than you can say of many sixties albums. **JK**  
**Standout track:** The Cuckoo



**Stravinsky**  
Tender Prey

marinskylabel.com

★★★★

**Marinsky**

SACD/CD 5.1/2-channel hybrid



**Brahms**  
Symphony No 4

lso.co.uk

★★★★

**LSO Live**

SACD/CD PCM/DSD hybrid disc



**Deutsche Elektronische Musik**

souljazzrecords.co.uk

★★★★

**Soul Jazz Records**

2-CD set

**FROM THE SPIKEY** end of the Stravinsky oeuvre, *Les Noces* has a highly original dance cantata score, which calls for four pianos, four vocalists and a strong percussion section.

*Oedipus Rex* dates from a few years later, from when Stravinsky had just moved to France. It is a neo-classical composition, which includes a French narrator, in this case actor Gerard Depardieu.

The programme was recorded live in the magnificent concert hall of the Marinsky (ex-Kirov) Theatre in St Petersburg, in common with other recordings on this label. What the sound lacks in warmth, it more than makes up for in idiomatic drive and passion. **AG**  
**Standout track:**

Scene, The Brides Chamber

**ALTHOUGH A** conventionally structured work (three are sonata-type movements and one a set of variations for the last movement) and with a running time of just 41 minutes, Brahms' final symphonic opus is the most profound and deeply satisfying of the four Brahms symphonies.

LSO is probably London's finest orchestra and Bernard Haitink is always a pleasure to listen to, not least for his measured and intelligent direction. But we didn't respond as deeply to this account as we expected to, thanks to an orchestral sound that was a little grainy and wiry at times, particularly noticeable in a work that is so warm and lyrical. **AG**  
**Standout track:**

Allegro energico e passionato

**KRAUTROCK IS** far too limited an expression to encompass the range of these 24 tracks from 1972-83. As well as the metronomic rhythmic propulsions of Can, NEU!, Tangerine Dream and Harmonia, we get the mystical floating ambiances of Cluster and Popul Vuh and, above all, the flute, sitar and bongo-laden jams true hippie collectives like Amon Düül, Ibliss, Deuter and Between.

This is also the first time most of this has seen a proper mastering console, let alone a CD. The sound sometimes dips when sources were mono, but the whole is larger than its parts and Popul Vuh's *Moog-led Aguirre 1*, in particular, sounds glorious. **MP**

**Standout tracks:**

Between: Devotion; Harmonia: Dino; Popul Vuh: Aguirre 1

**HIGH-RESOLUTION DOWNLOADS**

**Speed Caravan**

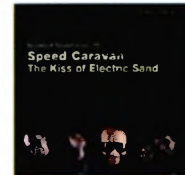
The Kiss Of Electric Sand

bowers-wilkins.co.uk

★★★★★

**B&W**

24-bit/96kHz stereo



**SPEED CARAVAN'S music references**

classic English rock, alongside

Arabic traditions to create a heady – and occasionally delightfully heavy – mix, with absolutely no element of predictability. The band is 'an ethnic fusion collaboration', that is completely free of the pretentious ennui and navel-gazing that usually accompanies the word fusion. **Instead, the music inspires, excites and rocks.**

The recording and production are crisp and ideally suited to the loud and percussion-led instrumentation. The production does not attempt to sweeten the sound, nor mollify it for radio play. The layering in the mix is well-defined and every element maintains its position consistently throughout. This 'album' is a gem. **MS**  
**Standout track:**

Aissa Wah

**Martyn Taylor**

Stepping Stones

linnrecords.com

★★★★★

**Linn Records**

16-bit/44.1kHz stereo



**THIS COMPILATION**

is well worth seeking out if you enjoy the sound of gypsy jazz

guitar. Even the master of the genre, violinist Stephane Grappelli makes an appearance.

This 16-bit/44.1kHz recording does not suffer unduly because it isn't a higher resolution. It still displays splendid clarity, especially on the leader's instrument and on Grappelli's violin, revealing the subtle characteristics that give the playing its distinctive personality. **MS**  
**Standout tracks:**

Johnny & Mary; Sweet Sue

**BLU-RAY AUDIO**

**Trondheim Solistene** Divertimenti 21.musiconline.no



★★★★

**2L**

Disc 1: Linear PCM/DSD audio only CD/SACD compatible 2/5.1 channel. Disc 2: Blu-ray linear PCM 2, 5.1 channel, 24-bit/192kHz

**BRITTEN'S SIMPLE SYMPHONY** and **Bartok's Divertimento For Strings**

are standard fare of the type, namely the light, fresh-sounding and basically simple genre known as 'divertimenti for string orchestra'. The two central pieces by Grazyna Bacewicz and Torje Bjorklund are in keeping with the much more familiar flanking works, providing an unfamiliar range and variety to what would otherwise have been a routine, if enjoyable coupling.

There are no complaints here. This is an immaculately engineered recording, which has a very lively and tactile sound in an open, fresh

acoustic space. In fact, the performances are excellent throughout the set.

The problem is that the plethora of replay options available on this offering seem rather like work in progress. The DTS-HD Master Audio format is redundant in our opinion when Dolby True HD is available, for example. But at least you can play this disc on almost anything that accepts round bits of plastic with holes in the middle. **AG**

**Standout tracks:**

Playful Pizzicato (from Britten's Simple Symphony)

# Glasgow's first house of high end

In the coming months, **Jason Kennedy** will be travelling across the UK to find the best dealer systems imaginable. First stop, Glasgow

**A**ll too often, the part that dealers play in establishing which components combine to make systems that really sing is taken for granted. Yet no one is in a better position to mix and match separates until they find combinations that gel than the men and women at the sharp-end of the business.

Over the next few months, we'll be visiting key dealers around the country to see what they have and, more importantly, hear what they can do. Our first port of call was Glasgow and a visit to the Music Room, which is situated in a beautiful Victorian townhouse and a convenient fifteen minutes from the airport.

The Music Room was started by proprietor Jack Lawson back in 1979, when he discovered that retailers appeared to do rather better out of the business than reviewers! Now he has five demonstration rooms and a treasure trove of largely high-end kit, that includes: Esoteric; Brinkmann; Simon Yorke turntables; ProAc; Grand Prix Audio and Ayre, among other audiophile delights.

He also distributes Zingali speakers, VAC amps and JPS Labs cables, the latter were in most of the systems reviewed here. Jack is more than ably assisted by Bill Armstrong, who comes from a pro-audio background and enjoys playing at serious levels as guys from studios often do. When we visited, they didn't have much in the way of entry-level gear, but Audio Analogue's most affordable electronics are on order – which will bring starting prices at The Music Room down considerably.

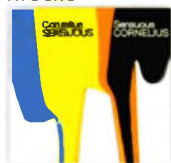
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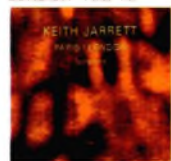
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**GILLIAN WELCH**  
**TIME (THE REVELATOR) CD**



## SYSTEM 1 - MAXIMUM EXPOSURE

**A**s the Music Room is also the UK distributor for Gryphon, it was not surprising to see two Gryphon systems set up in the main demonstration room. The first consisted of range-topping components, including the beautiful Mikado Signature CD player and Colosseum Solo class A monoblocks, each of the latter standing like finely engineered radiators behind a ProAc Carbon Pro 8 loudspeaker. The system sounds spectacular, but at over a hundred grand, it seemed a little excessive for this feature, it also screwed up our sense of perspective when it came to auditioning the Gryphon 'starter' system which isn't exactly inexpensive itself.

Gryphon is a Danish company that does not believe in compromise, its products are designed to look and feel incredible, as well as offer the best sound quality that can be achieved, usually with no holds barred when it comes to cost. Hence the complicated way that the electronics in this system are put together with acrylic blended into machined aluminium to produce a stunning visual result. The Mojo standmount is likewise built to extraordinarily high standards.

Its driver complement consists of an Air Motion Transformer tweeter, a variation on the ribbon theme that has a bandwidth which extends 'well beyond' 38kHz and has very high power handling. The two mid/bass units are heavily modified six-inch (150mm) units with pulp cones in cast chassis and driven by a crossover that includes handmade capacitors and Duelund graphite resistors. The latter are on the back of each speaker and can be changed in order to tune the bass.

### Hidden refinement

The Gryphon Scorpio CD player doesn't look like a disc-spinner, but its superb build hides some pretty refined engineering. The specs barely hint at the work involved, but the use of an Asahi Kasei Microsystems (AKM) multi-bit DAC and 32-bit/192kHz upsampling give you some flavour of Gryphon's highly informed approach. The remote control is a remarkable bit of ergonomic design in itself, rather than being a slab it's a pod that's easy to hold and only has a few key buttons to navigate.

The handset and casework of the partnering Atilla amplifier are near





Triangle Quartets set up to fire across the room with Tannoy Kensington's keeping guard over the Ayre electronics

high-end supports combine carbon fibre, acrylic and stainless steel to elegant and sonically thrilling effect.

**No prisoners**

This system has an uncompromising, take-no-prisoners presentation, so Steely Dan sounds more like a seventies' creation than ever and Cornelius revels in the pristine luxury of contemporary digital technology. It delivers gratifyingly low and superbly articulated bass even in a large room and has the sort of speed and precision that most systems can only dream of. "What makes the Mojo a great system" opines Jack Lawson, "is the sheer presence and tactile, 3D soundstage. Only standmount speakers can do this, but the Mojos don't lose out on bass and high volume." We would have to agree.

Getting Jack to suggest a logical upgrade was not easy, but Gryphon's Mikado Signature CD player, the very stylish player we heard in the bigger Gryphon system, got the nod.

**1 GRYPHON SCORPIO CD PLAYER**

**£6,950**  
gryphon-audio.com

**2 GRYPHON ATILLA INTEGRATED AMP**

**£6,950**  
gryphon-audio.com

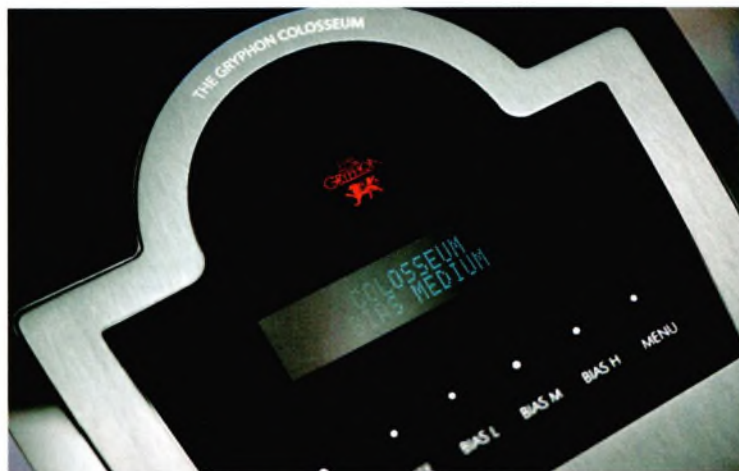
**3 GRYPHON MOJO (SPKR)**

**£11,950**  
gryphon-audio.com

**TOTAL SYSTEM PRICE:**  
**£25,850**



identical to the Scorpio, but in this case contains a dual mono, 200-watt power house, whose output doubles into half the impedance. Both units also have two damped feet at the front and a single spike at the back to sink resonance. The Music Room sited this, as with its other systems, on a Grand Prix Audio stand. These



**SYSTEM 2 - THE POWER AND THE GLORY**

In one of the more grand reception rooms in the house Jack keeps is one of his favourite systems, a pairing that he considers to be so complementary that he harbours suspicions that Revel's chief designer Kevin Voecks might have been involved with the tuning of the recently revived Mark Levinson electronics. Mark Levinson has been in a state of limbo for several years now because the operation was moved across the US to be part of the Harman Speciality Group's operations. It's good to see it back again, few companies offer the engineering and technological depth that you find in Levinson products and few offer the same effortless, yet powerful sound.

**No noise**

For this system, Jack was using the top stereo amplification in the current range – a Reference preamplifier is on the way – and the first and only source component to bear the Mark Levinson name.

The No.512 is an SACD/CD player that uses a buffer to minimise jitter, it's called DDS for direct digital synthesis which refers to the way data is relocked as it leaves the buffer on its way to the DACs.

Levinson's No.326S preamp is a revitalisation of a classic design that we have recently had the pleasure of using in our reference system. It's a seven-input, fully balanced unit with independent input gain control and huge amounts of effort put into keeping out noise, what's more it can operate in mono.

The No.532 is a dual-mono power amplifier with an output of 400 watts and more mass than your average gorilla can heft. Great effort is put into isolating the signal from noise in the mains and to keep the signal path as short as it can be to minimise propagation delay and phase shift.

**Intoxicating**

Revel's Salon2 is the smaller of two floorstanders in the Ultima2 range, but it still stands 135cm-high, the superbly finished cabinet with its sculpted baffle houses six aluminium drivers (three eight-inch bass drivers, a six and a half-inch midbass and a four-inch midrange alongside the tweeter). As ever with Revel designs, build is state of the art and finish as deep and lustrous as you will find.

But it's the sound that counts and in a large room it really flies. Jack describes it as "intoxicating and



The columns behind the Revel Salon2 speakers make them look small but don't let that fool you, even the No.532 power amp looks manageable but that's also an illusion!



beguiling" which it is, but this is not immediately apparent, rather it becomes clear after a little while. You do not want to stop listening, it pulls you in, even a track as well worn as Gillian Welch's *Time the Revelator* is refreshed and made thrilling again.

It is particularly good at giving you large amounts of detail in a musically coherent fashion – the bells on the Cornelius disc reveal so much harmonic structure that they take on a whole new depth and realism.

Asked why he put these components together Jack says that it is "clearly a system", it just gels so well that you don't want to change it. When pressed about how he would improve the system Jack plumped for the Mark Levinson No.53 monoblocks.



**1 MARK LEVINSON 532 POWER AMP**

**£17,000**

[marklevinson.com](http://marklevinson.com)

**2 MARK LEVINSON 512 SACD/CD PLAYER**

**£12,000**

[marklevinson.com](http://marklevinson.com)

**3 MARK LEVINSON 326S PREAMP**

**£8,000**

[marklevinson.com](http://marklevinson.com)

**4 REVEL SALON 2 (SPKR)**

**£17,000**

[revelspeakers.com](http://revelspeakers.com)

**TOTAL SYSTEM PRICE: £54,000**

SYSTEM 3 - PRESENCE AND REFINEMENT

**A**t the time of our visit this was just about the most affordable system that Jack had in stock, he normally keeps the Ayre CX-7e CD player and AX-7e integrated, which would drop the electronics price by more than half, but these were out of stock. Ayre electronics are superbly built examples of the art with sculpted fascias and buttons that have strange, but stylish planetary symbols for the various inputs – thus you have to remember that your CD player is on the comet button and your tuner on the half moon – it certainly makes a change.

**Apodized Ayre**

The C-5xe is Ayre's latest MP (or minimum phase) version, which incorporates an apodizing filter in the same vein as that co-developed by Meridian to eliminate pre-ringing. The Ayre plays CD, SACD and DVD-A/V (audio-only on DVD-V) via a DC-coupled, balanced circuit. The K-5xe and V-5xe are likewise fully balanced, the preamplifier has four line inputs plus a tape loop and the power amp offers 150 watts into eight ohms, a figure that doubles into four ohms – the sign of a very substantial power supply.

The speaker here is the smaller of two floorstanders in Triangle's Genèse range (a Best Buy product in HFC 302. The Quartet is clearly a lot of speaker for the money, with a pair of 6.5-inch (160mm) bass drivers, similarly scaled midrange and a horn tweeter on top. The plinth is a pretty ornate cast alloy affair with a big central spike that's designed to channel energy into the floor plus a further four feet for stability. The Quartet has a usefully high sensitivity of 92dB, so you don't need quite such a large amp as the V-5xe but Jack feels that the sonic match is what really counts.

**Step forward**

Triangle speakers can be on the forward or bright side for some tastes, but this tendency is perfectly

balanced by the silky refinement of the Ayre electronics. The system was set up firing across a room that can't have been more than three-metres wide, but despite the proximity the sound was not in your face or aggressive but had tremendous immediacy. It put plucked guitar on the Cornelius disc right in the room thanks to a strong sense of presence. This was also apparent on the Gillian Welch disc, where the singing and playing completely escape the speakers to form a solid image in the room.

Jack accredits this quality to the speaker, which he tried with electronics from Gryphon and Pathos, before realising that the Ayre was the best match. He thinks that this is because the power transfer of the amplifier is a perfect match for the load of the speaker, but the only way to find this match is by trial and error. The common method of matching power with sensitivity is far too crude in his opinion.

Asked what he would replace to upgrade the system Jack struggled for a while, but eventually plumped for a speaker change to Triangle's Magellan Cello SW2 (£6,999). A speaker that would presumably deliver more of the musical magic on offer from the source, as well as from the amplifiers.



- 1 **AYRE C-5XE (UNIVERSAL)**  
£4,495  
www.ayre.com
- 2 **AYRE K-5XE (PREAMP)**  
£2,495  
www.ayre.com
- 3 **V-5XE (POWER AMP)**  
£3,895  
www.ayre.com
- 4 **TRIANGLE QUARTET**  
£2,495  
www.triangle-fr.com

**TOTAL SYSTEM PRICE:  
£13,380**

The Music Room is an impressive dealership that's well suited to the quality of systems it has on offer. Both Jack and Bill are highly knowledgeable and can save you a lot of time and money if you are looking for outstanding audio.

The systems we heard were all pretty ambitious, but that was a timing thing as much as anything else, usually they can put together systems for considerably less. Of the systems we heard, each

had its strengths, the Ayre/Triangle combination worked supremely well in terms of immediacy and this will suit those who enjoy music's visceral qualities. The Gryphon system will appeal to those who appreciate speed and raw power. The Levinson/Revel should have universal appeal, but there will be those who want a bit more edge in the mix, everyone else will be hooked by its ability to get under your skin. ●

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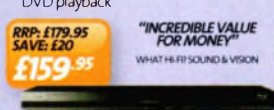
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# Help & advice

We've got the answers to everything you've ever wanted to know about hi-fi and weren't afraid to ask. Email us now at [hifichoice@futurenet.com](mailto:hifichoice@futurenet.com) or write to: **Hi-Fi Choice Q&A, Future Publishing Ltd, 2 Balcombe Street, London NW1 6NW**

## YOUR EXPERTS



### PAUL MESSENGER

**EXPERTISE:** LOUDSPEAKERS

**HAVING WORKED** on both sides of the audio industry for over 30 years, as loudspeaker designer and reviewer, Paul is ideally placed to offer thorough, in-depth analysis of every speaker reviewed, as well as cutting-edge developments in the field.



### JIMMY HUGHES

**EXPERTISE:** SYSTEM OPTIMISATION

**AS EVERY** audiophile knows, there's so much more to getting a system to sing than merely throwing components together. Jimmy Hughes has spent 40 years tweaking and optimising systems, as well as voraciously collecting records.



### RICHARD BLACK

**EXPERTISE:** TECHNOLOGY

**WRITING EXCLUSIVELY** for HFC, Richard brings his experience as a successful musician and recording engineer to bear in our rigorous *Blind-Listening Group Test*. As our technical consultant, Richard is the authority on HFC's test and measurement.



### JON MARKS

**EXPERTISE:** DIY AND VINTAGE KIT

**FORMER EDITOR** of *Hi-Fi World* magazine, Jon has a wealth of reviewing experience, as well as a passion for high-end vintage audio gear. Handy with a soldering iron, Jon also enjoys bringing classics back to life and pitting them against modern gear.



### ALVIN GOLD

**EXPERTISE:** SEASONED REVIEWER

**HAVING WRITTEN** for a huge range of magazines, both internationally and in Britain, Alvin has a very full 30 years of reviewing under his belt. A guru of all component types, he's now extending his expertise by building PCs for audio too.



### JASON KENNEDY

**EXPERTISE:** TURNTABLES

**ANOTHER EDITOR**, Jason opted to become a freelance contributor when he relinquished the helm of HFC after 17 years on the magazine. A hi-fi addict since his twenties, Jason fell for the beauty of vinyl and has never looked back.

## ASK US A QUESTION TODAY!

Our experts are on hand to answer your questions. Whether you're looking for future-proof upgrades, advice or help with your current set-up, our two-channel Einsteins have all the necessary expertise and several hundred years of combined audio knowledge to slake your thirst and support your passion for perfect sound. Email your questions now: [hifichoice@futurenet.com](mailto:hifichoice@futurenet.com)

## QUESTION OF THE MONTH

**Q** I own the Cambridge Audio 840A integrated and 840C CD player. I would love to purchase a set of speakers which will be suitable for this system. I play mainly jazz and R&B. What set of speakers would you recommend under these circumstances?

*Phillip Dlamini, via email*

**A** You don't mention a budget, but we're assuming you will spend about the same amount as your amp and CD player cost you. In that case, ribbon tweeters are within your reach, whether

it's those fitted to XTZ's 99.36 floorstanders, or Roksan's Kandy K2 TR-5 standmounters. Throw dome tweeters into the mix and you can extend your list to floorstanders like Bower and Wilkins' 683 or 684, and Monitor Audio's Silver RX6.



## Best investment for my budget: digital or analogue?

**Q** I have just bought the Olive 4HD, so I was interested to read your review (HFC 333).

Overall, I am very pleased with it and am now looking at the next upgrades for my system, hence a request for your advice.

I have partnered the Olive with an Arcam A85 amp and Bowers and Wilkins CDM 7NT speakers. Budget-wise I am pretty flexible, but was wondering where to spend my money to achieve the best results. Should I go for a separate DAC (Naim or Cyrus, for example), or change the amp and speakers? I'm happy to spend up to £5,000.

*Andrew Prophet, via email*

**A** Malcolm Steward very much enjoyed his time with the Olive, particularly as it cracked the nut on which many ripper/servers break their teeth – musical communication. It will happily dig out the musical essence of any genre stored on its hard drive and we therefore think that you'd be best off sinking your cash into improving your amplification and speakers.



Serving Olives: the impressive 4HD

The Arcam A85 was a solid amplifier when first released, but it would be very easily bettered by either an integrated or pre/power combo at £2,000 to £3,000. Depending on which speakers you buy, when it comes to integrations you might want to shortlist brands such as Unison Research (for a more valve-like character), Moon (with its i5.3RS), Briston (though they may overstretch your budget if bought new) and ATC. The latter's CA-2 preamp and P1 power amp are very good, too. On a tighter budget, Cambridge Audio's 840E/840W are worthy of consideration, as are Naim's NAC 152 XS and NAP 155 XS.

In addition to the above, don't rule out Primare's Pre30 and Roksan's Caspian M Series-1 preamplifier, either of them matched with an appropriate power amp. The benefit with a two-box approach is, of course, bi-amping at a

later stage in the upgrade process. As you're already a fan of Bowers and Wilkins, its CM9 is likely to please and would certainly provide a step up from your current CDM7. If you could wring every last penny out of your bank manager, you might want to consider the 805 Diamond standmounter with its Diamond tweeter. Whether trading a floorstander's bass for superb midrange and treble clarity is a price you'd be prepared to pay, only you can answer. If the answer is yes, Monitor Audio's less expensive PL 100 would also be a fine choice. If it's no, GamuT's Phi5 will impress, as will the Response D18 from ProAc, and A6 from Spendor.

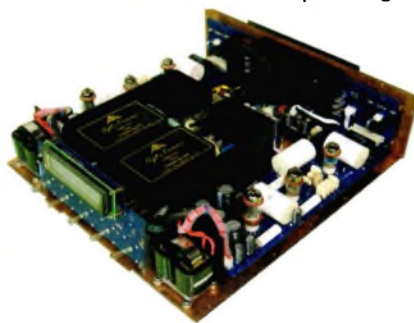
**Which phono stage for maximum flexibility?**

**Q** I have a very large collection of records of various types, and I'm having a hard time narrowing down which phono stage to use for playing and archiving them all. My collection includes lots of 78s, some 16rpm discs and other assorted oddities and has so far only been playable through an assortment of dedicated, individual phono stages.

I'm at the stage now where I'd really like to just cut down on all the boxes and wiring and have, ideally, a single phono stage to rule them all. What would your recommendations be, given that I'm very flexible on budget if it will get me what I want?

**Edwin, via email**

**All curves: AMR's flexible PH-77 phono stage**



**A** It's going to be virtually impossible to whittle the choices down to a single box in what is already a rarified field, but one contender which springs immediately to mind is AMR's PH-77. At £8,000, it's not what you might call cheap, but it boasts 22 different EQ curves (Decca, Columbia and of course RIAA amongst them) as well as a 24-bit/96kHz analogue-to-digital converter for archival purposes, assuming your transfers will be made into the digital domain for hard-drive or CD storage.

Lyngdorf's Millenium ADC is another 24/96 converter, which can be bought with an optional phono stage. While its equalisation options are more limited (seven aside from RIAA), it's rather cheaper at £5,000. For discs which were cut to curves well off the beaten track, you might still need to rely on very specialist equipment, but the sound quality provided by either the AMR or Lyngdorf will certainly be very good indeed.

**Out with the old: which new CD player?**

**Q** I have an all-Linn system which I've built up over the years, and generally have been very happy with. The problem is, my old Ikemi has finally kicked the bucket – it experienced a completely terminal liaison with a plant stand during a hasty house move. Linn obviously no longer makes CD players and I have to say my interest in anything computer-related or server-based is, frankly, nil: if it ain't a disc, I'm not interested (yet).

I always felt my system lacked the last degree of speed and impact, and that it could have benefited from a larger soundstage. With roughly £2,000 clenched in my sweaty paws, which players do you think would help get me a faster, more transparent sound?

**evilbobgalaxylord, via email**

**A** The Ikemi was a fine player in its day, but Creek's £1,400 Destiny CD player will certainly give you an improvement in transparency and dynamics. Whether it manages as enthusiastic and involving a rendition as your late, lamented Linn, only your ears can judge.

Progressively higher up the spending scale are Naim's CD5 XS, Cyrus's CD8SE 2010 (with optional PSX-R power supply) and a couple of consummate Italian performers: Unison Research's Unico CDE and Pathos' Digit. Like the Naim, the last two are very musical, but would take you above the £2,000 mark and the latter's idiosyncratic footprint will make it impossible to house in some racks which lack sufficient depth.

**The Italian job from Pathos**



**THE HI-FI CHOICE GUIDE TO: CHOOSING THE RIGHT LOUDSPEAKER**



**PICKING A LOUDSPEAKER** to achieve a perfect fit in your system and room isn't a trivial task: perhaps more than any other components, loudspeakers require auditioning in your own system and room.

When it comes to problem rooms, we've always found a handy axiom is not to get over-ambitious with loudspeaker upgrades – bigger is not necessarily better. For example, standmounters not only offer better imaging than the bulk of floorstanders, but can be allied to a subwoofer (or two) to give the best overall sound whilst avoiding major room interactions.

Different listeners tend to have different priorities: for example, single full-range drivers offer unparalleled phase and tonal integrity, as well as holographic soundstaging, albeit at the expense of frequency extension. Panels like Magneplanar's 1.6 are blissfully free of cabinet coloration, but can be power-hungry and fussy about positioning. Bass-freaks and those with bat-like hearing will need a multi-way speaker, with potential shortcomings in phase linearity, tonal consistency and ease of drive. However long and winding your path to nirvana, don't lose heart – your perfect transducer is out there! ●

# Minitest

We examine four of the best phono stages to make your vinyl experience the best it can be

## Firestone Audio Korora

PRICE: £295 CONTACT: 0845 345 1550  
WEBSITE: FIRESTONE-AUDIO.COM

**FIRESTONE'S RANGE** of tiny boxes covers most audio functions and though this is the only phono model, it seems to have plenty of options that make it quite the all-rounder. Some of these require access to the inside to flick board-mounted switches, which makes something of a nonsense of the rear-panel warning about the risk of electric shock. Mind you, even with the supply disconnected, there is still the theoretical possibility of an electric tickle from the internal batteries – yes, this is a battery-powered product. That has some clear advantages when one is dealing with such tiny and vulnerable signals produced by cartridges. You can, however, use the supplied wall-wart while listening.

Gain is applied by op-amps, and not particularly fast ones, which limit output level at high frequencies, though this is probably academic with any real-world LP. What does slightly concern us is the rather high minimum gain, which may cause overload with MM cartridges when playing very 'hot' LPs.

Indeed, we did see signs of that with a couple of discs and on the whole, we'd consider this phono stage as best suited to MC cartridges, including 'high output' ones which will suit the lowest gain setting well. The sound is a shade on the bright side, but it's very lively and engaging and we particularly enjoyed the sound with well-recorded dance music – the epitome of foot-tapping! Bass is well controlled, perhaps just a shade lean, but rhythmic and powerful and detail is good.

**VERDICT** BEST SUITED to MC cartridges, this unit offers forthright and direct sound that's energetic and involving, with excellent rhythm: a little bright tonally.



## Lehmann Audio Black Cube Statement

PRICE: £335 CONTACT: 01235 511166  
WEBSITE: LEHMANNAUDIO.DE

**THERE SEEMS TO BE** a double misnomer here – for a start the shape is a low-profile square, not a cube, and 'Statement' seems odd for the bottom of the range. But no matter, for the aim is clear enough: this is a no-nonsense budget audiophile product, unusually but practically designed with inputs at one end and outputs on the opposite one, with gain suitable for moving magnet or moving coil cartridges selectable via bottom-mounted switches which also give some choice of loading resistance.

With the use of an internal jumper, gain is selectable in 10dB steps, which should cater for practically any cartridge, while the maximum output of six volts ensures adequate headroom as long as the gain is set sensibly. Gain is provided by op-amps, with good-quality passive components of the through-hole variety, including fast rectifier diodes (the inevitable wall-wart supplies AC to the main module).

We found this unit something of a winner with good-quality MM cartridges. It's good with MCs too, but less obviously so and its noise performance isn't quite the best. With MM types, though, it is very clear sounding and beautifully detailed. It is tonally neutral with any cartridge type, its treble notably sweet with no sense of constriction or rolloff, while the bass is solid but never overblown. High-end MM cartridges can be very fine devices and this would appear to be the ideal device to partner them.

**VERDICT** ALTHOUGH PERFORMANCE with MC cartridges is merely good, this phono amp is a very distinguished performer with an MM source, offering excellent detail and tonality.



## NAD PP3 Digital

PRICE: £100 CONTACT: 01279 501111  
WEBSITE: NADELECTRONICS.COM

**NAD'S PP2** is a long-established leader among super-budget phono stages, but this one is something a little different, offering as it does a digital output. At what is still a very affordable price, it actually has a very attractive feature set, with both MM and MC inputs and even a line input (for digitising and feeding to your computer). The MM and MC stages are separate circuits. Digitising is carried out at the usual USB maximum of 16-bit/48kHz and if you don't have suitable software already installed on your computer, you can use the supplied 'VinylStudio Lite' for the basics. Options don't stretch to adjustable loading, but the standard value of 47k applies to the MM input, with about 70 ohms at the MC input. Gain is relatively low at 35dB (MM) and 55dB (MC), which may require your volume control to be wound up a bit but will certainly avoid overload. Components are all surface-mounted, a necessity given the number of them in the small space.

Despite the low price, this unit turned out to have the lowest noise of all four in this group when fed with an MC cartridge. That may well account for its particularly detailed sound with an MC source, which makes it very informative. It presents the detail in a rather understated way, which may be something of a question of taste: we took to it at once but some listeners may find it a bit deadpan and undemonstrative beside, for instance, the Firestone.

MM cartridges give a slightly less detailed sound, but the basically laid back character remains. Tonally the unit is even, with very slightly dry treble, but well-extended bass. The digital output works well, but beware hum loops with desktop computers.

**VERDICT** **A DECENT PHONO STAGE at £100 would be recommendable, but this is more than decent and the addition of digital output makes it a very attractive proposition.**



## Pro-Ject Tube Box SE II

PRICE: £435 CONTACT: 01235 511166  
WEBSITE: PROJECT-AUDIO.COM

**IT'S GREAT** that valve audio equipment continues to be produced and at attractive prices, too. Pro-Ject is to be commended on managing to squeeze a couple of small-signal valves (12AX7, since you ask) into its delightful 'Box Series' and on keeping things affordable at the same time. This isn't a pure valve amplifier, though, as op-amps assist along the way and, in fact, most of the non-valve parts are modern surface-mounted types. Gain is sensibly set at 40 and 60dB for MM and MC respectively, while the maximum output is higher than most at ten volts, giving a very good degree of headroom. Gain is selected by a push switch at the rear, while another one switches a rumble filter in or out. Loading (both resistance and capacitance) is adjustable by using the provided jumpers on terminals at the rear.

This seemed to be the most consistent of the group between the two cartridge types, with a discernible character – and a likeable one at that. The sound is detailed, extended at both frequency extremes and well controlled and imaged. But above all that it is very much 'of a piece', in a way that not all audio equipment seems to manage. Everything is kept in utterly plausible relation to everything else in the mix (always assuming a good LP, of course) and the result is some very solid and 'present' musicians right in front of you. We felt as strongly with vintage recordings of classical symphonies, as with more recent audiophile jazz cuts, so overall this is a very convincing and persuasive bit of kit. ●

**VERDICT** **THE BIG PICTURE is the most evident thing here, but the finer details are there too, admirably scaled and presented in their proper time and place. A delightful listen!**



Now that so few amps include a phono input, the standalone phono stage is a common sight and indeed it has many advantages over the built-in variety. For one thing, keeping it remote from

mains transformers is good news and the near-invariable use of a wall-wart supply with no mains earth achieves that and avoids ground loops, too. However, for lowest hum the phono

stage should be kept clear of other equipment. It's also important to ensure it is set correctly if there are options for gain and loading, to minimise noise but also to avoid overload.

It's a breeze to buy high-end gear at [www.coolgales.com](http://www.coolgales.com).



**Clearaudio Innovation Wood**  
turntable, £6250

With mag bearing, speed control. "A superb way of playing vinyl that never draws attention to itself." (*Hi-Fi World*) **ON DEM**



**Transfiguration Orpheus L**  
cartridge, £3400

New 1 Ohm internal impedance version. "Totally natural rendition of music." (*Hi-Fi News*) **ON DEM**



**Graham Phantom II**  
tonearm, £3550

Interchangeable armtubes. "A masterpiece of craftsmanship and design savvy." (*The Absolute Sound*) **ON DEM**



**Scheu Laufwerk 2** turntable, £4350

Massive 80 mm platter, Papst motor. "Reference quality...reference quality looks." (TNTAudio.com) **ON DEM**



**Zyx R-100 Fuji**  
cartridge, £1450

High-purity crystal copper coils. Supremely lucid, precise, transparent.



**SME V** tonearm, £2180

The all-time classic. "Perhaps the last great flowering of the tonearm designer's art." (*Hi-Fi News*) **ON DEM**



**Michell Gyro SE** turntable, £1135

The classic John Michell design. "Should appeal to anyone looking for a high-end deck." (*Hi-Fi News*)



**Lyra Delos** cartridge, £895

Replaces Argo i. A new standard for mid-range low-output moving coils. **ON DEM**



**Clearaudio Unify** tonearm, £1360

Phenomenal unipivot, available in carbon-fibre and wood versions, 9, 10, 12, and 14 inch lengths.



**Pro-Ject Xpression III** turntable, £435

Gloss black base, acrylic platter. "Better imaging, better ambience and dynamics." (*Hi-Fi News*)



**Sumiko Blue Point Special EVO III**  
cartridge, £239

A favourite high-output moving coil. "A big helping of moving-coil goodness." (*The Absolute Sound*)



**Thomas Schick** tonearm, £995

"The question is no longer *Will this stand alongside my other, more expensive tonearms?* but, rather, *Do I really need more than this?*" (*Stereophile*) **ON DEM**

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**Keith Monks Omni Mk VII** record cleaning machine, £3295

Cleans all size records. "If you're looking for the best, well, here it is." (*Stereophile*)



**Aesthetix Rhea** phono stage, £3900

Ten valve design. "A sense of palpability and immediacy that recalls the magic of live music." (*The Absolute Sound*) **ON DEM**



**Eclipse TD-712z Mk II** speakers, £5295

Now available in piano black. "More life-like and cohesive than just about anything you can buy." (*What Hi-Fi?*) **ON DEM**



**Loricraft PRC3** record cleaning machine, £1395

The standard for serious vinylphiles. "Even brand new, sealed records benefit." (*PositiveFeedback.com*)



**Leema Acoustics Agena** phono stage, £2995

Reference unit with two inputs, fully adjustable. Integral DAC with USB port. **ON DEM**



**Esoteric X-05** SACD/CD player, £4495

Awesome one-box unit. "There aren't enough superlatives to describe this machine." (*The Absolute Sound*) **ON DEM**



**VPI 16.5** record cleaning machine, £575

Our most popular budget unit. "An essential component." (*Hi-Fi+*)



**Whest PS.30RDT** phono stage, £2799

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Above: Cambridge Audio Azur 840A amplifier

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### KIMBER D-60 digital

interconnect 0.5 metre, hyper-pure silver, Ultraplate phonos. A superb cable that ensures a clean and clear, sweet and natural sound. Boxed as new in hardcase, (£240) £120 ono, Musical Fidelity KW DM-25 DAC,

mint, boxed (bought new last year, little use, fantastic sounding DAC). Valve and solid state Class A output S (£2,000) £600 ono. ATC SCM50 ASL. active towers in walnut (only six months old, absolutely mint, barely run in). Class A amps (amazing sound, superlative build), boxes etc. (£9,500) £5,500. 07876 705266 (Huddersfield).

### MARANTZ MA500

mono blocks x 4, 380 watts (superb sound) mint condition, boxed with manuals £380. Kingsound Queens Electro Static Speakers (six months old). (£2,000) £950. 02380 224003 (Southampton).

### KEFRDM2 speakers (cherry,

excellent, original boxes) £395. MFX10D tube buffer £85, Ixos Gamma XHA806 RCA0.5 metre pair £20, QED Qorum Reference speaker cable (terminated) 2x 4 metres £35.

01684 290581 (West Midlands).

### LIVING VOICE OBX-R

speakers (premium Yew finish). Outboard crossovers. Includes Townshend Audio Isolda DCT 4x 1 metre cable and original packaging. Immaculate condition. £2,200. 01737 246968 or [deakin04@btinternet.com](mailto:deakin04@btinternet.com) (Surrey).

**BUYING TIPS** **BUYING SECOND-HAND** can be a great way to pick up a bargain. A formerly expensive second-hand component might well prove a better long-term bet than a brand-new product if the price is right. **DO SOME RESEARCH** on which brands have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a dealer, you're unlikely to get any warranty, so it's up to you to ensure the fitness of any gear that you buy. **USUALLY**, speakers should be less prone to breakdown than amps, and amps should be more reliable than CD players. But any abused component could be trouble – have a proper demo and judge the seller as well as the goods!



**QUAD 24-VALVE** preamp, 2x Quad 11 40-valve monoblocs. Superb condition, boxed with instruction books. £2,500. **01202 481386 (Dorset).**

**ROTEL RCD-06** CD player (£350) £175, boxed and mint in black (See pics at hifi-forsale.co.uk). **01384 412234 or 07984 576531 (West Midlands).**

**QED QONDUIT MDH2** two-way mains conditioner (£150) £75, QED Qunex 3 interconnect one-metre (£50) £25, QED Performance digital cable, one-metre (£30) £15. Free postage! All boxed as new. **01384 412234 (West Midlands).**

**KIMBER FOUR** pair speaker cables, 2x 3 metres £25, Atacama speaker stands 16-inch high (black) £30, Apollo speaker stands 24-inch high, bronze £25. **024 76 711668 (Coventry).**

**RUARK CL20** floorstanders, in very good condition, five-star reviewed. Approx seven years old. Six-ohms/87 decibel sensitivity. (£1,650) £525. **07896 206056 (Sussex).**

**THE CHORD COMPANY** Chameleon Silver Plus, one-metre £60, Nordost Super Flatline Gold Mk2, two metres, bi-amp/bi-wire £90, Kimber Silver Streak0.5-metre £90. All boxed, **01482887409 (East Yorkshire).**

**SONY MDR-CD1700** headphone. Musical sound is outstanding. Excellent condition. (£200) £120. **01707 657801 (Herts).**

**TOTEM FLOORSTANDING** loudspeakers in cherry. Includes standard and custom-made granite plinths. Still under warranty. Excellent condition. (£1,695) £795. **07725 072878 or jason-watson@sky.com (Leicestershire).**

**PURE EVOKE 1XT** in cherry wood, DAB radio, boxed, £40. Marantz CD63 Mk1 1K1 Signature CD player, boxed, £150. Both perfect working order. Monitor Audio Monitor 3 speakers, £80 (slight damage). Ecosse MS2.3 speaker cable, £60. **07939 588777 (East Yorkshire).**

**NAKAMICHI CR-7E** cassette deck. Stored from new, never used and in original

box. £995, IsoTek Titan power conditioner (silver) with six-way Titan Multilink, professionally hardwired with 1.25-metre Acrolink 6N power cord, £1,500, IsoTek Orion four-way mains filter (silver), as new, £250. (Day) **01252 620644 or (eve) 01962 711800 (Hampshire).**

**AUDIOLAB ORIGINAL** British Q & P, F&D Serials. No remote. Local drop off or collection offered. £625. **07900 603525 (Leeds)**

**MONITOR AUDIO RS6** speakers, (cherry), £350. **07940 659384. (East Sussex).**

**WANTED:** Top quality hi-fi separates and complete systems: Naim, Linn, Cyrus, Meridian, Arcam, etc. Fast, friendly response and willing to travel/pay cash. **0781 5892458 (Essex).**

**CASTLE CONWAY 3** loudspeakers in mahogany. Excellent condition, £275. **01253 891520 (Lancashire).**

**REGA PLANAR 3** turntable, RB300 arm and Elys cartridge. Pale blue deck, excellent condition, 14 years old. Can send photos. £300. **01158 549677 (Nottingham).**

**RUSS ANDREWS** Silencer, three for £100, Super purifier with Hubble port attachment, £220. **01902 884694 (Dudley).**

**AVID VOLVERE** turntable (black), fitted with SME IV arm and Dynavector DV20 MC cart and EAR 834p phono stage. All boxed, as new, £3,200. **07850 979375 (Norfolk).**

**BOWERS AND WILKINS** loudspeakers in black ash: 2x 600 floorstanders, 1x CC6 centre channel, 2x DS6 dipole surrounds, 1x ASW 1000 subwoofer. £300. **01255 553774 (Essex).**

**CYRUS 6VS2** amplifier, Cyrus CD6S CD players. Both one year old. Boxed, in perfect condition, (£1,350) £700. **01384 412234 or leet2009@hotmail.co.uk (West Midlands).**

**NAIM CDX**, VGC, light use. Includes remote, manuals and packaging. £750. **01276 503994 or andyuk777@yahoo.co.uk (Surrey).**

**CEC DAIN** state-of-the-art 15-kilogram high-end DAC, separate word, bit, master

clock and audio data input and Toslink inputs. Balanced and unbalanced outs (www.cec-international.de). Seven months old, boxed, as new, (£2,800) £1,749. **07777 628426 (Bristol).**

**MICHELL GYRODEC**, AC motor, clear lid, black acrylic base. Rega arm plate including de-coupling upgrade. Great condition, £650. **0121 704 1188 or boballen@sky.com (Solihull).**

**SUGDEN A21AL** Class A series two-line amplifier and series 2 CD21, plus audio controls, hand built, titanium finished, matched pair. Boxed, excellent, as new. £1,900 **01527 876514 or b2bc@btinternet.com (Worcestershire).**

**AUDIOLAB 8000Q**/Audiolab PX pre and power amps. British made, in very good condition with original boxes. Upgrade results in sale for £450. **01778 424327 (South Lincs).**

**ATACAMA LOUDSPEAKER** stand, (black). 30 centimetres high. Spikes included. £30. **01245 264248 (Essex).**

**PS AUDIO** Power Plant Premiere: Award winning AC mains regenerator that converts poor incoming AC to pure 230V AC. New, boxed, upgraded model. This is not a passive filter, but a mains waveform re-builder (£2,000) £1,100. **07859 388167 (London).**

**AUDIOLAB 8000A** amp (1988), mint. Denon DR-M20 tape deck, VGC. Both black, boxed, with manual. Monitor Audio R252 loudspeakers (black). **01524 34627 (Lancs).**

**KUDOS CARDEA C10**, cherry wood standmounts, boxed. (£2,400). £1,400. **07899 721899 (London).**

**ROTEL RAO6** stereo amp, Marantz CD6002 CD player, Musical Fidelity loudspeakers (£1,475) £775. Will separate, boxed as new. **01684 295781 (Gloucestershire).**

**KENWOOD KA550** amp £30, Naim Audio tuner £30, Rotel RP1000 deck £30. **01795 473934 (Kent).**

**PATHOS CLASSIC** One Mk 3 hybrid amp, 12 months old. Mint condition. Boxed with remote and manual. Upgrade forces sale £1,650. **01656 782523 (Wales).**

**MARANTZ SA11-S2** SACD player with warranty and boxes £2,300, Shunyata Hydra 2 £275, Diamond-back cables £100 each. **07810 434589 (Hants).**

**AUDIOLAB 8000A** amp £85, Cyrus CD 8x CD player, mint, unused £495, Rega turntable and arm (25 years old) £75. **01986 894424 (Suffolk).**

**SONY TA-E1** preamp and Denon PRA-51 preamp, **07903 169080 (Harrow).**

**MICHELL ARGO** preamp, boxed £200, Miller and

Kriesel V125 active 12-inch sub £200, Exposure Super 8 power amp £200, MS 25i speakers (beech) £35, NAD 3020 preamp £20. **01722 334694 (Wiltshire).**

**MARANTZ 6000KI** Signature CD player. Marantz 6010 K1 Signature amp, Wharfedale 8.1 speakers. Good condition with leads and interconnects. **01722 503303 (Wiltshire).**

**THE CHORD COMPANY** Carnival Silver Screen bi-wired and terminated speakers cables, mint (£90) £45. **07729 600847 (West Sussex).**

**PIONEER PL1000** record deck £450, Kenwood DM3090 mini-disc £60, Technics SLP 770 CD £65, Project Debut II speed box phono 78, adaptor £120. **01708 457691 (Essex).**

**RUARK CL20** floorstanders, approx seven years old. Six ohms/87dB sensitivity. (£1,650) £575. **07896 206056 (Sussex).**

**LEEMA ANTILA** CD player £1,400, Vecteur 6-2 amplifier 2x 160 RMS £800, Avalon NP 2.0 loudspeakers (slight damage to one cabinet) £800. **07811 7 38295 or 028914 73795 or Sara.mckinty@hotmail.co.uk (Northern Ireland).**

**RUSS ANDREWS** purifier block with one-metre reference powercord, Super purifier plus three silencers. £700. **01902 884694 (Dudley).**

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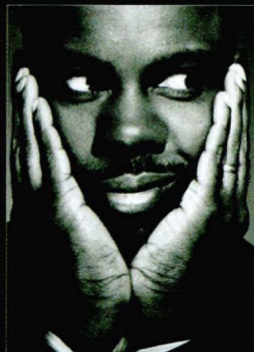
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# Hi-Fi Choice

## Buyer's Guide



Welcome to the *Hi-Fi Choice Buyer's Guide* – the ultimate directory to the very best high-performance hi-fi gear that you can buy. Here, you'll find our favourite current products listed under easy-to-use categories, with up-to-date pricing and trustworthy verdicts.

### Reviews you can trust

*Hi-Fi Choice* test results are the most reliable in the business. We employ the UK's most respected hi-fi journalists and use the most stringent techniques to ensure our ratings are the ones you can trust. All the equipment we rate most highly is contained within these pages, from CD and vinyl to the latest disc players, amplifiers, tuners and loudspeakers.

### Reviews online

We've also included *techradar* listings where our reviews appear online.

To access selected *Hi-Fi Choice* reviews, simply type: [techradar.com/](http://techradar.com/) into your browser, followed by the six-digit number printed in the first column of our *Buyer's Guide*.

### How to use this guide

The *Hi-Fi Choice Buyer's Guide* is the best way to make a shortlist of components to audition. Pick the ones that best suit your taste and budget, then consult our *Dealer Classified* section to find specialist outlets where you can try them with your favourite music and test discs.

## THIS ISSUE'S HIGHLIGHT

**THE LINN UPHORIK** phono stage is a must-have tool for LP lovers. Micro-switches customise the Linn to suit your choice of cartridge, with inputs for both MM and MC.

It reproduces your beloved vinyl with crisp, lucid sound and the results are an amazing, magical experience. Find out more at [Linn.co.uk](http://Linn.co.uk)



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Badge	Product	Price	Comments							Issue number	
●	<b>Arcam CD17</b>	700	Civilised sound, with a positively deluxe treble. Bass is clear, if not the weightiest ever				●	●	●	●	315
●	<b>Audio Analogue Crescendo</b>	599	Simple player that's clear and communicative with the appropriate partnering equipment				●	●	●	●	329
●	<b>Cambridge Audio Azur 840C</b>	700	Superbly capable with a resolution and tonal evenness that's well worth hearing (silver finish)				●	●	●	●	315
●	<b>Cyrus CD6 SE</b>	900	A combination of detail and sheer musical energy with a hint of high end to the performance				●	●			318
●	<b>Harman/Kardon HD990</b>	550	Highly detailed with excellent extension at both extremes and impressive resolution	/594818			●	●	●	●	323
●	<b>Marantz SA7003</b>	600	Highly civilised sound may not be to all tastes, but there's plenty of detail to be heard				●	●	●	●	323
●	<b>Marantz SA8003</b>	830	Classic Marantz sound in a classy and attractive package. Our favourite sub-£1,000 player	/456022			●	●	●	●	315
●	<b>Micromega CD-10</b>	799	The cheapest in the range, the CD-10 has been fine-tuned to please the audiophile				●	●			328
●	<b>Moon CD.5</b>	999	Admirably energetic music-making from this very well-built player				●	●	●	●	323
●	<b>NAD C545BEE</b>	350	Apart from slight lack of bass control, sound is very fine indeed – treble is beautifully detailed				●	●	●	●	322
●	<b>Naim CD5i</b>	895	Its competent musical performance exceeds the expectations of an entry-level player						●		307
●	<b>Pioneer PD-D9</b>	850	A mostly well-balanced player that's arguably at its best with classical music	/636734			●	●	●	●	326
●	<b>Roksan Kandy K2</b>	895	State-of-the-art technology and precision-engineering produces a fine CD performance	/483697			●	●	●	●	315
●	<b>Rotel RCD-1520</b>	695	Lacks optical digital output, but feature-count is fine and sound quality is expressive and open	/608305			●	●	●		323

**Above £1,000**

Badge	Product	Price	Comments								
●	<b>Arcam CD37</b>	1,300	Excellent detail and imaging, neutral tonality and above-average bass resolution	/395096			●	●	●	●	318
●	<b>Audio Research CD5</b>	5,055	Audibly better than most CD players on the market – assertive and very dynamic	/455309			●	●			312
●	<b>Consonance Droplet CDP3.1</b>	1,995	A CD player which gets to the nub of what music is about. Engages the listener every time				●	●			322
●	<b>Copland CDA 825</b>	3,985	This a highly revealing player that delivers music in a realistically engaging form				●		●		332
●	<b>Creek Destiny</b>	1,400	This player presents the music and nothing but the music and is thoroughly recommended				●	●	●		328
●	<b>Cyrus Audio CD 8 SE</b>	1,200	A highly civilised player which can, nevertheless, deal convincingly with raw music	/399370			●	●	●		323
●	<b>Denon DCD-2010AE</b>	1,700	Well equipped, finely detailed and with good support for compressed audio and iPod				●	●	●	●	328
●	<b>EMM Labs XDS1</b>	18,995	Very high-performance two channel only player with the option of a standalone D/A converter				●	●	●	●	327
●	<b>Esoteric X-05</b>	3,995	Superb resolve of fine detail with a perfectly judged balance and an ability to draw you in	/478365			●	●	●	●	314
●	<b>Leema Antila II</b>	2,735	Great build and multiple DACs give this a fast, revealing and totally engaging sound	/612396			●	●	●		323
●	<b>Meridian G08</b>	2,400	Advanced digital processing with special apodising filter that gives a very clean sound	/455040			●	●	●	●	312
●	<b>Micromega CD-20</b>	1,249	No SACD, unfortunately, but without doubt one of the better mainstream players				●	●	●	●	332
●	<b>Mimetism 20.1</b>	5,107	An impressive player that produces a very convincing and musical sound				●	●			330
●	<b>Moon CD3.3</b>	2,200	With clear, detailed and energetic sound, this player also offers a digital output	/594609			●	●			328
●	<b>Moon 750D</b>	7,950	Very few CD players can extract as much information off the disc as the 750D				●	●	●		331
●	<b>Naim CD5 XS</b>	1,790	Its composure and openness results in a musical performance that is extremely seductive				●	●	●		334
●	<b>Rega Isis</b>	5,998	A magnificently musical CD player at a realistic price. USB input is a useful addition				●	●	●		329
●	<b>Shanling CD-T1000SE</b>	1,700	This player's valve/direct option gives a choice in terms of performance				●				328
●	<b>Sony SCD-XA5400ES</b>	1,199	Elegant, refined control system and very strong CD/SACD performance	/465933			●	●	●	●	313
●	<b>Unison Research CDE</b>	2,495	Valve CD player with interchangeable DACs doubles as a standalone DAC that oozes musicality	/483759			●	●	●	●	318

**SPECS KEY** **SACD COMPATIBLE** Plays high-resolution SACD discs in two-channel mode. **ELEC DIGITAL OUTPUT** Electrical coaxial output for digital connection to a DAC or digital recorder. **OPT DIGITAL OUTPUT** Optical Toslink output for digital connection to a DAC or digital recorder. **CD-RW COMPATIBLE** Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs. **CD TEXT** Will display album and track titles from inserted disc. **BAL ANALOGUE OUT** Balanced XLR output connections for similarly equipped amplifiers. **HEADPHONE SOCKET** Quarter inch (6.3mm) headphone jack fitted to the CD player. **VARIABLE OUTPUT** Player features both fixed level and variable, volume adjustable outputs.



After 5 years in production, the Dino is still one of the most popular phono stages around. Highly versatile with accessible switches on the baseplate to facilitate a wide range cartridges.

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## Dino Phono Amplifier



**BEST BUY**  
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magazine

# Turntables

The best record players money can buy



Badge	Product	Price	Comments	www.techradar.com	Switchable speed change Suspension subchassis	Supplied with arm	Supplied with cart	Issue number
●	<b>Clearaudio Emotion</b>	1,185	Beautifully built with open and clean sound emphasising mid and top, nice timely bass		33/45	●	●	309
●	<b>Clearaudio Performance</b>	2,300	Ceramic-magnetic bearing spells a surprisingly uncoloured performance		33/45	●	●	295
●	<b>Continuum Caliburn</b>	125,000	Luxury turntable with state-of-the-art design includes Cobra tonearm and Castellon stand	/587169	33/45/78	●	●	320
●	<b>The Funk Firm Funk V2</b>	1,390	Not only as beguiling as those that preceded it, this turntable is also more substantial to boot		33/45	●	●	324
●	<b>The Funk Firm Saffire</b>	2,450	Individual design and a sound that's refined and neutral with strong timing and dynamics		33/45	●	opt	opt 309
●	<b>Hanss Acoustic T-30</b>	3,600	The only multi-armbase deck in its price range, it boasts image stability and precise bass		33/45	●	opt	opt 331
●	<b>Lumley Heliosphere</b>	2,495	A distinctive-looking turntable with a unique sound and a performance that reflects your vinyl	/560765	33/45	●	opt	opt 319
●	<b>Michell Tecnodec</b>	608	Needs careful partnering but can deliver a very sophisticated result for the money		33/45	●	opt	309
●	<b>Michell Gyro SE/RB250</b>	1,565	A marriage of shot-putter-strength, build quality and robust audio (including arm substitute)		33/45	●	●	324
●	<b>Pro-Ject RPM-1 Genie 3</b>	190	The Genie is that rare thing of a product with good looks, fine build and excellent sound		33/45	●	●	332
●	<b>Pro-Ject RPM 6.1</b>	750	With its huge platter this is a steady design that's capable of fine results with a decent cartridge		33/45/78	●	●	294
●	<b>Pro-Ject X-Pack</b>	1,000	Combines very strong elements (Ortofon Rondo Red) a killer package with top sound and value		33/45	●	●	309
●	<b>Rega P3-24</b>	390	Very competent, uncoloured and musical, improved by £148 outboard electronic power supply		33/45	opt	●	298
●	<b>Roksan Radius 5/Nima</b>	1,375	Sophisticated design with accomplished sound quality, excellent imagery and good isolation		33/45	●	●	248
●	<b>SRM Arezzo</b>	699	The Arezzo is an excellent source component for those wanting a superb turntable for vinyl replay	/625025	33/45	●	●	325
●	<b>Townshend Rock 7</b>	1,720	Has the ability to pull detail out of a vinyl groove, making it the most resolute turntable at its price		33/45	●	●	324
●	<b>Townshend Rock V/Excalibur II</b>	7,000	If you want to hear everything that's on a record then there's no better machine for the job		33/45	●	●	307

# Phono cartridges

MM and MC recommendations



Badge	Product	Price	Comments	www.techradar.com	Replaceable stylus	Issue number
					MM	MC
●	<b>Dynavector Karat 17D3</b>	699	One of the most thrilling-sounding cartridges on the market		●	334
●	<b>Goldring Legacy</b>	595	An MC cartridge better suited to the smoother-sounding turntable, it unearths a mountain of detail		●	328
●	<b>Grado Prestige Gold</b>	149	Produces rich, open and expansive music with the minimum of fuss		●	235
●	<b>Ortofon Rondo Red</b>	385	Delivers detail, power and resolution and makes a good case for its price		●	307
●	<b>Ortofon Cadenza Red</b>	750	There's much to admire in this cartridge's fine detail and unfussy presentation		●	330
●	<b>Sumiko Blue Point Spec Evo III</b>	239	High-output MC with refinement at high frequencies and a nimble, articulate and revealing sound		●	270
●	<b>van den Hul MC One Special</b>	699	A gorgeous cartridge that's worth the price every time you hear a familiar track in a whole new light		●	235
●	<b>van den Hul Condor XCM</b>	2,400	A stunning cartridge with stereo imaging, dynamics and resolution to die for		●	265

# Phono stages

Make your turntable sing



Badge	Product	Price	Comments	www.techradar.com	MM phono inputs	MC phono inputs	Adj impedance	Adj gain	Issue number
●	<b>Cambridge Audio 640P</b>	100	An outrageously good bargain that suits budget systems, but can confidently survive upgrades		●	●	●	●	305
●	<b>Linn Uphorik</b>	1,850	Exceptional sound quality, the Uphorik could easily win over the next generation of LP enthusiasts		●	●	●	●	334
●	<b>Soundsmith Strain Gauge</b>	6,100	Revolutionary kit assembly that rewrites the rules about vinyl playback	/618387					324
●	<b>Tom Evans Microgroove</b>	480	For dynamics and real bass extension with good tonal colour this is the one to beat		●				234
●	<b>Trichord Dino/Dino+</b>	563	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility		●	●	●	●	234

**SPECS KEY** **SPEEDS** Speeds offered in rpm. **SUSP SUBCHASSIS** Turntables with a sprung or suspended support for the platter and arm. **SWITCHABLE SPEED CHANGE** Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. **SUPPLIED WITH ARM** Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you. **SUPPLIED WITH CARTRIDGE** Some decks are supplied with a starter cartridge and this is included in the price shown. **MM** Moving magnet cartridge – see amp and phono stage features to match this type. **MC** Moving coil cartridge – see amp and phono stage features to match this type. **REPLACEABLE STYLUS** Some cartridges have separate styli for ease of replacement, but it compromises sound quality.

## HFC TOP PICKS



### Cambridge Audio 640P £100

If you need a low-cost way to get your turntable talking to your amplifier, this is by far the best option, just pop into your local Richer Sounds



### Dynavector Karat 17D3 £699

The 17D3 gets very close to the results achieved with MCs at twice the price and few can touch it in terms of sheer musicality and resolution of detail

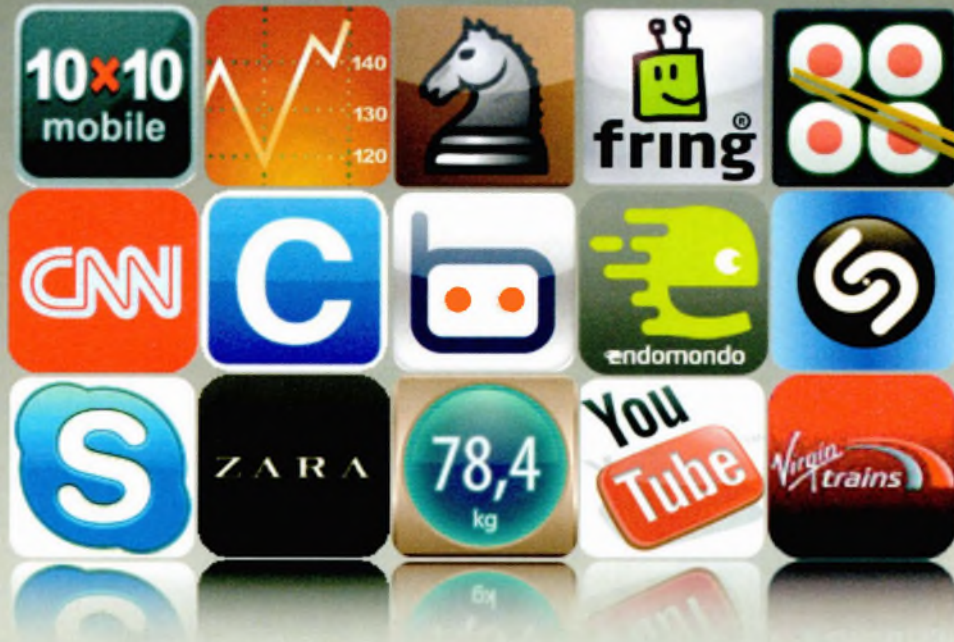


### Townshend Rock 7 £1,720

A great turntable for those upgrading from an entry-level deck. Sound engineering at a bargain price sets this deck apart from the competition



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# Amplifiers

Our pick of the best one-box amps out there



Up to £1,000

Badge	Product	Price	Comments	www.techradar.com	Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number
●	<b>Audio Analogue Crescendo</b>	599	In a room of appropriate dimensions, this amplifier has real musical presence						5	50 329
●	<b>Cambridge Audio 840A v2</b>	800	A chunky powerhouse with features aplenty, this amp offers detail and delicacy (silver finish)						8	120 327
●	<b>Marantz PM8003</b>	750	Detail isn't the utmost, but great vitality makes this amplifier quite thrilling				MM		5	70 327
●	<b>Moon 1.5</b>	999	A likeable amp in many ways, with admirable bass, treble and imaging						5	60 321
●	<b>NAD C3226BEE</b>	320	Unusually confident into awkward loads and very assured especially in bass. Treble a touch recessed	/603281					7	50 322
●	<b>Puresound A10</b>	685	A superbly involving valve amp at a very competitive price and with genuinely excellent results						2	10 331
●	<b>Roksan Kandy K2</b>	895	Superior design and high-performance credentials makes this amplifier a must have bargain	/483722			MM		5	125 315

Above £1,000

●	<b>Arcam A38</b>	1,480	A winning combination of sonic virtues including highly developed detail and musicality				opt		7	100 332
●	<b>Astin Trew AT2000PLUS</b>	1,740	If you prefer timbral and timing qualities of music to its bone-crunching potential, this is a contender						4	65 332
●	<b>Audio Analogue Puccini Settanta</b>	1,450	Detailed and lively, particularly in the upper octaves, but lacks a little bass extension				MC		5	160 320
●	<b>Creek 5350 Evolution</b>	1,075	One of the most attractive amps in its price range, with a sound that's immediately satisfying				MM MC		5	120 334
●	<b>Denon PMA-2010AE</b>	1,700	High-class, well-equipped integrated, with a performance that is muscular, refined and detailed				MM MC		6	80 328
●	<b>Electrocompaniet PI-2</b>	1,600	A superb all-rounder, with insight on one hand and effortless musical flow on the other						6	100 327
●	<b>Electrocompaniet ECI-3</b>	1,650	This is an impressively resolute and powerful integrated amplifier for the money	/618304					5	70 324
●	<b>Gryphon Atilla</b>	6,995	Exceptional subtlety and definition, has enough power to cope with just about anything musical						5	100 328
●	<b>Harman/Kardon HK 990</b>	1,000	Very clever, with built-in DSP room correction – but most importantly a powerful and revealing ampl	/594820			MC		7	160 321
●	<b>Leema Pulse</b>	1,270	Admirable bass which combines extension, tautness and clarity. Higher frequencies are highly detailed				MM/MC		5	70 327
●	<b>Leema Tucana II</b>	3,425	Highly featured, well built and not short of power, this is a highly resolute and organic amp	/612396					7	148 323
●	<b>Lyngdorf Millennium Mk IV</b>	10,995	State-of-the-art digital amp successfully transcends virtually all problems that afflicts others of its type	/603231					5	150 322
●	<b>Micromega IA-100</b>	1,125	Fast and fluid performer that brings a touch of panache to its role				MM		5	100 332
●	<b>Mimetism 15.2</b>	5,415	A powerful amplifier with great dynamics and high resolution that's rare even at this price						6	180 330
●	<b>MSB Platinum M200</b>	13,656	This amplifier's devastatingly good all-round sound quality sets a benchmark that few will approach	/603452						322
●	<b>Myryad MX12080</b>	1,200	Sound is more assured at the top of the frequency range, though bass is melodious and detailed						8	80 327
●	<b>NAD 375BEE</b>	1,000	A good, solid amplifier that is fundamentally musical and gives a great bang for your buck	/625323					7	150 325
●	<b>Naim Audio NAIT XS</b>	1,250	Its spellbinding, refined musical performance is a challenge to all integrated amplifiers	/498536					6	60 317
●	<b>Rega Osiris</b>	5,998	Very solid all-round performer has massive power reserves and splendid stereo imaging						6	162 329

# Pre/power amplifiers

Separate boxes can bring clear advantages



Up to £2,000

Badge	Product	Price	Comments	www.techradar.com	Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number
●	<b>Cambridge Audio Azur 840E/840W</b>	2,000	Enterprising technology delivers a pre/power combo that always sounds detailed and controlled						8	200 309
●	<b>NAD C165BEE/C245BEE</b>	1,190	An alternative to the usual integrated route and one that offers flexibility and fine sound						6	35 331

Above £2,000

●	<b>Arcam C31/P38</b>	2,450	Very civilised sound in the best possible way. Well featured and smartly built				opt		7	100 308
●	<b>Border Patrol Control Unit</b>	3,995	Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around				opt		5	277
●	<b>Bryston BP16/ 2B SST2</b>	5,700	Preamp and power amp combo offers superb sound quality	/608649			opt		6	100 323
●	<b>Bryston BP26</b>	3,670	Cracking preamp brings detailed results				opt		8	308
●	<b>Chord Prima/Mezzo 140</b>	7,135	Small, muscular, beautifully made and styled, and sounds like a dream						5	120 269
●	<b>Classé CP-700/CA-M400</b>	9,200	Pre plus mono power combo with superb build, huge power and enormous flexibility.				opt		6	400 293
●	<b>Cyrus DAC XP (preamp/DAC)</b>	2,275	A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz						2	266
●	<b>Digital Do Main Ba-1</b>	6,495	By recreating the V-FET, DDM has built one of the most thrilling amplifiers on the market						4	300 327
●	<b>Hovland HP-100/RADIA</b>	18,900	Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers				opt		9	125 250
●	<b>Naim NAC 152XS/NAP 155 XS</b>	1,920	Preamp and power amp duo offers excellent performance and classic Naim virtues						6	60 324
●	<b>Roksan Caspian M Series-1</b>	2,800	A powerful and enjoyable-sounding amplifier combo that brings out the strengths of its CD player						5	85 307
●	<b>Trilogy 909/990</b>	10,390	Extremely musical valve-based pairing with hybrid power and beautiful finish	/625226					6	100 325

**SPECS KEY** **LINE INPUTS** Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. **PHONO INPUT** Input sockets and on-board phono stage for a cartridge. Either MM (moving magnet) or MC (moving coil), occasionally both. **REMOTE CONTROL** A remote control is supplied with the amplifier. **HEADPHONE SOCKET** To drive your cans with. **POWER OUTPUT** Manufacturer's rated output in watts per channel.

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# Cables



Cables really can make a difference, especially our top recommendations

## Analogue interconnects

Badge	Product	Price	Comments	www.techradar.com	Stranded	Solid core	Copper	Silver	Digital cable type	Issue number
●	<b>Audioquest Sidewinder</b>	45	A detailed cable, with fine tonality and excellent rhythm		●			●		297
●	<b>Black Rhodium Prelude</b>	90	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit		●			●		293
●	<b>Black Rhodium Coda</b>	150	Superb bass with neutral and detailed midrange, treble sweet with occasional slight constriction		●			●		298
●	<b>Black Rhodium Polar Illusion</b>	250	A good all-rounder, with clear and purposeful bass and particularly fine treble		●			●		321
●	<b>Cambridge Azur Reference</b>	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble		●			●		296
●	<b>Chord Co. Indigo Plus</b>	995	Costly, and high-class cable needs running in, but this is a finely detailed design overall	/608313	●					323
●	<b>Clearer Audio Silver-line</b>	283	Complex, well-screened cable which offers good sound all round with exceptional bass		●			●		279
●	<b>CrystalCable Piccolo</b>	348	Thin, tougher than it looks, has some qualities of a solid-core type – resolution, focus and articulation			●			●	294
●	<b>Kimber Timbre</b>	145	A very neutral cable that will complement even very upmarket systems				●		●	312
●	<b>Monster M350i</b>	45	Few cables at this price reveal so much about the recording space.		●			●		281
●	<b>Monster M1000i</b>	230	Very capable, with only a hint of bass dryness to set against excellent results elsewhere		●			●		284
●	<b>Nordost Wyrewizard Dream</b>	110	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass				●	●		303
●	<b>Oehlbach NF214</b>	63	The bass is a matter of taste, but suits many smaller speakers with good mid and treble			●		●		281
●	<b>QED Signature Audio S</b>	190	Mellifluous and rounded, this cable is a great choice for lovers of the human voice				●		●	332
●	<b>Supra EFF-IX</b>	77	Lively sounding which maintains a high level of detail and neutrality, musically, a great all-rounder		●			●		306
●	<b>Townshend Isolda DCT100</b>	99	Particularly enjoyable cohesion and naturalness that makes for great listener involvement				●	●		312
●	<b>van den Hul The Wave</b>	125	Neutral, with a hint of upper-bass richness: images seem to reside slightly further away than most				●	●		312

## Digital interconnects

●	<b>Kimber DV-30</b>	98	A superb performer that lacks very little, even when compared to Kimber's high-end models			●		●	E	317
●	<b>Merlin Scorpion Digital</b>	130	Reduces distortion, making sound clear with unusually revealing low frequencies			●			E	317
●	<b>Supra AnCo</b>	30	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context			●		●	E	304

## Speaker cables (price per metre)

●	<b>Atlas Hyper 1.5</b>	12.5	Don't look to this cable to beef up the bass, but at higher frequencies is revelatory at the price			●		●		299
●	<b>Atlas Ascent 2.0</b>	60	A highly analytical cable and very fine detail across the board			●		●		294
●	<b>Chord Co. Silver Screen</b>	6	Screened speaker cable with excellent treble, but just a little light in the bass at times			●		●		310
●	<b>CrystalCable Piccolo</b>	1,395	A chip off the old block, has a similarly fast, fluid and subtle sound (price - 3 metre pair)				●		●	302
●	<b>Kimber 4VS</b>	155	In the right system, this cable is a good choice (price reflects 2.5 metre terminated pair)			●		●		329
●	<b>Monster MCX-1s</b>	5	Notable for its bass, perhaps a touch overdone at times but could be a good foil to small speakers			●		●		280
●	<b>Nordost Heimdall</b>	185	Alternative to Valhalla, silver-plated, micro-monofilament construction, suitable for exacting systems			●		●		278
●	<b>QED X-Tube XT300</b>	12.5	A natural and controlled-sounding cable that's cost-effective for mid-priced systems				●	●		310
●	<b>QED Revelation</b>	15	Sensibly priced, this cable offers a performance which is a step-up from budget types			●		●		318
●	<b>Townshend Isolda DCT</b>	50	Cryogenically treated 'impedance-matched' cable with stabilising components added				●	●		241
●	<b>van den Hul The Wind</b>	50	Separate conductors provide room for experimentation, conductor quantity keeps resistance low				●	●		318
●	<b>Wireworld Solstice 52</b>	25	Rather bulky and awkward, but performance amply justifies it with superb bass solidity			●		●		310
●	<b>Wireworld Oasis 6</b>	40	Excellent bass with tunefulness and extension all first-rate. Awkward to handle, though	/617560		●				324

**SPECS KEY** **STRANDED** Cable has a number of (usually) twisted strands to conduct the signal. **SOLID CORE** Cable has one or more individually insulated strands to conduct the signal. **COPPER** Material used to form the conducting element of the cable. **SILVER** Alternative material used to form the conducting element of the cable. **DIGITAL CABLE TYPE** E – electrical, O – optical. Cables are one metre length unless otherwise stated.

## HFC TOP PICKS



### QED Revelation £15 (per metre)

Giving a consistent result with a wide range of amplifiers and speakers, the Revelation speaker cable boasts a good performance in all areas.



### Kimber DV-30 £59 (0.5 metre)

A superb performer that lacks very little, even compared to Kimber's high-end models. Tonality, detail and imaging are really very fine.



### Black Rhodium Polar Illusion £250

This super-cooled, unshielded interconnect with solid, silver-plated copper insulation, delivers a treble performance that's admirably clear and crisp.

**BADGES KEY:** RECOMMENDED = ● EDITOR'S CHOICE = ● GROUP TEST WINNER = ● BEST BUY = ●

## Stereo speakers

The most influential link in the chain



**Up to £1,000**

Badge	Product	Price	Comments	Size - width, height, depth (cm)	www.techradar.com	Floorstander	Bass from (Hz)	Ease of drive	Close to wall free space	Issue number
●	<b>Acoustic Energy Aegis Neo 3</b>	363	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight	20,90,5,24		●	A	24	●	294
●	<b>Acoustic Energy Radiance 1</b>	600	Limited bass, power handling and dynamics, but exceptional mid-to-treble voicing	18,5,32,25		●	A	33	●	325
●	<b>Amphion Ion L</b>	900	Sharp styling, fine mid/treble coherence a sweet treble, but less happy bass alignment	16,2,32,6,26,5		●	A	40	●	310
●	<b>ATC SCM11</b>	867	A very fine little speaker t-at its best with natural recordings where it adds little	21,38,25		●	A-	55	●	293
●	<b>AudioPro Avanti A.10</b>	350	A tough and effective little speaker – overall balance is quite smooth and even	19,29,26		●	A+	38	●	319
●	<b>Bowers and Wilkins CM1</b>	488	Luxury miniature has laid-back sound, low coloration and fine imaging, but weak dynamics	16,5,28,28		●	A-	40	●	279
●	<b>Bowers and Wilkins 684</b>	699	A fine all-rounder at a realistic price, has a smooth, even and nicely open balance	/483503	20,91,30	●	A	22	●	315
●	<b>Bowers and Wilkins 683</b>	879	High-class drivers and a great price makes for a warmly recommended speaker	20,99,34		●	A	20	●	304
●	<b>DALI Ikon 6</b>	999	Needs care with setup, impressively transparent and obsessively detailed sound	19,100,33		●	A	37	●	271
●	<b>Dynaudio DM 2/10</b>	880	Has fine dynamics, grip, bass and headroom and is well mannered	27,5,45,35		●	A	22	●	299
●	<b>Focal Chorus 706V</b>	389	Advanced drivers deliver an even, healthy dynamic expression and tension	22,39,25		●	A	27	●	319
●	<b>Focal Chorus 726V</b>	950	Compact and realistically priced, the Chorus 726V is a good all-round performer	22,99,37,5		●	A	25	●	325
●	<b>JBL Studio L880</b>	700	Good value floorstander with neutrality, massive headroom and plenty of punch	22,99,37		●	A	25	●	275
●	<b>KEF iQ50</b>	599	Looks cute and very discreet, with spacious imaging, good balance and a sweet treble	/483527	17,5,81,5,26	●	A	23	●	315
●	<b>Monitor Audio BR2</b>	230	Good-looking standmount has a muscular sound with superior coherence	18,5,35,25		●	A-	30	●	294
●	<b>Monitor Audio BR5</b>	450	Not the best dressed in its class, but detailed, bold-sounding and good value	17,8,5,25		●	A-	36	●	293
●	<b>Monitor Audio Silver RS8</b>	850	Bold, dynamic sound, it's an easy load that works well in larger rooms	90,18,27		●	A	33	●	276
●	<b>Monitor Audio GS10</b>	900	More neutral tonally than some recent MAs, the GS10 is is easy to drive	20,36,27		●	A-	40	●	284
●	<b>PMADB1i</b>	985	Could be more neutral, but a very effective musical communicator	15,5,29,23,4		●	A+	30	●	334
●	<b>ProAc Tablette Ref Eight</b>	704	Stunning standmount with electrostatic-like imagery. Its brother is even better!	15,27,23		●	A+	40	●	267
●	<b>Q Acoustics 1010</b>	110	Neatly styled miniature has limited bass and power handling, fine midband voicing	15,21,5,19,5		●	A	48	●	286
●	<b>Q Acoustics 1020i</b>	140	Outstanding value, t smooth well-balanced and lively sound makes a fine communicator	/516273	17,5,25,26,5	●	A+	60	●	318
●	<b>Rega RS1</b>	390	Clever close-to-wall speaker has a fine coherence and good communication skills	15,32,23,6		●	A	23	●	319
●	<b>Russ Andrews SP-1</b>	352	This tweaked Focal 705V RA has a sound that is immediate, engaging and, and great fun	19,2,31,5,24,8		●	A+	65	●	309
●	<b>Spendor S3/5R</b>	750	Lacks dynamic muscle and loudness potential, smooth neutrality and g bass extension	16,5,30,5,190		●	A	25	●	310
●	<b>Tannoy Revolution DC4T</b>	599	Ultra-compact, lacks bass weight and dynamic tension, but sounds open and coherent	488857	15,8,5,16	●	A	40	●	316
●	<b>Tannoy Revolution DC6</b>	900	Pretty compact standmount, delivering a lively bass and smooth, coherent midband	23,36,5,23		●	A	40	●	307
●	<b>Wharfedale Diamond 9.1</b>	150	Superior shape and finish. Sound is laid back, but free from boxiness	19,5,30,28		●	A-	45	●	307
●	<b>Wharfedale Diamond 10.5</b>	480	Despite the price, the 10.5 ticks many of the boxes, with superior voice band coherence	/636778	22,88,30	●	A-	50	●	326

**Above £1,000**

●	<b>Adam Audio Tensor Delta</b>	8,400	This active loudspeaker brings a powerful range of capabilities to its performance	33,56,34		●	A	50	●	329
●	<b>AE Energy Radiance 2</b>	1,000	This speaker boasts fine neutrality, sweet top, fine imaging and wide dynamic range	18,5,9,2,2,5		●	A	30	●	334
●	<b>AE Energy Radiance 3</b>	1,500	This speaker's effective enclosure ensures a wide dynamic range and a very clean sound	/587236	23,92,29,7	●	A	27	●	320
●	<b>Amphion Argon2 Anniversary</b>	1,200	Notably superior coherence, focus, fine neutrality and dynamic range with low coloration	19,38,31		●	A	24	●	317
●	<b>Amphion Argon 3L</b>	2,300	Solid build ensures an impressively clean sound with loads of bass and fine neutrality	19,9,25,30,5		●	A	26	●	322
●	<b>Aspara HL6</b>	4,300	Acoustic material sounds great and there are many strengths in design and performance	18,5,9,3,34,5		●	A		●	332
●	<b>ATC SCM16A</b>	2,376	Makes a great case for the active speaker. Includes built-in amps and is good value	27,45,33		●	ACT	42	●	300
●	<b>Audioplan Kontrapunkt IVB</b>	2,898	Boasts exceptional stereo imaging and mid-through-treble coherence	16,35,26		●	A	45	●	329
●	<b>Audiovector S3 Super</b>	2,600	Useful ability to upgrade, offers good musical communication and stereo imaging	19,10,3,31		●	A	50	●	328
●	<b>Aurousal VS</b>	1,650	Fine coherence and imaging of a single driver system, extra help at the frequency extremes	/479149	21,5,10,7,5,26,8	●	A	20	●	314
●	<b>AVI ADM9</b>	1,125	Active mini-monitors that are exceptionally accurate and dynamic sounding	20,30,26		●	ACT	60	●	301
●	<b>Bowers and Wilkins CM9</b>	1,760	Tall, elegant, expressive midband and expansive, but well-controlled bass	/597244	20,10,25,32	●	A	60	●	321
●	<b>Cabasse MC40 Java</b>	1,360	This large and handsome speaker has a notably smooth and evenhanded neutrality	25,110,35		●	A	20	●	325
●	<b>Cabasse Bora</b>	2,200	A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics	/618354	33,27,50	●	A	52	●	324
●	<b>Dynaudio Focus 220</b>	2,630	Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble	20,5,98,29,5		●	A-	20	●	281
●	<b>Focal Chorus 816 V</b>	1,099	Fine, warm balance, superior dynamics and a sweet top end, but could be smoother	28,100,37,5		●	A+	20	●	288
●	<b>Focal Chorus 826 V</b>	1,349	Times nicely, goes loud with ease and will produce precise imaging if appropriately set up	28,104,37,5		●	A	45	●	287
●	<b>Focal Chorus 816WSE</b>	1,499	The W cone makes some qualities associated with Focal's high-end models more competitive	99,8,28,2,37,5		●	A+	39	●	308
●	<b>Focal Chorus 826W LE</b>	1,879	Focal has turbo charged the 826 resulting in lots of energy, excitement and fine detail	28,2,103,8,37,5		●	A		●	330
●	<b>Focal Electra 1027 Be</b>	4,399	Outstanding mid and top with fine delicacy, low coloration, but lacks some bass grip and drive	26,5,111,35		●	A-	25	●	276
●	<b>Free FS1</b>	3,500	An elegant design with the minimum of wiring. Wireless with Sonos or Airport Express	16,87,27		●	ACT	35	●	301
●	<b>Gamut Phi5</b>	3,040	Lovely discreet floorstander has excellent sound and several very clever engineering touches	17,100,24		●	A	20	●	305

## Stereo speakers (continued)

Shapes and sizes for every budget

Badge	Product	Price	Comments	Size - width, height, depth (cm)	Floorstander	Ease of drive	Bass from (Hz)	Free space	Close to wall	Issue number
●	<b>Green Mountain Audio Rio</b>	2,000	Fabulously tight timing and coherence makes for a very expressive and musical performer							332
●	<b>Guru QM10</b>	1,595	A very clever close-to-wall standmount with fine imaging, that sounds a lot bigger than it looks	/465869						317
●	<b>Jamo R 907</b>	6,600	Arguably the more 'chummy' of Jamo's dipole flagships, powerful bass and open midrange	/498515						317
●	<b>JBL Everest DD66000</b>	44,000	Awesome performance in the true meaning of the word & exceptional musical communication							331
●	<b>Kudos Cardea C2</b>	1,950	This floorstander is a fine all-round performer with fine voicing and neutrality							322
●	<b>Kudos Cardea C30</b>	5,250	An absolute honey that fully justifies its hefty pricetag, lacking only a little dynamic tension	/394973						310
●	<b>Magico V2</b>	18,000	High pricing derives this speaker's superb painstaking engineering & impressive performance	/624700						325
●	<b>Magneplan Magneplanar 1.6</b>	2,500	Great with acoustic and classical material, this dipole panel speaker has superb sound quality							329
●	<b>Mission 796</b>	1,300	Clean, open and detailed, smooth, relaxed loudspeaker does exactly what it says on the box	/594834						321
●	<b>Monopulse 42A</b>	1,995	Oddball styling, fine bass-to-mid balance and dynamics and superb voice coherence							302
●	<b>Monitor Audio PL200</b>	4,750	A costly, but beautifully presented loudspeaker with outstanding voicing and character							330
●	<b>Mordaunt-Short Perf 6 LE</b>	4,799	Striking moulded enclosure minimises coloration, overall balance is smooth, neutral and open							308
●	<b>Neat Momentum 3i</b>	1,790	Sounds bigger than it looks, with good coherence and an impressively wide dynamic range							302
●	<b>Opera Callas</b>	3,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	/429144						311
●	<b>Opera Seconda</b>	1,995	Fine styling and finish, plus very superior voicing, if a shade lacking in warmth							314
●	<b>Pioneer S-2EX-W</b>	5,200	This speaker offers superb midband neutrality and exceptional clarity	/587272						320
●	<b>PMC FB1i</b>	2,100	A floorstander that boasts impressive bass extension and a smooth sweet top end	/429594						329
●	<b>PMC OB1i</b>	3,600	This floorstander delivers a smooth overall balance with wide bandwidth and dynamic range	/429697						311
●	<b>PMC fact. 8</b>	4,600	Beautiful styling, alongside a superb all-round sound with a notable wide dynamic range							327
●	<b>PMC IB2i</b>	8,900	Delivers a top-class sound quality, fine imaging and exceptional dynamic grip	/617595						324
●	<b>PSB Synchro One</b>	3,500	Slim and discreet floorstander that delivers superb sound quality and flexible bass	/516267						318
●	<b>Revel F32</b>	3,200	Meticulously balanced, tonally neutral design makes for a taut, well-disciplined sound							256
●	<b>Revolver Screen 3</b>	2,799	Visually dramatic and very successful in delivering genuine high-quality hi-fi sound							329
●	<b>Roksan Caspian FR-5</b>	2,475	Sharp-looking speaker sounds exceptionally open and lively without aggression							290
●	<b>Sonus faber Luito Monitor</b>	1,690	Subtly designed, elegant-sounding package, especially with good recordings	/603221						322
●	<b>Sonus faber Minima Vintage</b>	2,490	Easy, graceful-sounding compact, a natural for acoustic material at moderate volume levels	/455417						312
●	<b>Sonus faber Cremona Audit.</b>	3,350	Open, exciting and with surprisingly good bass, this is 'The Little Speaker That Could'							305
●	<b>Spendor SA1</b>	1,295	Very high-quality sub-miniature with notably superior sound							334
●	<b>Spendor SP3/1R2</b>	1,600	Conservative styling, superb neutrality and coherence with unusually low coloration							317
●	<b>Tannoy Definition DC10T</b>	5,000	Classy speaker has massive base, high sensitivity and precise image focus	/608326						323
●	<b>Triangle Genese Quartet</b>	2,775	Great material value and a solid all-round sonic performance with great loudness potential							302
●	<b>Triangle Magellan Concerto</b>	16,250	New 'sw2' version is less immediate than its predecessor, but it remains highly entertaining							290
●	<b>Usher Compass CP-6381</b>	2,500	Lots of speaker for your money, with plenty of deep bass, unusual styling and massive build							270
●	<b>Vivid Audio K1</b>	14,495	With a subtle, fast and wide bandwidth, this speaker is one of the finest on the planet	/625361						325
●	<b>Wilson Benesch Curve</b>	5,383	Much (but not all) of the ACT's performance in a much more compact and affordable package							254
●	<b>Wharfedale Opus</b>	1,500	Great material value and a solid, if bright and forward sound. Has great loudness potential							314
●	<b>Yamaha Soavo 2</b>	1,200	Cunningly crafted with a beautiful balance that always sounds lively, open and involving							296
●	<b>Zu Essence</b>	3,750	Realism and communication skills are more than compensation for balance shortcomings							327

**SPECS KEY** **SIZE W,H,D (CM)** Width, height and depth of one cabinet in centimetres. **FLOORSTANDER** Speakers that don't require stands. **EASE OF DRIVE** How much power the amplifier needs (approximately) to drive the loudspeaker effectively. **A+** 25 watts plus **A** 50 watts plus **A-** 100 watts plus **ACT** Active – the speaker has its own in-built amplifier. **BASS FROM** How low the speaker goes – the smaller the number the deeper the bass. **FREE SPACE** The speakers work best away from wall(s). **CLOSE TO WALL** The speakers will work best when up against a wall (but avoid corners).

### HFC TOP PICKS



#### Amphion Ion L £900

A great-looking loudspeaker that also boasts a superb mid/treble coherence and a super-sweet treble, some positioning care needed



#### Opera Seconda £1,995

Classy, sealed-box, two-and-a-half-way Italian floorstander with a very fine fit and finish and a superior voice band for acoustic work



#### Audioplan Kontrapunkt IVB £2,898

It's small, it's expensive, but this German floorstander contains the finest ingredients and delivers a smooth sound with some of the best imaging around

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## Equipment supports

Hi-fi equipment supports come in all shapes and sizes



Badge	Product	Price	Comments	Top plate size (Cm) Height (Cm)	Number of shelves Welded	Shelf type	Issue number
	<b>Atacama Equinox</b>	409	Stable, modular design with style and excellent bass transients	81 50,50	● 4	<b>Glass</b>	217
●	<b>Audiophile Base Std Supp't</b>	1,200	Expensive and quite bulky, but sound is unusually detailed and resonance-free	57 46,35	● 3	<b>MDF</b>	302
●	<b>Blok Stax 300</b>	180	A simple and effective design that gives some useful isolation across most of the audio band	40,46	● 3	<b>MDF</b>	334
●	<b>Custom Design Inert Matt</b>	70	Isolation platform can improve the sound of hi-fi components, but is a bit small for most kit	40x25		<b>Metal</b>	311
	<b>Custom Design XL4</b>	380	Simple construction pays off in smart looks. Sound contribution is minimal	60,42	● 4	<b>Glass</b>	293
	<b>Custom Design Milan</b>	509	Good-looking stand with nothing more to complain of than slight muddying of detail	57 48,39	● 4	<b>Glass</b>	302
●	<b>Hi-Fi Racks Podium</b>	500	A keenly priced piece of high-class furniture that also happens to sound great	59,5		<b>Wood</b>	320
●	<b>Isonoe Isolation feet</b>	98	A set of four isolation feet that are ideally suited to microphonic kit like turntables			<b>Alloy</b>	327
	<b>Partington Minim</b>	470	Adds its own character to rock, but to the detriment of acoustic sounds	78 45,37	● 5	<b>Glass</b>	302
●	<b>Quadraspire QX25 Support</b>	25	Beautifully simple design, cheap and easy to use. Excellent with CD players			<b>Acrylic</b>	327
●	<b>Quadraspire Sunoko-Vent T</b>	800	The sound is detailed and largely uncoloured, while the design is rigid and beautifully veneered	59,47	● 4	<b>MDF</b>	334
	<b>Russ Andrews Torlyte Rack</b>	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68 54,49	● 4	<b>Torlyte</b>	240
●	<b>Townshend VSSS</b>	1,380	This attractive Seismic Sink retains the same excellent vibration-killing sound quality	76 35,50	● 4	<b>Glass</b>	273

## Speaker stands

Not all stands are made equal - try one of our top buys



Badge	Product	Price	Comments	Top plate size (Cm) Height (Cm)	Number of shelves Fillable Welded	Issue number
	<b>Anvil Sound Display Stand</b>	229	A variety of smart looks available – sound is clear and precise	50 20,17	● 1	293
●	<b>Custom Design RS300</b>	110	An attractive stand whose lack of coloration suits it to high-resolution systems	56 16,5,18	● 1	281
●	<b>Custom Design SQ404</b>	220	Robust four-pillar design gives very low coloration and maximises performance	61 18,16,3	● 4	283
●	<b>Partington Ansa 60</b>	119	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62 18,15	● 4	232
●	<b>Partington Dreadnought BS</b>	299	Sound is better defined in almost all areas than cheaper, slimmer stands can offer	62 17,23	● 5	309
●	<b>Partington Heavi II</b>	499	Robust to the nth degree, this stand helps produce very precise bass and upper frequencies	53 31,22	● 6	287

**SPECS KEY** **HEIGHT (CM)** Height of equipment support and speaker stand (not including spikes) in centimetres. **TOP PLATE SIZE (CM)** Width by depth of the supporting platform(s). Single figures indicate a square platform (Speakers generally overhang top plates). **FILLABLE** The stand can be mass-loaded with sand and/or lead to stop ringing. **WELDED** As opposed to bolt-together construction. **NUMBER OF SHELVES** To put your kit on (different configurations are often available). **NUMBER OF LEGS** That support the stand. **SHELF TYPE** Material that shelves are made of.

### HFC TOP PICKS



**Quadraspire QX25 Support £25**  
Fashioned from two identical pieces of acrylic sheet that slide together, these feet create a very impressive degree of isolation



**Partington Dreadnought BS £300**  
Probably the best speaker stand you can buy for the money – heavily engineered and backed up with sound theory, the Dreadnought is real class



**Townshend VSSS £1,380**  
Although not cheap, Max Townshend's skillfully engineered rack nears the ideal in terms of isolation and spending more doesn't really bring big gains

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# Perfect sound forever

**Malcolm Steward** takes a detailed look at how to achieve the optimum sound quality when archiving your precious music

In the last issue's *The Back Page* column, documenting the incorporation of 'unpacked' media into my audiophile life, I reported that I had converted all my 'pure' PCM WAV rips to lossless FLAC files. Although FLAC reduces the amount of hard disk storage space that they require, this was not why I compressed over 8,000 files on one particular disk. The change was intended primarily to provide the collection with comprehensive metadata, which the WAV format does not consistently support.

Having metadata is a vital consideration if you intend to stream the music to any UPnP (Universal Plug and Play) rendering devices in your home, such as a Linn Majik DSi (HFC 332), Naim Uniti or similar.

I chose FLAC because it is not a lossy compression system and does not 'throw away' any musical data: it is the complete opposite to MP3 compression, in fact. The beauty of the format is that you can convert a PCM WAV file to FLAC and then reverse the process and turn the file back into the original string of bits with which you started. In truth it might not be an entirely identical string of bits, but the critical musical sections, the 'fmt' and 'data' sub-chunks of the WAV file will be absolutely the same as the original.

When converting to FLAC you can employ its verification option in which a decoder is run in parallel to the encoder and its output is compared against the original input. If any difference is discovered the process halts and alerts you with an error.

While the file format is ideal in this respect, it is not without a minor niggle for discerning listeners. When you convert to FLAC you can specify the level of compression that you wish to apply to the original data. When I did my first conversion, I applied near-maximum compression to each file on the disc, forgetting that I wanted minimal compression on those to which I listen to frequently. I did not want to suffer the inconvenience of having to revert those FLACs to WAVs whenever I wanted to enjoy them fully, even though I still had copies in WAV format on other disks, so I had an alternative escape route, at least.

## My concerns

You might be wondering why I am concerned by all this. The reason is simple: I do not enjoy listening to anything but the indisputable best when I settle down to appreciate music fully, and the easiest way to ensure this with

computerised audio is to minimise the amount of work the rendering device is having to do to play it. So, WAV with zero compression will sound better than FLAC, which requires processor power to decode the file.

The magnitude of the difference in the sound quality of those rips may well be marginal, but when I am using my active Naim DBL system, as opposed to my less-revealing Naim Uniti office system, I feel much happier knowing I am listening to the optimum source material.

As I have intimated above, I am not talking about huge, night and day differences here but more subtle degrees of performance variance, which seem especially noticeable at the frequency extremes. With the most heavily compressed FLACs, there seems to be a reduction in presence and what some people call 'air', which combine to sap some of the authority and vitality from performances.

This is an important difference, however. After all, as audiophiles, we strive to get the very best out of our systems and stop at nothing to implement any tweak that will improve performance. So understandably, it's equally important that we demand the very best from our chosen archive file type.

So the next step on my journey to total unpackaged media satisfaction seems to be almost a reversal of the last: converting several thousand FLACs to their minimum compression levels. Ah, the joys of being a pernicky computer audiophile! ●

You might be wondering why I'm concerned: I do not enjoy listening to anything but the indisputable best when I settle down to music



MALCOLM STEWARD

is the former editor of *Hi-Fi Review* and one of the most outspoken reviewers around. He writes exclusively for *Hi-Fi Choice*

## WHAT DO YOU THINK?

Do you agree with Malcolm's views on archiving music files?

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